Los Angeles International Airport

14 C.F.R. Part 161 Application for Approval of a Runway Use Restriction

January 2013

APPENDICES

LAX
Los Angeles World Airports

Los Angeles International Airport

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Appendices

This is the second of two volumes for the Los Angeles International Airport 14 C.F.R. Part 161 Application for Approval of a Proposed Runway Use Restriction. The Appendices which follow contain background and supporting material for the Part 161 in accordance with the documentation requirements of 14 C.F.R. Part 161 "Notice and Approval of Airport Noise and Access Restrictions." This is not a stand-alone document and should be used together with the first volume of the Part 161 application. The Appendices are provided under separate cover due to the magnitude of information contained therein and to provide an easier review of the information presented.

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APPENDIX A PUBLIC COMMENTS - EMAIL / HOTLINE

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LAX Part 161 Hotline Comments

Sort	Live/Message	Questions/Comments Call Date	Time	AM/PM	Last Name	First Name	Address	Phone	Questions/Comments	Return Call (Y/N)	Return Call Date	Time	AM/PM	Return Call Comments
	Message	11/10/2006	957	AM	Steiger	Lillian		(323) 754-7850	What is Part 161	Y	11/14/2006	930	AM	Left message
	Message	11/10/2006	1207	AM	Williams	Isabella		(323) 778-8430	What is Part 161	Y	11/14/2006	930	AM	Left message
	Message	11/10/2006	1222	PM	Coleman	Brenda?		(323) 791-3241	What is Part 161	Y	11/14/2006			Left message
	Message	11/10/2006	118	PM		Rosa		(310) 673-5811	Website? Received card.	Y	11/14/2006	930	AM	Airport there first, shouldn't be doing a study.
	Message	11/10/2006	211	PM	Johnson	Mary		(310) 286-8675	Would like to be considered. Best time to call back?	Y	11/14/2006	930	AM	Left message
	Message	11/10/2006	416	PM	Knox			(323) 750-3420	What is Part 161	Y	11/14/2006	930	AM	Left message
	Message	11/13/2006	1201	PM	Brad	Elverdia		(323) 646-7564	What is Part 161	Y	11/14/2006	930	AM	Can't make meetings. Gave her all the info she needed.
	Message	11/13/2006	201	PM	Garnett	Sandra		(323) 750-1213	What is Part 161	Y	11/14/2006	930	AM	Left message
	Message	11/13/2006	208	PM	Thomas	Ava		(323) 779-5868	Where is the meeting?	Y	11/14/2006	930	AM	Gave her meeting information.
	Message	11/13/2006	225	PM	Williams	Bonnie		(323) 373-6719/ (323) 779-9501	Call back.	Y	11/14/2006	1030	AM	Answered soundproofing different, gave her meeting information.
	Message	11/13/2006	710	PM	Murray	Tracy		(323) 751-3323	Call back.	Y	11/14/2006	100	PM	Left message
	Message	11/13/2006	728	PM	Washington	Kevin		(310) 892-7983	Update on insulation of windows	Y	11/14/2006	1030	AM	Explained sound insulation is different, Gave him website information, meeting information
	Message	11/13/2006	750	PM	Brooks	Betty	9415 South Bennett	(323) 779-5288	Include my address in study.	Y	11/14/2006	1030	AM	Left message
	Message	11/13/2006	0:00	PM	Collins	Caprice	3445 West 80th	(323) 751-3859	What restrictions are there, want report for 1 month of flight tracks, Inglewood. Flights after 11pm- thought those were prohibited.	Y	11/14/2006	1030	AM	Current restrictions not being enforced. What are the current regs? Will attend meeting to get her questions answered.
	Live	11/14/2006	850	AM	Seals				What is Part 161? Gave her meeting information.	N				
	Live	11/14/2006	852	AM	Douglas	Diana			Sound insulation? Explained this study is different, gaver her meeting information	N				
	Live	11/14/2006	949	AM	Williams	Isabella			Soundproofing? Gave her all the study/meeting information.	N				
	Live	11/14/2002	1030	AM	Stephens	Pamela		(310) 480-7372	Any reduction is good	N				
	Message	11/14/2006	1039	AM	Richgard	Newton		(323) 754-9565	Received card, website?	Y	11/14/2006	100	PM	Gave him meeting information, explained study.
	Live	11/14/2006	1040	AM	Gordon	Iziqiel		)323) 751- 6313	Very suspicious of yet another noise study. Already have maps/contours. Will attend meeting.	N				
	Live	11/14/2006	133	PM	Murray	Donald	Inglewood		What is Part 161? Gave him meeting and study information.	N				
	Message	11/14/2006	751	PM	James	Venita	Inglewood	(323) 755-1588	Would like to know about sound insulation.	Y	11/15/2006	920	AM	Gave her sound insulation number, explained
	Message	11/15/2006	905	AM	Fisher	Edna		(323) 418-8244	Wants windows	Y	11/15/2006	930	AM	Gave her sound insulation number, explained 161 study
	Message	11/16/2006	1122	AM	Ferrel-Winston	Pat	630 West Queen Street, #11, Inglewood 90301	(714) 670-5135	Evaluating for windows?	Y	11/16/2006	1215	PM	Gave her sound insulation number, explained 161 study. She wants to be on mailing address for study.
	Live	11/16/2006	1245	PM	Eatmon	Berti	4102 West 111th Street, Inglewood, CA 90304		What is the study? Wants to be on mailing list, can't make meetings or go online. Worried the airport wanted to buy her home.	N				
	Message	11/16/2006	936	PM	Hunt	Beverly	10414 South Andrews Place, Los Angeles, 90047		Noise disturbance	N	11/16/2006	1015	AM	Wrong number.
	Message	11/17/2006	915	AM	Hollinsworth	Olivia	2151 West 108th Street, Los Angeles, CA 90047	(323) 779-9219	Wants to be on mailing list. Last minute notice of meetings not ok- just received her notice, after the meeting	Y	11/17/2006	1015	AM	Apoligized for the late notice. Encouraged her to call the hotline with questions, and keep her eyes out for the newsletter
	Message	11/17/2006	948	AM	Biggs	Dimple	2314 West 76th Street, Inglewood, CA 90305-1102	(323) 751-4314	What is the noise study.	Y	11/17/2006	1030	AM	Wants to be on mailing list. Gave her number for sound insulation too.
	Message	11/17/2006	1236	PM	Johnson			(323) 778-0004	?	Y	11/17/2006	208	PM	Left message.
	Message	11/19/2006	314	PM	Davis	Joseph		(323) 696-4520	Wants to be involved, provide input.					
	Message	11/20/2006	1211	PM	Misuko	Catherine	1529 West 67th Street, Los Angeles, CA 90047	(323) 751-6199	What is this?	Y	11/21/2006	900	AM	Explained study, not sound insulation. Remain on mailing list please

Sort	Live/Message	Call Date	Time	AM/PM	Last Name	First Name	Address	Phone	Questions/Comments	Return Call (Y/N)	Return Call Date	Time	AM/PM	Return Call Comments
	Message	11/20/2006	404	PM	Lee	Percy/Jesse	9620 4th Ave., Inglewood, CA 90305	(323) 754-8679	Soundproofing?	Y	11/21/2006	900	AM	Explained study, gave him sound insulation information. Doesn't need info about this study
	Message	11/20/2006	409	PM	Hunt	Beverly		(323) 840-7144	Wants windows	N	11/21/2006	900	AM	Wrong number
	Message	11/21/2006	915	AM	Jones	Beverly	1558 West 121st Street, Los Angeles, CA 90047	(323) 777-6514	What is this?	Y	11/21/2006	920	AM	Explained study. Wants to remain on mailing list.
	Message	11/21/2006	1047	AM	Rogers	Ion	5313 West 119th Street, Inglewood, 90304	(310) 643-6651	What is this?	Y	11/21/2006	145	PM	Explained study. Wants to remain on mailing list.

LAX Part 161 Email Comments

Date Received	Time	AM/PM	E-mail Address	Last Name	First Name	Address	Phone	Questions/Comments	Return E-mail Date	Time	AM/PM	Return E-mail Comments
2/6/2012	8:24	pm	Tgerger@pacbell.net	Gerger	Terri	Keller Williams Realty	323.466.3875	question about window replacement	2/8/2012	1:10	pm	Forwarded to LAWA
10/1/2009	12:49	pm	editor@airportnoisereport.com	Kohut	Anne			Update on Part 161 study	10/8/2009	8:52	am	Provided by by HMMH
10/27/2008	8:42	am	editor@airportnoisereport.com	Kohut	Anne			Update on Part 161 study	11/4/2008	8:51	am	Provided by by HMMH
5/18/2008	10:32	am	imacadangdang@sh-architecture.com	Macadangdang	Iris	7373 Peak Dr., Ste. 250, Las Vegas, NV	702-363-2222	Requested project newsletter	6/5/2008	2:15	pm	Forwarded to LAWA
5/5/2008	12:10	pm	cherokeegirl111@aol.com	Harkins	Terri	3808 Via La Selva, Palos Verdes Estates, CA	310-507-5746	question re: number of flights that take off westerly from LAX each day.	6/5/2008	2:24	pm	Response directing person to airport flight tracks website for info.
5/1/2008	11:56	am	ltagami@csc.com	Tagami	Lynn	398 W. Graves Ave., Monterey Pk, CA		Long message regarding airplane noise complaint	6/5/2008	2:23	pm	Directed to Noise complaint website
1/27/2008	11:31	pm	Nokonkwo@juno.com	Okonkwo	Nanetta	550 W. Regent St. #332, Inglewood, CA	310-400-9517	Requested project newsletter - complaint about airplane noise for 3 days, 24-hours a day since 1/24/2008.	1/30/2008	12:54	pm	Forwarded to LAWA
12/21/2007	11:00	pm	susanna@hotmail.com	none	none	none	none	Requested project newsletter - remainder of message appears to be spam	1/7/2008	4:31	pm	Forwarded to LAWA
12/17/2007	12:16	am	yonimarroqin@sbcglobal.net	Marroquin	Yoni	11138 S. Freeman Ave #A, Inglewood, CA 90304	310-680-9733	Requested project newsletter - noise complaint (in Spanish) regarding noise through the day of 12/16 and into the night of 12/17 disturbed child's sleep	12/18/2007	2:42	pm	Forwarded to LAWA
12/6/2007	1:43	pm	dobell@verizon.net	Bell	David	2350 Tague Ave., Glenside, PA	215-517-8078	Requested project newsletter - requested notice of public meetings	12/10/2007	4:01	pm	Forwarded to LAWA
11/25/2007	1:10	pm	marcos.oras@gmail.com	Betanzos	Marcos	Jose del Pilar 48 Col. Volcanes, Nezahualcoyotl Mexico	55 91 99 63 46	Requested project newsletter - message in Spanish asking for high resolution photos of work being done at airport for magazine article.	12/10/2007	4:02	pm	Forwarded to LAWA
10/29/2007	8:23	pm	dukewilliams@netzero.net	Williams	Duke	1720 Goodman Ave, Redondo Beach, CA		Requested project newsletter	12/10/2007	4:02	pm	Forwarded to LAWA
8/10/2007	10:48	am	snorris@ultrasystems.com	Norris	Sharon	UltraSystems Environmental, 100 Pacifica, Irvine, Ca	949.788.4900	Requested project newsletter	12/10/2007	4:02	pm	Forwarded to LAWA
6/4/2007	9:24	am	dobell@verizon.net	Bell	David	Noise Regulation Report, 2350 Tague Ave., Glenside, PA	215-517-8078	Requested project newsletter				Added to mailing list
5/30/2007	6:01	am	paul@signvalue.com	Wright	Paul	4856 E. Baseline Rd. #104, Mesa, AZ	480-657-8400	Requested traffic flow information.	6/5/2007	3:24	pm	Forwarded to LAWA
2/16/2007	7:17	pm	sbrads01@aol.com	Bradshaw	Sheila	8901 S 10th Ave., Inglewood, CA	310-674-2057	Requested project newsletter - complaint about increased noise w/greater frequency	2/21/2007	12:10	pm	Forwarded to LAWA; Added to mailing list
2/15/2007	4:25	pm	bobdparker@msn.com	Parker	Bobbie	1623 W. 125th St., Los Angeles, CA	323-756-4790	Requested project newsletter - inquiry about project boundaries, requested map	2/21/2007	12:18	pm	Forwarded to LAWA; Added to mailing list
1/31/2007	4:05	pm	gguagliata@dc.rr.com	Guagliata	Giovanni	82581 Cray Mill Dr., Indo, CA	619-316-2422	Requested project newsletter - Inquiry about why Alitalia no longer has non-stop flights				Added to mailing list
1/27/2007	5:40	pm	jostn@pacbell.net	St. Anne	Joseph	4249 Lennox Blvd., Inglewood, CA	310-419-4885	Requested project newsletter				Added to mailing list
1/17/2007	10:53	pm	hpb@netvista.net	Beckman	Howard			Requested project newsletter				Added to mailing list
1/17/2007	9:28	pm	AGRAY88@peoplepc.com	Gray	Anne	1912 W 109th St., Los Angeles, CA	323-777-3620	Requested project newsletter				Added to mailing list

1/16/2007	3:28	pm	catherineBOU@ipjp.ddec.edu.pf	Bioux	Catherine			Wants to know how to get from LAX to Big Bear by taxi.				
12/17/2006	7:12	pm	mbaltheaT@aol.com	Turner	Althea	8211 8th Ave, Inglewood, CA	323-750-6385	Requested project newsletter - complaints about airplanes flying over causing cracks and damage to walls and ceilings.	2/9/2007	11:03	am	Forwarded to LAWA; Added to mailing list
12/16/2006	8:48	am	haldredge@yahoo.com	Aldredge	Helen	1609 W 109th St., Los Angeles, CA	323-777-8193	Requested project newsletter				Added to mailing list
12/12/2006	4:51	pm	efamis@aol.com	Amis	Eric	1408 W 123rd St, Los Angeles, CA	323-756-0843	Requested project newsletter - requested update on sound insulation program in his area.	12/18/2006	1:45	pm	Forwarded to LAWA; Added to mailing list
12/7/2006	1:12	pm	dgrahamloans@aol.com	Graham	Dwight	10415 S St. Andrews Pl, Los Angeles, CA	323-754-7739	Requested project newsletter				Added to mailing list
12/6/2006	12:57	am	Nokonkwo@juno.com	Okonkwo	Nanetta	550 W. Regent St. #332, Inglewood, CA	310-266-1602	Requested project newsletter - complaint about planes flying over home every minute at 12:55 am. Wants to know about noise study and hiring a private company to monitor airplane noise.	12/6/2006	1:27	pm	Forwarded to LAWA; Added to mailing list
12/4/2006	2:44	pm	harris-cynthia@sbcglobal.net	Castile	Cynthia	239 W. Olive St #5, Ingelwood, CA		Requested project newsletter				Added to mailing list
12/2/2006	2:41	am	Nokonkwo@juno.com	Okonkwo	Nanetta	550 W. Regent St. #332, Inglewood, CA	310-266-1602	Requested project newsletter - wants to know who keeps flight path info. Unhappy with being told she's ineligable for soundproofing. Wants to know who should be helping her.	12/6/2006	1:22	pm	Forwarded to LAWA; Added to mailing list
11/28/2006	1:00	pm	shurt48@yahoo.com	Hurt	Shirley	8915 6th Ave, Inglewood, CA	323-752-4143	Requested project newsletter - wants to know why she's not eligible for soundproofing due to her close proximity to airplane noise.	11/28/2006	1:25	pm	Forwarded to LAWA; Added to mailing list
11/20/2006	8:40	pm	jabird@sbcglobal.net	Birdsong	Joyce	1706 Ponty St., Los Angeles, CA		Complains of noise due to landing gear on approach 6 to 10 mins apart. Disturbs dog. Requests soundproofing.				Directed to Noise complaint website
11/20/2006	3:49	pm	alittle888@yahoo.com	Little	Addie	2916 W 81st St, Inglewood, CA	323-253-7475	Complaint about noise impacts on her and her neighbors.				Directed to Noise complaint website
11/20/2006	10:53	am	p.beldixon@ca.rr.com	Dixon	Peggy	78229 West Blvd, Inglewood, CA	323-758-7849	Wants to know if Part 161 will address outdoor noise? Has installed dual pane windows which reduces indoor noise, but outdoor is deafening.	11/20/2006	3:46	pm	Forwarded to LAWA; Added to mailing list
11/19/2006	9:31	am	Stars_we_are@yahoo.com	Thompson	Nita	2141 W. 82nd St, Los Angeles, CA	323-971-5670	Requested project newsletter				Added to mailing list
11/17/2006	10:07	pm	bighands462003@yahoo.com	Graham	Dwight	10415 S St. Andrews Pl, Los Angeles, CA	323-754-7739	Requested project newsletter				Added to mailing list
11/17/2006	6:28	pm	marlinef@msn.com	Franklin	Marline	10631 S. St. Andrews Pl, Los Angeles, CA	323-755-1509	Requested project newsletter - appreciates project, has called to get windows several times, likes the online email form				Added to mailing list
11/17/2006	12:39	pm	sally.a.smith@faa.gov	Smith	Sally			Requested project newsletter				Added to mailing list
11/16/2006	11:23	pm	Bvinnee@yahoo.com	Flores	Dee	Dee Flores Child Care, 1851 W 845th, Los Angeles, CA		Requested project newsletter				Added to mailing list
11/16/2006	12:13	am	vjhdp@sbcglobal.net	Phillips	V	1848 W 75th St, Los Angeles, CA	323-758-7492	Requested project newsletter				Added to mailing list
11/15/2006	1:15	pm	paulhware21@cs.com	Ware	Paul	8910 2nd Ave., Inglewood, CA	323-751-7680	Requested project newsletter				Added to mailing list
11/15/2006	11:36	am	DASHNDASHCREATIONS@YAHOO.COM	Dash	Vivian Marie	3017 W 82nd St., Inglewood, CA	323-387-9200	Wants to know if her home is in the zone.	11/15/2006	2:38	pm	Forwarded to LAWA
11/15/2006	11:34	am		Dash	Vivian Marie							

11/15/2006	11:30	am	DASHNDASHCREATIONS@YAHOO.COM	Dash	Vivian Marie	3017 W 82nd St., Inglewood, CA	323-387-9200	Requested project newsletter				Added to mailing list
11/15/2006	9:56	am	yg22@yahoo.com	Gonzalez	Yeison	2010 W 80th St, Los Angeles, CA	323-778-3088	Requested project newsletter				Added to mailing list
11/15/2006	9:18	am	ambler09@pacbell.net	Pearson	Catherine & Ambler	2006 W 95th St, Los Angeles, CA	323-755-3114	Requested project newsletter - complaint about unbearable noise from planes flying over their home. Unhappy that they do not qualify for soundproofing. Want to re-apply.	11/16/2006	2:36	pm	Forwarded to LAWA
11/14/2006	8:30	pm	babyjay@pacbell.net	Johnson	M	2406 W 78th Place, Inglewood, CA	323-751-0066	Requested project newsletter				Added to mailing list
11/14/2006	8:23	pm	godoymelyna@sbcglobal.net	Godoy	Daniel	4111 W 111th St, Inglewood, CA	310-673-0388	Requested project newsletter				Added to mailing list
11/14/2006	5:31	pm	sjburris512@sbcglobal.net	Burris	Derek	512 St. John Pl, Inglewood, CA	310-677-1657	Requested project newsletter				Added to mailing list
11/14/2006	4:32	pm	dmanuel@mednet.ucla.edu	Manuel	D	8916 S. St. Andrews Pl, Los Angeles, CA	323-752-7240	Wants to know about sound insulation for Los Angeles	11/15/2006	8:19	am	Forwarded to LAWA
11/14/2006	3:13	pm	MVJ6264@lausd.k12.ca.us	Johnson	Maria	3500 W 79th St, Inglewood, CA	310-908-1381	Requested project newsletter - complains about not qualifying for sound insulation. Noise has increased in recent months. Wants to know what recourse she has.	11/14/2006	3:51	pm	Forwarded to LAWA; Added to mailing list
11/14/2006	12:41	pm	liggins marquis@yahoo.com	Bell	Fredrick	1459 W 68th St, Los Angeles, CA	323-750-0598	Requested project newsletters - complaint re: loud airplane noise at night preventing sleep.				Added to mailing list
11/14/2006	12:41	pm	liggins marquis@yahoo.com	Bell	Fredrick	1459 W 68th St, Los Angeles, CA		Duplicate message				
11/14/2006	8:36	am		Norton	Terita	8729 Beckenham Ln #G, Inglewood, CA		Requested project newsletter - requests that info about sound insulaltion be mailed to her.				Added to mailing list
11/13/2006	11:20	pm	Lneill@pacbell.net	Neill	Lorraine	10118 Inglewood Ave, Inglewood, CA	310-674-4689	Requested project newsletter				Added to mailing list
11/13/2006	10:21	pm	cnash59@aol.com	Nash	C	3005 W 81st St, Inglewood, CA		Requested project newsletter				Added to mailing list
11/13/2006	7:21	pm	mitchellearl@sbcglobal.net	Mitchell	Earl	7400 S Harvard Blvd, Los Angeles, CA	323-752-6831	Requested project newsletter				Added to mailing list
11/13/2006	7:06	pm	bettye-rhan@sbcglobal.net	Rhan	Bettye	8616 S 6th Ave, Inglewood, CA	323-971-5160	Requested project newsletter - requests info on when repairs will be made for damage to her home from airplanes.	11/14/12006	1:36	pm	Forwarded to LAWA; Added to mailing list
11/13/2006	4:03	pm	apvwal@aol.com	Wallace	Willie	9632 4th Ave, Inglewood, CA	323-779-1967	Would like info about noise level at his residence. Would like to know location of noise monitors.	11/15/2006	8:56	am	Forwarded to LAWA; Response follows
11/13/2006	2:06	pm	athomas@scif.com	Thomas	Ava	1661 Ponty St, Los Angeles, CA	323-779-5868	Requested project newsletters				Added to mailing list
11/12/2006	10:43	am	vicmar65@msn.com	Ramos	Victor	4230 W 106th St, Inglewood, CA	310-654-3048	15 year resident - complains about coping with airplane noise and inteference with life.				Directed to Noise complaint website
11/11/2006	12:43	pm	billjames43@earthlink.net	James	Bill	3524 W 82nd St, Inglewood, CA	323-971-5477	Requested project newsletters				Added to mailing list
11/11/2006	12:27	pm	leanne2003@mail.com	Layne	Leanne	1506 W 104th St, Los Angeles, CA	323-777-3424	Complaints about airplane noise interference with watching TV and using cell phone (signal drops)				Directed to Noise complaint website
11/11/2006	8:07	am		Hamlin	Stafford	9527 Van Ness, Inglewood, CA		Requested project newsletter				Added to mailing list
11/10/2006	5:47	pm	ward9083@sbcglobal.net	Ward	Robert	9613 5th Ave, Inglewood, CA		Wants to know when his block will be soundproofed - approx date.	11/14/2006	1:30	pm	Forwarded to LAWA
11/10/2006	5:23	pm	rvargas00@global.net	Vargas	Rogelio	10201 Dalerose Ave, Inglewood, CA	310-674-0117	Requested project newsletter				Added to mailing list

11/10/2006	4:20	pm	ewking@dslextreme.com	King	Ernest	11030 Buford Ave, Lennox, CA	310-671-3346	Requested project newsletter - wants to understand what affect project has on quality of life and property values	11/14/2006	1:03	pm	Forwarded to LAWA

APPENDIX B PUBLIC OUTREACH DOCUMENTATION / INITIAL PUBLIC MEETINGS NOVEMBER 2006

B.1 SAMPLE MEDIA RELEASE and FLYER

Media Advisory **Contact: Kerman Maddox**
October 23, 2006 **(310) 815-8444**

Los Angeles World Airports to hold first round of community outreach meetings on Part 161 Noise Abatement Study in Lennox

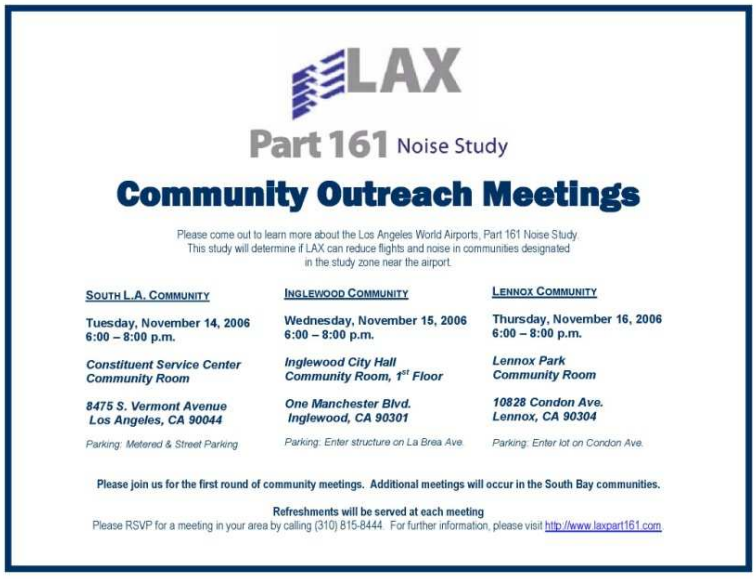
The Los Angeles World Airports (LAWA) will hold a community outreach meeting regarding the LAX Part 161 Noise Application on Thursday, November 16, 2006 at 6:00 p.m. The application will determine if LAX can reduce flights and noise in communities designated in the study zone near the airport. Approval of the application by the Federal Aviation Administration would restrict eastbound departures between the hours of 12:00 am and 6:30 am. LAWA seeks to obtain community input on the application and to provide further information regarding the study components. Residents, community leaders and LAWA administrators are expected to attend the meeting.

Date: Thursday, November 16, 2006

Location: Lennox Park
10828 South Condon Avenue, Lennox, CA 90304

Time: 6:00 pm – 8:00 pm

For additional information about the community outreach meeting, please call (310) 815-8444 or visit www.laxpart161.com.



B.2 Meetings Summary Memo and Comments

LAX Part 161 Noise Study Community Meetings, November 2006

Introduction:

The *Los Angeles World Airports* (LAWA) in conjunction with *HMMH* and *Dakota Communications* held three community outreach meetings regarding the LAX Part 161 Noise Application. The meetings held on November 14th, 15th and 16th, took place in South Los Angeles, Inglewood, and Lennox respectively. Each meeting lasted two hours and each facilitated the needs and concerns of local residents. The following is a brief summary of the meetings along with the major concerns, comments, and feedback given by respective members of the community.

LAX Part 161 South Los Angeles Community Meeting

The Los Angeles World Airports (LAWA) held the South Los Angeles community outreach meeting regarding the LAX Part 161 Noise Application on Tuesday, November 14, 2006. The meeting, which lasted two hours, took place at the Constituent Service Center in Councilman Bernard Parks district office. An extensive outreach effort targeted local organizations, block clubs, opinion leaders, and local media. The effort included flyer distribution, direct mail correspondence, email blast to key organizations, phone calls to targeted organizations, press releases sent to local ethnic publications and attendance at local community gatherings. The aggressive outreach resulted in a large turnout of 116 residents and community leaders.

Bob Holden helped answer questions pertaining to home insulation, while residents concerned about noise made their way through the other stations. Residents were mainly concerned about soundproofing, noise levels, arrival flights, and the length of the study.

The initial format of the meeting had to be changed to accommodate the size of the crowd and the concerns of the attendees but the group's needs were met.

LAX Part 161 Inglewood Community Meeting

LAWA held the Inglewood community outreach meeting regarding the LAX Part 161 Noise Application on Wednesday, November 15, 2006. The meeting, which lasted two hours, took place at Inglewood City Hall. A similar aggressive outreach effort took place in Inglewood, which included an appearance before the Inglewood City Council during the public comment session by Michael Franklin of Dakota Communications. Michael invited all the attendees at the council meeting to attend the workshop at Inglewood City Hall. There were a total of 76 attendees, as a result of outreach to the council, block clubs, residents, community leaders, and city staff. Mayor Roosevelt Dorn also attended the meeting in support of the study. In addition, city personnel from the soundproof division were present to help answer questions.

Although a handful of attendees were concerned about soundproofing, most residents were concerned about noise disruption and the process of the study. Residents took their time at each

station and made an extra effort to understand the basics of the study (i.e. how long will it take, who will implement?).

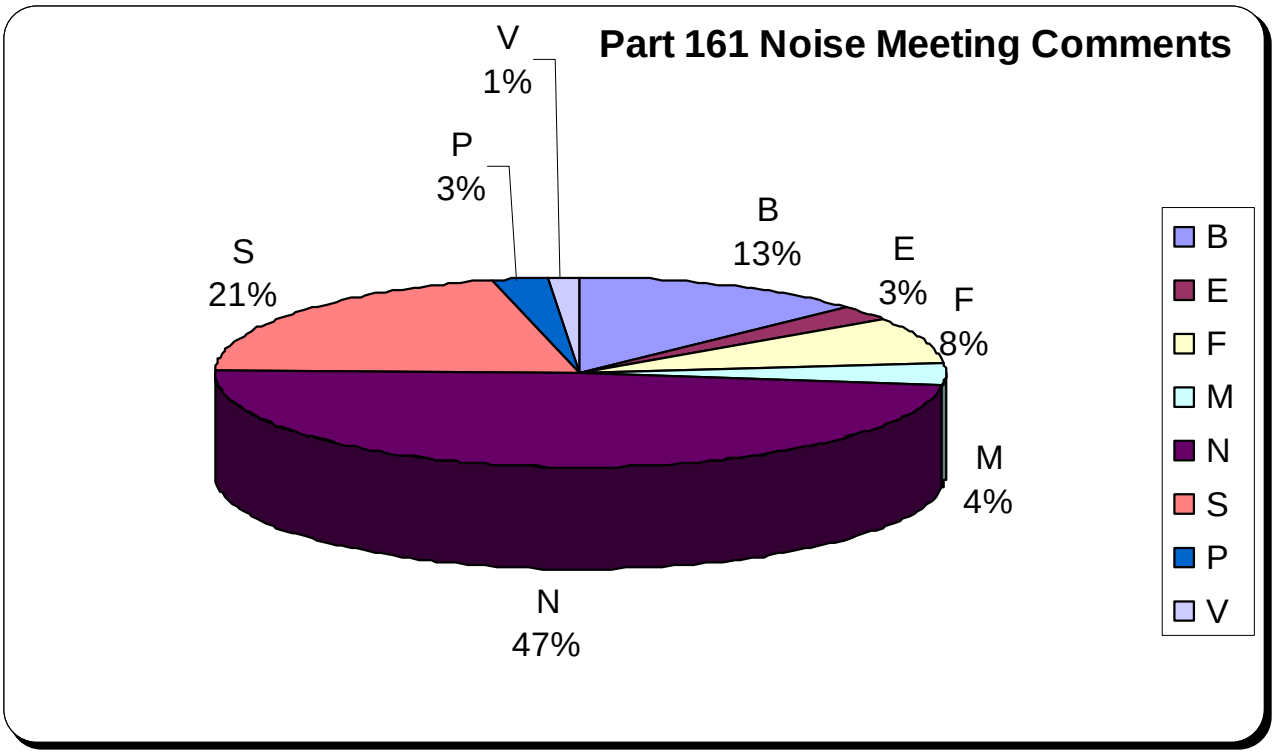
LAX Part 161 Lennox Community Meeting

LAWA held the Lennox community outreach meeting regarding the LAX Part 161 Noise Application on Thursday, November 16, 2006. The meeting, which lasted two hours, took place in the community room at Lennox Park. Voicing their concerns, 46 residents, parents, school board members, and community leaders attended the meeting. Prior to the meeting, flyers were mailed out and distributed to Lennox schools, businesses and homes. In addition, local newspapers, opinion leaders and organizations were notified of the meeting and an appeal was made during the Lennox School Board meeting.

As residents listened attentively to LAWA representatives on the effects of the study, a certified Spanish language interpreter was on hand to help answer questions. Concerned residents were pleased with the study and agreed with LAWA representatives that, "*human health* is by far a high-end benefit that supersedes any and all costs." In general, residents reached a consensus and agreed that this study would help alleviate noise levels and contribute to better sleep at night, and are looking forward to future meetings.

Conclusion

In general, attendees were pleased, well informed and look forward to a second round of meetings. Numerous calls were received regarding future meetings and updates on the noise study. Below is a graphical description of the attendees' comments. The majority (47%) of respondents were concerned with the noise produced by airplanes, while others listed concerns such as soundproofing and fuel disposal. Also attached, please find an excel worksheet, which lists attendees' comments in further detail.



Legend

B	Study Beneficial/supportive
E	Easterly Departures are problems
F	Fuel disposal/smell
M	Miscellaneous
N	Noise Too Loud
S	Need Soundproofing
P	Problems with the study
V	Vibrations from planes
Legend in figure above and following table	

Name	Location	Code	Comment
David & Bettye Woods	Inglewood	N	windows shaking (replaced shattered window panes). Sometimes several per night for 2-3 hours
Paul Ware	Inglewood	N	Hear noise when landing
Nathan Nolen	Inglewood	N	In direct line of the air noise
Patricia Hill	Inglewood	N	Flight patterns should be adjusted for residential communities.
Linda Murphy	Inglewood	N	Has lived at residence for over 20 years and noise has gotten worse.
Caprice Collins	Inglewood	N	Small planes should be restricted. Planes flying after 12am cause stress and health issues.
Ruth Wiggins	Inglewood	N	Hears noise at night after midnight and 2am
Valerie Guidry	Inglewood	N	Has noticed an increase in noise. What can she do about it?
Judy Bowles	Inglewood	N	Planes loud at take off. Not able to sleep due to noise
Loystene Irvin	Inglewood	N	Noise causing health problems for child.
James Evans	Inglewood	N	Noise level loud after midnight. Car alarms go off due to noise.
Earlyne Westbrook	Inglewood	N	Noise over house from airplanes. Change contour maps
George & Doris Dams	Inglewood	N	Planes start at 4:30am to 6:00am every 10 minutes.
Ross Guidry	Inglewood	N/F	Noise and foul air
George Bryant	Inglewood	N/F	Restrictions should be placed on outgoing planes. Fuel from planes dumped on fence.
Restituto Guzman	Inglewood	N/P	Hear's noise day and night. The funds used for this study could be used to insulate homes.
Hickliffe Henderson	Inglewood	N/S	Airplane noise wakes family up every night.
Michael Kitayama	Inglewood	N/S	Jet noise awakens them on a regular basis. Complaint line does nothing.
Jessie Hicks	Inglewood	N/S	Noise is unbearable from planes landing. Wants a noise monitor installed and soundproofing.
Bertha Hall	Inglewood	N/S/F	Noise day and night. Need soundproofing. Fuel and soot on house and automobiles
Shalott Hazzard	Inglewood	P	Disgruntled w/LAWA and doesn't think this project will help
Carol Jackson	Inglewood	S	Need soundproofing
Olga Hebert	Inglewood	S	Need soundproofing
G. Duran	Inglewood	S	Need soundproofing
Jesus Salazar	Lennox	B	Benefit: Restful night for workers and students; asking airlines to be responsible
Lawrence Morris	Lennox	B	noise study is a great beginning to help correcting noise problem
Jocelyn Nuno	Lennox	B	noise study is very good because working parents and students will have rest
Naomi Atkinson	Lennox	B	meeting was very informational, well explained, would like further updates
Genadio Diaz	Lennox	B	Study needs to pass so we can get better sleep
Monica Baquero	Lennox	B	I hope you consider our request to pass the study
Angela Fajardo	Lennox	B	Benefit: Restful night for workers and students to do better the next day
D. Brown	Lennox	B	Must move forward w/ this study so we can all sleep in peace
Berman Cornejo	Lennox	B	Thank you for this meeting, need more of these in our community.
Jose Lorenzana	Lennox	M	Would like study to move faster
Hector Beltran	Lennox	M	Will the FAA listen to a low-income community such as Lennox?
Margarita Garcia de Pulido	Lennox	N	Noise causes sleeping problems
Luis Arevalo	Lennox	N	Need to sleep at night; want airlines to respect that!
Baquero Lorenzo	Lennox	N	Need noise reduction at night in our community.
Maria M. Calix	Lennox	N	Aircraft very loud: trigger car alarms, vibrate windows, and lose sleep.
Eunice Akpan	Lennox	N	Too much noise disrupts sleep and conversations.
Regie Vasquez	Lennox	N	Aircraft very loud: trigger car alarms, vibrate windows, and lose sleep; wake up scared
Felipe Chavez	Lennox	N/F	Noise is a problem. Also, fuel exhaust contamination on cars and gardens.
Arturo Hernandez	Lennox	N/F	Too much noise. Also, planes release "yellow" substance
Pedro Duque	Lennox	N/S	Don't appreciate noise at night. Need soundproof application
Maria Elena Machuca	Lennox	S	Need soundproofing
Chris Johnson	So. L.A.	B	Very informative meeting. Would like more studies in noise reduction.
Karen Proctor	So. L.A.	M	Will need the website
Gail Hayes	So. L.A.	N	Noise disrupts sleep and watching t.v.

Name	Location	Code	Comment
Johnie Adamas	So. L.A.	N	Planes fly all night
Ramona Barker	So. L.A.	N	Noise from flights b/w 12-6:30 am
Delfina McFarlane	So. L.A.	N	Noise disrupting health and work. Problems sleeping.
Leroy Vaughns	So. L.A.	N	Need soundproofing
Mary Vaughns	So. L.A.	N	Noise keeps me awake @ odd hours of night.
Sandra McFarlane	So. L.A.	N/E	Easterly departure disrupts sleep.
Erdine Jordan	So. L.A.	N/F/V	Noise, fumes in area, house vibrating, planes flying too close to home
Hester Watkins	So. L.A.	S	Need soundproofing
Benita Dehorney	So. L.A.	S	Need soundproofing
Mary Odom	So. L.A.	S	Need soundproofing
Howard Sanders	So. L.A.	S	Need soundproofing
Valecia Johnson	So. L.A.	S/E	Need to get in soundproofing program, should have eastbound flights reduced
Kay Johnson	So. L.A.	S	Need soundproofing
George Davis	So. L.A.	S	Need soundproofing

B.3 MEETING HANDOUTS

Los Angeles World Airports
LAX Part 161 Study

How do we Describe Aircraft Noise?

We use a number of terms to describe aircraft noise. These metrics form the basis for the majority of noise analyses conducted at most airports in the U.S.

The Decibel, dB

All sounds come from a source – a musical instrument, a voice speaking, an airplane. The energy that produces these sounds is transmitted through the air in waves, or sound pressures, which impinge on the ear, creating the sound we hear.

The decibel is a ratio that compares the sound pressure of the sound source of interest (e.g., the aircraft overflight) to a reference pressure (the quietest sound we can hear). Because the range of sound pressures is very large, we use logarithms to simplify the expression to a smaller range, and express the resulting value in decibels (dB). Two useful rules of thumb to remember when comparing individual noise sources are: (1) most of us perceive a six to ten dB increase to be about a doubling of loudness, and (2) changes of less than about three dB are not easily detected outside of a laboratory.

The A-Weighted Decibel, dB(A)

Frequency, or "pitch", is an important characteristic of sound. When analyzing noise, we are interested in how much is low-, middle-, and high-frequency noise. This breakdown is important for two reasons. First, our ears are better equipped to hear mid- and high-frequencies; thus, we find mid- and high-frequency noise more annoying. Second, engineering solutions to noise problems are different for different frequency ranges. The "A" filter approximates the sensitivity of our ear and helps us to assess the relative loudness of various sounds.

Maximum A-weighted Sound Level, Lmax

A-weighted sound levels vary with time. For example, the sound increases as an aircraft approaches, then falls and blends into the background as the aircraft recedes into the distance. Figure 1 illustrates this phenomenon. We often describe a particular noise "event" by its maximum sound level (Lmax). Figure 2 shows typical Lmax values for some common noise sources. In fact, two events with identical Lmax may produce very different total exposures. One may be of very short duration, while the other may be much longer.

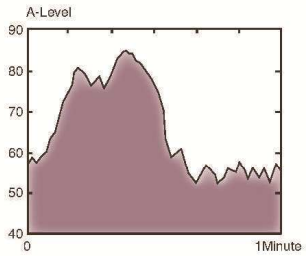


Figure 1. A-weighted Sound Levels Over Time

Sound Exposure Level, SEL, and Single Event Noise Exposure Level, SENEL

SEL is most common measure of cumulative noise exposure for a single aircraft flyover. Mathematically, it is the sum of the sound energy over the entire duration of a noise event – one can think of it as an equivalent noise event with a one-second duration. Figure 3 shows the portion of the sound energy included in this event. Because the SEL is normalized to one second, it will almost always be larger in magnitude than the Lmax for the event. In fact, for most aircraft events, the SEL is about 7 to 12 dB

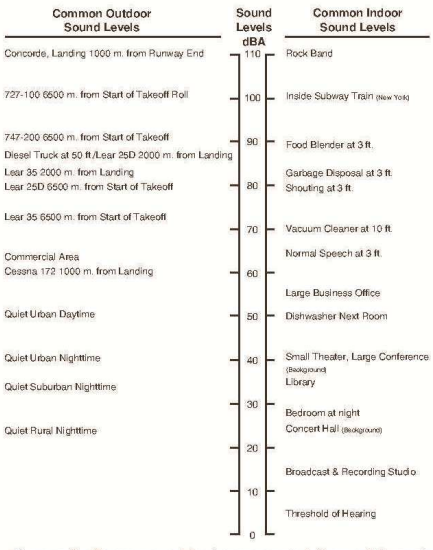


Figure 2. Common Environmental Sound Levels

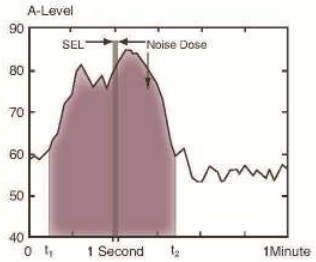


Figure 3. Sound Exposure Level

higher than the Lmax. The fact that it is cumulative measure means that a higher SEL can result from either a louder or longer event, or some combination. California law[1] specifies the use of SENEL, which is a slight variant of SEL, in that it considers the noise level over a period during which the noise level exceeds a threshold level, rather than over its entire duration. In most situations, the SEL and SENEL are identical.

Day-Night Average Sound Level, DNL, and Community Noise Equivalent Level, CNEL

DNL and CNEL are measures of cumulative noise exposure over a 24-hour period, with adjustments to reflect the added intrusiveness of noise during certain times of the day. DNL includes a single adjustment period; each aircraft noise event at night (defined as 10 p.m. to 7 a.m.) is counted ten times. CNEL adds a second adjustment period; in addition to the nighttime adjustment, each aircraft noise event in the evening (defined at 7 p.m. to 10 p.m.) is counted three times. The nighttime adjustment is equivalent to increasing the noise levels during that time interval by 10 dB. The evening adjustment is equivalent to increasing the noise levels by approximately 4.77 dB.

Figure 4 depicts a hypothetical daily noise dose. The top frame repeats the one-minute noise exposure that was shown in Figure 1. The center frame includes this one-minute interval within a full hour; now the shaded area represents the noise during that hour with 16 noise events, each producing an SEL. Finally, the bottom frame includes the one-hour interval within a full 24 hours. Here the shaded area represents the noise dose over a full day.

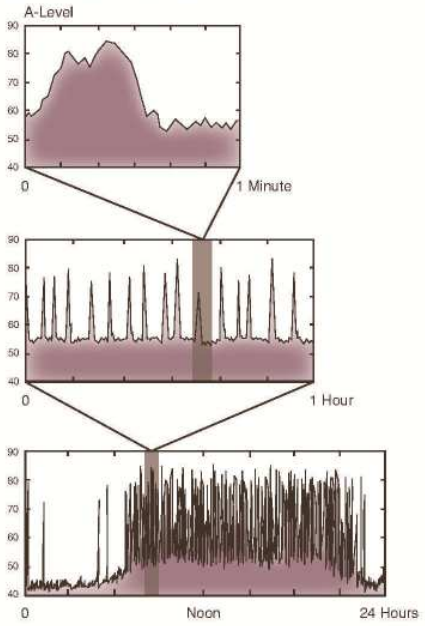


Figure 4. Daily Noise Dose

Most aircraft noise studies utilize computer-generated estimates of DNL or CNEL, determined by accounting for the SEL or SENEL values (as appropriate) from individual events affecting a given point on the ground, adjusted for evening and night as appropriate. Computed values of DNL or CNEL generally are depicted as noise contours reflecting lines of equal exposure around an airport (much as topographic maps indicate contours of equal elevation). California noise regulations require airports in the state to use CNEL. FAA has approved the use of CNEL for that purpose.

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Los Angeles World Airports
LAX Part 161 Study

The Effects of Noise on People

The World Health Organization (WHO) defines health as "A state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity." This broad definition of health embraces the concept of well-being, and thereby renders noise impacts "health" issues. We separate noise effects into two broad categories: auditory (noise-induced hearing loss) and non-auditory (behavioral and physiological effects). Behavioral effects are those that are associated with activity interference. This includes interference with communication, rest or and sleep, and learning; or that produces annoyance. Non-auditory physiological health effects include such things as cardiovascular disease and hypertension. These categories of effects are examined in the following sections.

Noise-Induced Hearing Loss

Hearing loss is measured as "threshold shift". Threshold refers to the quietest sound a person can hear. When a threshold shift occurs, the sound must be louder before it can be heard - a person's hearing is not as sensitive as it was before the threshold shift. The natural decrease of hearing sensitivity with age is called presbycusis. For hundreds of years it has been known that excessive exposure to loud noises can lead to noise-induced temporary threshold shifts, which in time can result in permanent hearing impairment, causing individuals to experience difficulty in understanding speech.

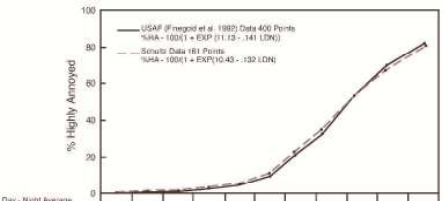
A temporary threshold shift (TTS) usually precedes a noise-induced permanent threshold shift (NIPTS); i.e. after exposure to high noise levels for a short time or lower noise levels for a much longer time, a person's threshold of audibility is temporarily shifted to higher levels. After continuous noise exposure on an eight-hour shift, such TTS can amount to over 20 dB. However, as its name indicates, it is only temporary, and the ear recovers fully after several hours. If such exposures are repeated daily, or if the ear is not allowed to recover, TTS can lead to a permanent threshold shift (PTS). Because aircraft noise is relatively intermittent, it is extremely unlikely that aircraft noise around airports could ever produce hearing loss.

Community Annoyance

Social survey data have long made it clear that individual reactions to noise vary widely for a given noise level. Nevertheless, as a group, people's aggregate response to factors such as speech and sleep interference and desire for an acceptable environment is predictable and relates well to measures of cumulative noise exposure such as DNL. The most widely recognized relationship between noise and annoyance is shown in Figure 1.

Speech Interference

One of the primary effects of aircraft noise is its tendency to drown out or "mask" speech, making it difficult or impossible to carry on a normal conversation without interruption. The sound level of speech decreases as distance between a talker and listener increases. As the level of speech decreases in the presence of background noise, it becomes harder and harder to hear. As the background level increases, the talker must raise his/her voice, or the individuals must get closer together to continue their conversation.



Day - Night Average Sound Level in dB	40	45	50	55	60	65	70	75	80	85	100
Calculated % HA Points USAF	0.41	0.831	1.66	3.31	6.48	12.29	22.1	36.47	53.74	70.16	82.64
SCHULTZ	0.576	1.11	2.12	4.03	7.52	13.59	23.32	37.05	53.25	68.78	81

Figure 1. Noise Level vs. Annoyance [1]

Sleep Interference

The effect of aviation noise on sleep is a long-recognized concern of those interested in addressing the impacts of noise on people. Historical studies of sleep disturbance were conducted mainly in laboratories; field studies also were conducted, in which subjects were exposed to noise in their own homes, using real or simulated noise. The data from these field studies show a consistent pattern, with considerably less percent of the exposed population expected to be behaviorally awakened than had been shown with laboratory studies.

In 1997, the Federal Interagency Committee on Aviation Noise (FICAN) recommended a new dose-response curve for predicting awakening, based on the results of the field studies described above. This curve is presented in Figure 2.

LAWA used this guidance in analysis for the LAX Master Plan.

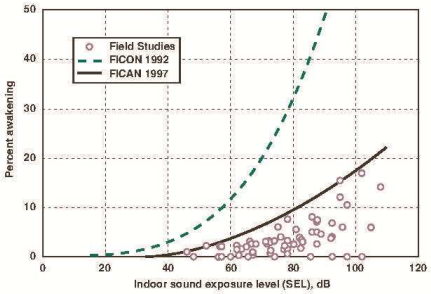


Figure 2. Recommended Sleep Disturbance Dose-Response Relationship [2]

Non-Auditory Health Effects

In spite of considerable worldwide research, there is little solid evidence supporting a claim that noise affects human physical and mental health in the workplace or in communities. Our scientific understanding is far from being able to reliably demonstrate a cause-effect relationship. Researchers have based such claims on laboratory studies of extremely high noise levels or of animals. Many effects observed with intense noises, capable of harming our hearing in a short time, cannot be assumed to occur at moderate and low levels, or to manifest themselves in chronic clinical effects at moderate and low levels.

For practical noise control considerations, the present status of our knowledge means that the criteria for evaluating noise impact, with respect to its direct and indirect effects on health, are the same criteria as those applied to prevent any hearing impairment. In other words, by using criteria that prevent noise induced hearing loss, minimize speech and sleep disruption, and minimize community reactions and annoyance, any effects on health will also be prevented.

The Effects of Noise on Children's Learning

There has been much attention focused recently on the issue of the effects of aviation noise on children and their learning. The research suggests that there are effects in the areas of reading, motivation, language and speech, and memory. One common theory for the causes of these problems is speech interference: if children who are learning to read cannot understand their techer, they may develop reading problems. These problems appear to be aggravated in vulnerable populations, such as children for whom English is a second language. FICAN is conducting a pilot study to determine whether changes in aircraft noise levels can be associated with changes in academic performance, as measured by standardized test scores.

1 Federal Interagency Committee on Noise (FICON), *Federal Agency Review of Selected Airport Noise Analysis Issues*, August, 1992.
2 Federal Interagency Committee on Aviation Noise (FICAN), *Effects of Aviation Noise on Awakenings from Sleep*, June, 1997.
3 S. Fidell et al, "Field study of noise-induced sleep disturbance," *Journal of the Acoustical Society of America*, 98 (2), Pt. 1, August 1995

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B.4 November 2006 Public Meeting Sign-in Sheets

LAWA Part 161 Study Sign-In
South Los Angeles Meeting

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Wendell and Betty		Fields		1907 W. 94th Pl.	Los Angeles	90047	323-754-8011	
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Harry		Thomas		9455 S. Denker	Los Angeles	90047	323-418-0655	
Naomi		Cook		9406 S HARVARD BLVD	Los Angeles	90047	323-756-5854	
Herbert		McGowan		8701 HAAS AVE	Los Angeles	90047	323-971-0064	
Vernon		Brown		2058 W 96TH ST	Los Angeles	90047	323-777-4576	
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Jettie		Edwards		9626 S HARVARD BLVD	Los Angeles	90047	323-779-9785	
Nelle	W.	Thory		3970 Hepburn Ave.	Los Angeles	90008	323-295-8084	
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Porine		Barber		8847 RUTHELEN ST	Los Angeles	90047	323-752-0104	
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Janet		Welch	Southwest Neighborhood Council	2100 W 94TH ST	Los Angeles	90047	323-418-8064	
Ramona		Barker		1550 W. 102nd St.	Los Angeles	90047	323-777-0783	
Mary		Bolden		2007 W 82ND ST	Los Angeles	90047	323-971-0960	
David	J.	Pope		9465 S DENKER AVE	Los Angeles	90047	323-251-2951	
John		Thomas		2101 W. 96th St.	Los Angeles	90047	323-754-7243	
Jack		Brown		1455 W. 94th Pl.	Los Angeles	90047		
Dennis		Olson		3859 S. Sepulveda, #102	Los Angeles	90045	206-409-5407	
George		Davis		1044 W. 84th Pl	Los Angeles	90044	323-778-2098	
Simeon		Simmons		1458 W. 113th St.	Los Angeles	90047	323-418-0236	
Marshall and Marie		Rhynes	The Wilton/ Gramercy Place Neighborhood Watch	8840 S. Gramercy Pl.	Los Angeles	90047	323-751-7192	
West		Bates		9107 S. La Salle	Los Angeles	90047	323-756-0491	
Mildred		Fisher		11158 S. Manhattan Pl.	Los Angeles	90047	323-779-9839	
Ava		Thomas		1661 Ponty St.	Los Angeles	90047	323-779-5868	athomas@scif.com
Lula		Bishop	Southeast Neighborhood Council	1549 W. 82nd St.	Los Angeles	90047	323-758-6156	donzells7@aol.com
Emily and Joe		Foster		9515 S. Denker Ave.	Los Angeles	90047	323-755-8257	
Chris		Johnson		1508 W 95TH ST	Los Angeles	90047	323-305-1853	
Annie		Alexise		1943 W. 84th St.	Los Angeles	90047	323-753-2383	
Mildred		Johnson		837 W. 106th St.	Los Angeles	90047	323-757-2952	

LAWA Part 161 Study Sign-In
South Los Angeles Meeting

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Mary	E.	Lucas		1858 W. 84th St.	Los Angeles	90047	323-751-7726	
Edwin		Lucas		1858 W. 84th St.	Los Angeles	90047	323-751-8182	
Curtis		Hardison		9416 S. Denker Ave.	Los Angeles	90047	323-779-0687	
Claudine		Cook		8759 S. Harvard Bl.	Los Angeles	90047	323-751-9866	
Pearl		Hinnanl		844 W. 94th St.	Los Angeles	90047	323-777-6189	
Shawn		Willis		1629 S. Hobart Blvd.	Los Angeles	90047	323-755-2258	
Lois		Burdette		9132 S. Hobart Bl.	Los Angeles	90047	323-755-0440	
Mary		Odom		1458 W. 84th St.	Los Angeles	90047	323-758-7311	
Jewel	L.	Wood		9505 S. Denker	Los Angeles	90047	323-759-7410	
Norman	P.	Robinson		9413 S. Denker	Los Angeles	90047	323-755-6056	
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Lou		Henderson		1505 W. 96th St.	Los Angeles	90047	323-418-0029	
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Lynn		Washington		1923 W. 84th St.	Los Angeles	90047	323-759-6795	
Julian		Scott		813 W. 95th St.	Los Angeles	90044	323-779-7731	
Helen		Williams		438 E. Colden Ave.	Los Angeles	90003	323-755-2396	
Lloyd	W.	Davis		2018 W. 82nd St.	Los Angeles	90047	323-758-1436	
Aline		Kingsberry		1937 W. 84th St.	Los Angeles	90047	323-750-8363	
Gladys		Simmons		809 W. 95th St.	Los Angeles	90047	323-750-0099	
Andrea	M.	Jackson		1927 W. 84th St.	Los Angeles	90047	323-758-5653	
A.		Thomas		1909 W. 84th St.	Los Angeles	90047	323-758-6511	
Charles	E.	Booker		9608 S. Harvard	Los Angeles	90047	323-754-6255	
Joe	H.	Etheredge		1819 W. 83rd St.	Los Angeles	90047	323-752-6566	
Florine		Powell		2018 W. 104th St.	Los Angeles	90047	323-779-9294	
Rhonda	J.	Hale		9117 S. Gramercy	Los Angeles	90047	323-292-7582	
Lillie		Singleton		9118 S. Gramercy	Los Angeles	90047	323-418-7334	
James and Gwen		Henry		9201 S. Denker	Los Angeles	90047	323-754-8324	
Deborah		Fisher		9700 S. Denker	Los Angeles	90047	323-756-4215	
Gail		Hayes		8775 S. Dalton Ave.	Los Angeles	90047	323-778-4330	
Rosanna		Howell		9133 S. Hobart Blvd.	Los Angeles	90047	323-779-7309	

LAWA Part 161 Study Sign-In
South Los Angeles Meeting

First	Middle	Last	Org.	Address	City	Zip	Phone	Email
Esther		Ogletree		1905 W. 92nd St.	Los Angeles	90047	323-756-5346	
Lydia		Washington		729 W. 105th St.	Los Angeles	90044	323-772-6242	
Mildred		Hill		9504 S. Denker Ave.	Los Angeles	90047	323-750-4538	
Kay		Johnson		2050 W. 93rd St.	Los Angeles	90047	323-756-3634	
Robert		McKinney		2040 W. 82nd St.	Los Angeles	90047	323-752-6152	
Mary		Vaughns		347 W. 78th St.	Los Angeles	90003	323-758-6397	
Leroy		Vaughns		347 W. 78th St.	Los Angeles	90003	323-758-6397	
Karen		Proctor		1550 W. 95th St.	Los Angeles	90047	323-543-3230	
Stephen		Knox		1866 W. 93rd St.	Los Angeles	90047	323-696-0355	sixthree64@sbcglobal.net
Irene		Sibley		12309 Berendo Ave.	Los Angeles	90044		
Bertha		Arnold		1458 W. 84th St.	Los Angeles	90047	323-758-7311	
Solomon		Sheriff		9406 S. Denker	Los Angeles	90047	323-777-3816	
Vernell		Anderson		1418 W. 95th St.	Los Angeles	90047	323-754-1699	
Lester		Anderson		1318 W. 95th St.	Los Angeles	90047	323-777-3705	
Marie		Crow		1936 W. 82nd St.	Los Angeles	90047	323-751-6483	
Beatrice		Fikes		1445 W. 96th St.	Los Angeles	90047	323-779-1524	
Sylvia	Tolles	Cotton	LaSalle Ave. Neighborhood Association	9440 La Salle Ave.	Los Angeles	90047	323-757-1549	cottosy@pacbell.net
Clarence		Magee		2125 W. 84th Pl.	Los Angeles	90047	323-750-8026	
Coquise		Stewart		9473 S. Denker Ave.	Los Angeles	90047	323-779-0835	
Edwin and Low Ann		Johnson		1545 W. 94th Pl.	Los Angeles	90047		
Roy	E.	Jones		9413 S. Harvard	Los Angeles	90047	323-777-1964	
Edgar and	S.	Espana		9617 S. Harvard	Los Angeles	90047	323-779-7299	
Timothy	W.	Strode		1614 W. 82nd St.	Los Angeles	90047		
Bernice		Sanders		8846 Ruthelen	Los Angeles	90047		
Ruth		Mitchell		1937 Van Wick	Los Angeles	90047		
Ana		Fuentes		209 W. 103rd St.	Los Angeles	90047	323-754-8140	
Mary		Henderson		10331 La Salle	Los Angeles	90047		
Pearlie		Johnson		601 W. 95th St.	Los Angeles	90044		
Valecia		Johnson		8722 Cimarron St.	Los Angeles	90047		
Eugene		Jackson		10500 S. Gramercy Pl.	Los Angeles	90047	323-418-0326	
Sandra		McFarlane		1944 W. 112th St.	Los Angeles	90047	323-777-0868	Sandra.McFarlane@lacity.org
Juanita	S.	Nelson		8801 Haas Ave.	Los Angeles	90047	323-753-6184	

LAWA Part 161 Study Sign-In
South Los Angeles Meeting

First	Middle	Last	Org.	Address	City	Zip	Phone	Email
Constance		Slack		8801 Haas Ave.	Los Angeles	90047		cslack@mail.com
Robert and Bernice		Miller		8952 Ruthelen St.	Los Angeles	90047		
Illinois		Jordan		1407 W 81ST ST	Los Angeles	90047		
Arthur		Taylor		1559 W. 82nd St.	Los Angeles	90047		
Barbara		Burnett		10423 S. Denker	Los Angeles	90047	323-754-1776	
Hester		Watkins		2029 W. 83rd St.	Los Angeles	90047		
Benita		Dehorney		1515 W. 95th St.	Los Angeles	90047	323-779-6615	
Columbus		Allen		1720 W. 84th Pl.	Los Angeles	90047	323-371-2812	
Soloris		Greene		1828 W. 83rd St.	Los Angeles	90047	323-750-8348	
James		Harris	Southwest Neighborhood Council	8475 S. Vermont	Los Angeles	90047		
Angelo		White		433 E. Centerview Dr.	Carson	90746	323-605-5222	

LAWA Part 161 Study Sign-In
Inglewood Meeting

First	Middle	Last	Org.	Address	City	Zip	Phone	Email
Richard		Gilliam		320 E. Spruce St. Ave., Apt. J	Inglewood	90301	310-674-0718	sayrich@aol.com
Olga		Hebert		10624 S. 6th Ave.	Inglewood	90303	323-754-3169	Omedina@cityofinglewood.org
Neani	M.	Booke		10503 S. 2nd Ave.	Inglewood	90303	323-779-0963	
Linda		Murphy		1302 W. 83rd St.	Los Angeles	90044	323-971-0740	whome99@sbcglobal.net
David & Bettye		Woods		1528 W. 110th Pl.	Los Angeles	90047	323-756-8034	Bdozierwoods@aol.com
Nathan	D.	Nolen		8623 6th Ave.	Inglewood	90305	323-759-0722	
Myrtle		Nolen		8624 6th Ave.	Inglewood	90306	323-759-0722	
Audrey		Hebert		2045 W. 82nd St.	Los Angeles	90047	323-753-0495	
Matthew		Hebert		2045 W. 82nd St.	Los Angeles	90047	323-753-0495	
LaVerne		Mann		9609 S. 5th Ave.	Inglewood	90305	323-777-4455	Latham@pacbell.net
Paul		Ware		8910 S. 2nd Ave.	Inglewood	90305	323-751-7680	
Myrtle		Ware		8910 S. 2nd Ave.	Inglewood	90305	323-751-7680	
Ezekiel		Gordon		8715 S. Van Ness	Inglewood	90305	323-751-6313	
Jessie		Hicks		9007 3rd Ave.	Inglewood	90305	323-777-9727	Rhicks900@cairr.com
Rodica	D.	Constant		1137 S. Eucalyptus	Inglewood	90301	310-673-7757	MKRDC@earthlink.net
Michael		Kitayama		1137 S. Eucalyptus	Inglewood	90301	310-673-7757	MKRDC@earthlink.net
Janis		Williams		9600 S. 5th Ave.	Inglewood	90305	323-757-9410	montjuice@aol.com
Jose	L.	Martin		9718 Redfern Ave.	Inglewood	90301	310-680-9527	
Esoof		Bholat		243 E. Tamarack Ave.	Inglewood	90301	310-672-1003	ESOOFBHOLAT@YAHOO.COM
Carol		Jackson		8917 S. 2nd Ave.	Inglewood	90305	323-758-0610	sandcint@pacbell.net
Judy		Bowles		1117 S. Truno	Inglewood	90305	310-877-3948	
Loystene		Irvin		10236 S. 2nd Ave.	Inglewood	90303	323-754-8195	loystene@msn.com
Hector		Ruiz		8805 S. 7th Ave.	Inglewood	90305	310-612-5110	hruiz93@hotmail.com
Shalott		Hazzard		9011 S. 3rd Ave.	Inglewood	90305	310-722-1328	duhue2@aol.com
Robert		Melean		8923 7th Ave.	Inglewood	90305	310-261-4834	Robert@Jetroinc.com
Ruoy		Green		10208 2nd Ave.	Inglewood	90303	323-777-7551	
Henderson		Wickliffe		9122 S. 4th Ave.	Inglewood	90305	323-755-6891	
Henry		Cusack		4844 W. 94th St.	Inglewood	90301	310-632-6751	
Breeda		Cusack		4844 W. 94th St.	Inglewood	90301	310-672-6751	
Cahan		Wickliffe		8308 S. 3rd Ave.	Inglewood	90305	323-753-5334	
MacArthur		Wickliffe		8308 S. 3rd Ave.	Inglewood	90305	323-753-5334	
Mary		Beal	10th and 11th Ave. Block Club	9301 - 10th Ave.	Inglewood	90305	310-671-6850	marycake@sbcglobal.net

LAWA Part 161 Study Sign-In
Inglewood Meeting

First	Middle	Last	Org.	Address	City	Zip	Phone	Email
Bertha		Hall		3859 Thorncroft Ln., Unit I	Inglewood	90305	310-412-5643	
Bruce		Lee		236 W. Olive St.	Inglewood	90301	310-671-7133	
George	M.	Davis		3218 W. 83rd St.	Inglewood	90305	323-778-2098	
Doris	F.	Davis		3218 W. 83rd St.	Inglewood	90305	323-778-2098	
Bill		Sanders		8716 S. 3rd Ave.	Inglewood	90305	323-759-4063	
Ben		Ibarra		4900 W. 99th St.	Inglewood	90301	323-677-5124	
Joseph		Adger	5th Ave. Block Club	9413 S. 5th Ave.	Inglewood	90305	323-777-2863	
Eleanor		Smiley	11th Ave. Block Club	9712 S. 11th Ave.	Inglewood	90305	323-854-3337	n2success@sbcglobal.net
Janet		Brown		9312 10th Ave.	Inglewood	90305	310-671-1734	dr.janbrown@yahoo.com
Caprice		Collins		7445 W. 80th St.	Inglewood	90305	310-677-9787	clcfirm@aol.com
George		Bryant		541 E. 99th St.	Inglewood	90301	310-677-5980	
Grates		Bryant		541 E. 99th St.	Inglewood	90301	310-677-5980	
James	B.	Evans		9812 S. 11th Ave.	Inglewood	90305	310-412-7082	jandaevans@sbcglobal.net
Woody		Holler	76th St. Block Club	3010 W. 76th St.	Inglewood	90305	323-752-1715	
Ruth	H.	Wiggins		3855 Therner St.	Inglewood	90305	310-674-5644	
Earlyne		Westbrook	3rd Ave. Central Neighborhoos	9228 S. 3rd	Inglewood	90305	323-754-8111	
Charles and Joyce		Mayfield		9006 S. 5th Ave.	Inglewood	90305	323-757-1130	
April		Lawrence	Office of Congresswoman Waters	10124 S. Broadway, Ste. 1	Los Angeles	90003	323-757-8900	
J.		Wells		9211 LaSalle Ave.	Los Angeles	90047	323-754-1312	
Dan		Carther		9211 LaSalle Ave.	Los Angeles	90047	323-754-1312	
Charles		Mallet		3310 W. 79th	Inglewood	90305	323-753-4780	
Lemond		Williams		9600 S. 5th Ave.	Inglewood	90305	323-757-9410	
Fred		McDaniels		8316 S. 3rd Ave.	Inglewood	90305	323-778-8228	
Anita		Willis		8939 Sepulveda #110-790	Los Angeles	90045	310-391-4737	
Louise		Adkins		3013 W. 84th St.	Inglewood		323-751-5547	
Edgar		Saenz	Office of Congresswoman Waters	10124 S. Broadway, Ste. 1	Los Angeles	90003	323-757-8900	

LAWA Part 161 Study Sign-In
Inglewood Meeting

First	Middle	Last	Org.	Address	City	Zip	Phone	Email
Horatio		Harvey		8931 LaSalle Ave.	Los Angeles	90047	323-971-5350	
Mattie		Cammach		9240 S. Harvard Blvd.	Los Angeles	90047	323-756-5297	mcammack@sbc.com
Dr. Evelyn	S.	Clark		101 N. LaBrea Ave., Ste. 301	Inglewood	90301	310-412-0202	
Ann		Franklin		3767 Danbury Ln.	Inglewood	90305	310-671-7107	
Larry		Oghenekohwo		9818 S. 11th Ave.	Inglewood	90305	310-671-7588	
Delmas		Davis		2133 Thoreau St.	Los Angeles	90047	323-755-1424	delray8356@aol.com
Ross		Guidry		11707 Ruthelen Ave.	Los Angeles	90047	323-754-2087	
Valerie		Guidry		11707 Ruthelen Ave.	Los Angeles	90047	323-754-2087	
R.		Guzman		660 Aerick St.	Inglewood	90301	310-590-1333	
G.		Duran		4322 W. 103rd St.	Lennox	90304		g.duranmedina@sbcglobal.net
George		Harris		636 W. Queen St., Apt. C	Inglewood	90301	310-673-9427	
Jose		Delatorre		11162 Doty Ave.	Inglewood	90303	310-671-9337	
Richard		Kaufman		P.O. Box 1338	Inglewood	90303	310-627-7024	
Patricia		Hill		1507 W. 83rd St.	Los Angeles	90047		
T.		Short			Inglewood	90303		tshort512@aol.com

LAWA Part 161 Study Sign-In
Lennox Meeting

First	Middle	Last	Org.	Address	City	Zip	Phone	Email
Mary		Davis	Lennox School District	10106 Mansel	Lennox	90304	310-677-0593	
Luis		Arenalo		10416 Firmona Ave.	Lennox	90304	310-936-9204	l_arenalo7@yahoo.com
Maria		Verduzco-Smith	Lennox Coordinating Council	10927 Grevillea Ave.	Lennox	90304	310-412-9094	
Magdalena		Ramirez		10211 Felton Ave.	Lennox	90304	310-672-0309	
Carlos		Ramirez		10211 Felton Ave.	Lennox	90304	310-672-0309	
Jesus		Salazar		11320 Mansel Ave.	Lennox	90304	310-623-3132	
Victor		Mendoza		10315 Dalerose Ave.	Lennox	90304	310-419-5021	
Maria	E.	Jaime		10318 Burl Ave.	Lennox	90304	310-671-1383	
Lizzie and Lawrence		Morris		4026 W. 107th St.	Lennox	90304	310-673-3006	
Raul		Ramirez		10202 Dalerose Ave.	Lennox	90304	310-677-5329	
Margarita		Garcia		10928 Firmona Ave.	Lennox	90304	310-677-3016	
Maria		Cerdas	Supervisor Yvonne Burke's Office		Lennox	90304	213-893-0327	mcerdas@bos.lacounty.gov
Luis		Chavez		10903 Eastwood	Lennox	90304	310-672-5474	
Naomi and Clarence		Atkinson		10712 Buford Ave.	Lennox	90304	310-677-3870	
Lorenzo		Baquero		10323 Condon Ave.	Lennox	90304	310-412-5807	albertdj06@aol.com
Monica		Baquero		10323 Condon Ave.		90304	310-412-5807	
Eunice		Akpan		1518 W. 103rd St.	Los Angeles	90047	323-359-0053	imefot@sbcglobal.net
Hector		Beltran		10927 Struro Ave.	Lennox	90304	310-677-5327	
Pedro		Duque		4314 W. 106th St.	Inglewood	90304	310-673-1840	
Arturo		Hernandez		4314 1/2 W. 106th St.	Inglewood	90304	310-673-7524	
Maria Elena		Machuca		4720 W. 104th St.	Lennox	90304	310-674-7471	
Francisco		Ramirez		4338 W. 103rd St.	Lennox	90304	310-672-4044	
Celia		Ramirez		4340 W. 103rd St.	Lennox	90304	310-672-4044	
Flor		Barajas-Tena	LAANE - LAX Coalition	464 Lucas Ave., Suite 202	Los Angeles	90017	213-977-9400	fbtena@laane.org
Mauna		Arnes		10513 Inglewood	Lennox	90304	310-673-7116	
Enio		Melgar		10303 S. Grevillea Ave.	Lennox	90304	310-673-8829	margaritamelgar@sbcglobal.net
Angela		Fajardo		11113 Inglewood Ave.	Lennox	90304	310-674-4036	afajardo2001@yahoo.com
Cecil		Carpio		407 Exton Ave. #4	Inglewood	90302		

LAWA Part 161 Study Sign-In
Lennox Meeting

First	Middle	Last	Org.	Address	City	Zip	Phone	Email
Benjamin		Garcia		11324 Mansel Ave.	Inglewood	90304	310-672-2631	
Carlos		Gonzalez		4932 W. 109th	Inglewood	90304	310-422-4683	carlo28mgr@yahoo.com
Maria		Lorenzana		10308 S. Burl Ave.	Lennox	90304	310-412-7973	
Jose		Lorenzana		10308 S. Burl Ave.	Lennox	90304	310-412-7973	
Felipe		Chavez		4312 W. 106th St.	Lennox	90304	310-672-8412	
Maria		Calix		10609 Mansel Ave.	Lennox	90304	310-412-5869	calixm@msn.com
Tomosa		Olvera		4147 W. 106th St.	Lennox	90304	310-673-3163	
Berman		Cornejo		10923 S. Inglewood	Lennox	90304	310-674-4287	
Francisco		Duran		11034 Condon Ave.	Lennox	90304	310-671-6313	
Miguel		Alvarez		10215 Felton	Inglewood	90304	310-674-7717	
Genadio		Diaz		10209 Dalerose	Inglewood	90304	310-673-6341	
Regie		Vasquez		4117 W. 107th St.	Lennox	90304	310-672-6777	
John		Bowman		408 W. Fairview Blvd.	Inglewood	90302		
Paris		Brown		637 E. Queen St.	Inglewood	90301		
Celedone & Francisco		Duran						

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APPENDIX C PUBLIC WORKSHOP/MEETING NOVEMBER 2012 AND PUBLIC COMMENTS

C.1 Publication of Public Notice

PROOF OF PUBLICATION
(2015.5 C.C.P.)

STATE OF CALIFORNIA
County of Los Angeles

I am a citizen of the United States and a resident of the County aforesaid; I am over the age of eighteen years, and not a party to or interested in the above-entitled matter. I am the principal clerk of the printer of The Argonaut, a newspaper of general circulation, printed and published weekly in the County of Los Angeles, State of California, under the date of March 7, 1973, modified October 5, 1976, Case Number C47170; that the notice, of which the annexed is a printed copy (set in type not smaller than nonpareil), has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to-wit:

11/1

All in the year 2012

I certify (or declare) under penalty of perjury that the foregoing is true and correct.

Dated at Los Angeles

California, the 1st of November, 2012

Signature:

Joy Lesser

The Argonaut

Located at: 5355 McConnell Ave.,
Los Angeles, CA 90066

(310) 822-1629 x 103

Proof of Publication of

Los Angeles World Airports
NOTICE OF PROPOSED AIRPORT USE RESTRICTION:
"RUNWAY USE RESTRICTION"
at
Los Angeles International Airport, Los Angeles, California

Los Angeles World Airports (LAWA) hereby provides notice of its proposal to establish a runway use restriction at Los Angeles International Airport (LAX) that restricts easterly departures of all aircraft, with certain exemptions, between the hours of 12:00 midnight and 6:30 a.m. when LAX is in the "Over-Ocean" or "Westerly" operations mode.

Title 14 of the Code of Federal Regulations Part 161 (14 C.F.R. Part 161), "Notice and Approval of Airport Noise and Access Restrictions," defines analysis, notice, and approval requirements for airport operators proposing use restrictions that affect any aircraft shown to comply with 14 C.F.R. Part 36 Stage 3 requirements. LAWA has prepared a report titled "Los Angeles International Airport Part 161 Application for Approval of a Runway Use Restriction" that addresses the requirements in full.

This notification addresses Part 161.303(c) requirements for published and posted notices including the following information:

1. The name of the airport and associated cities and states:

Los Angeles International Airport, Los Angeles, California

2. A clear, concise description of the proposed restriction (and any alternatives, in order of preference), including a statement that it will be a mandatory Stage 3 restriction, and where the complete text of the restriction, and any sanctions for noncompliance, are available for public inspection:

The proposed restriction is a ban on all aircraft departures to the east, including but not limited to Stage 3 aircraft, with certain exemptions, from 12:00 midnight to 6:30 a.m. when the airport is in Over-Ocean or Westerly Operations. During these conditions, all aircraft will be permitted to depart to the west. Item 6 provides further details on public review opportunities.

3. A brief discussion of the specific need for, and goal of, the restriction.

To reduce the occurrence and frequency of nighttime awakenings for residents living near Los Angeles International Airport by eliminating non-conforming operations between midnight and 6:30 a.m. when the airport is in Over-Ocean Operations or Westerly Operations.

4. Identification of the operators and the types of aircraft expected to be affected:

Section REF _Ref322449356 \r \h * MERGEFORMAT 7 of the LAX 14 C.F.R. Part 161 application identifies the operators and types of aircraft affected. In summary, the restriction will affect any passenger, cargo, or general aviation aircraft, whose operators would, absent the restriction, seek between midnight and 6:30 a.m. to depart to the east when LAX is in Over-Ocean or Westerly Operations. Historical information indicates very few operations would be affected: in the 130-month period (nearly 11 years) from June 2000 through March 2010, 699 aircraft departures (or an average of 65/year) would have been affected if this rule had been in effect.

5. The proposed effective date of the restriction, the proposed method of implementation (e.g., city ordinance, airport rule, lease or other document), and any proposed enforcement mechanism:

The proposed effective date is estimated to be December 1, 2013. Implementation will be through a City of Los Angeles ordinance with enforcement similar to other airport restrictions.

6. An analysis of the proposed restriction, in accordance with Section 161.305, or an announcement regarding where the analysis is available for public inspection:

The Notice and Draft LAX Part 161 Study application and supporting materials will be available for public inspection beginning November 1, 2012 at the following locations:

On-line at HYPERLINK "http://www.laxpart161.com/" www.laxpart161.com/

LAWA Environmental Services Division at LAX – 7301 World Way West, Room 312, Los Angeles, CA 90045, Monday through Friday, 7:30 AM to 4:00 PM

Inglewood Public Library – 101 W. Manchester Blvd, Inglewood, CA 90301

County of Los Angeles Public Library – 4359 Lennox Blvd., Lennox, CA 90304

Mark Ridley Thomas Constituent Services Center – 8475 S. Vermont Ave., Los Angeles, CA 90044

Westchester – Loyola Village Branch Library, 7114 W. Manchester Ave., Los Angeles, CA 90045

City Halls within the airport noise study area, which will receive an electronic copy on disk, include:

City of Bell	City of Los Angeles, Office of Mayor
City of Bellflower	City of Lynwood
City of Bell Gardens	City of Manhattan Beach
City of Carson	City of Maywood
City of Commerce	City of Montebello
City of Compton	Palos Verdes Estates
City of Cudahy	City of Paramount
City of Culver City	Rancho Palos Verdes
City of Downey	City of Redondo Beach
City of El Segundo	Rolling Hills Estates
City of Gardena	City of Rolling Hills
City of Hawthorne	City of Santa Monica
City of Hermosa Beach	City of Seal Beach
City of Huntington Park	Signal Hill
City of Inglewood	City of South Gate
City of Lakewood	City of Torrance
City of Lawndale	City of Vernon
City of Lomita	

7. An invitation to comment on the proposed restriction and analysis, with a minimum 45-day comment period:

LAWA will accept comments on the proposed restriction and analysis until 5 p.m. on December 17, 2012. Written comments must be submitted to the addresses identified in item 9.

8. Information on how to request a copy of the complete text of the restriction, including any sanctions for noncompliance, and the analysis (if not included with this notice):

The complete text of the restriction, including any exemptions and sanctions for non-compliance is provided in Section 3 of the LAX 14 C.F.R. Part 161 Report, which will be available for public inspection beginning November 1, 2012 at locations identified in Item 6.

9. The address for submitting comments to the airport operator proposing the restriction, including identification of a contact person:

Comments may be submitted online at www.laxpart161.com/en/Comments.cfm or in writing to the following contact:

Mr. Scott Tatro
Los Angeles World Airports
1 World Way/P.O. Box 92216
Los Angeles, CA 90009-2216
Email: laxpart161@lawa.org

PROOF OF PUBLICATION
(2015.5C.C.P.)

La Opinión

www.laopinion.com ImproMedia

700 S. Flower St. • Los Angeles, CA 90017
Tel: (213) 896-2260 • Fax: (213) 896-2238

STATE OF CALIFORNIA

I am a citizen of the United States and a resident of the county aforesaid; I am over the age of eighteen years, and not a party to or interested in the above-entitle matter. I am the principal clerk of the printer of La Opinión a newspaper of general circulation, printed and published daily in the city of Los Angeles, County of Los Angeles, and which newspaper has been adjudged a newspaper of general circulation by the Superior Court of the County of Los Angeles, State of California, under the date of July 28, 1969, Case Number: 950176; that the notice, of which the annexed is a printed copy, has been published in each regular and not in any supplement thereof on the following dates, to-wit:

NOV. 1

all in the year 20 12

I certified (or declare) under penalty of perjury that the foregoing is true and correct.

Dated at Los Angeles, California, this

16 day of NOV., 2012

Rose Benner
Signature

ADV #017 Controlled
Rev. 03/12

Los Angeles World Airports (LAWA)
AVISO DE LA RESTRICCIÓN PROPUESTA DEL USO DEL AEROPUERTO:
"RESTRICCIONES EN EL USO DE PISTA"
del
Aeropuerto Internacional de Los Ángeles (LAX), Los Ángeles, California

Los Angeles World Airports (LAWA) dan aviso de la propuesta para establecer una restricción del uso de pista en el aeropuerto internacional de Los Angeles (LAX), se procura prohibir las salidas hacia el este, con ciertas excepciones, entre las horas de medianoche y 6:30 de la mañana, cuando LAX está en operaciones sobre el océano o cuando permanece en operaciones del oeste durante estas horas.

El código de regulaciones federales de los Estados Unidos, título 14 (14 CFR Part 161), "Aviso y Aprobación del Ruido y Acceso de Restricciones del Aeropuerto," define el análisis, aviso, y aprobación de requisitos de los operadores aeroportuarios que proponen restricciones de uso que afectan a cualquier avión que cumple con los requisitos de 14 CFR Parte 36 Etapa 3. LAWA ha preparado un informe titulado "Solicitud de Aprobación de la Restricción del uso de Pista del Aeropuerto Internacional de Los Ángeles Parte 161" que anuncia los requisitos en su totalidad.

Esta notificación explica Parte 161.303 (c) los requisitos de los avisos publicados, incluyendo la siguiente información:

1. El nombre del aeropuerto, ciudades y estados asociados:

Aeropuerto Internacional de Los Ángeles, Los Ángeles, California.

2. Una clara y concisa descripción de la restricción propuesta (y cualquier alternativa, en orden de preferencia), incluyendo una declaración que la etapa 3 va a ser una restricción obligatoria, y donde el texto completo de la restricción, y las posibles sanciones por incumplimiento, están disponibles para la inspección pública:

La restricción propuesta es la prohibición de todas las salidas de aviación hacia el este, incluyendo pero no limitado a la etapa 3, con algunas excepciones, a partir de 12:00 de la noche a 6:30 de la mañana cuando el aeropuerto está en operaciones sobre el océano o cuando permanece en operaciones del oeste. Tema 6 proporciona más detalles sobre la posibilidad de revisión pública.

3. Un breve análisis de la necesidad específica de, y el objetivo de la restricción.

Para reducir la ocurrencia y la frecuencia de despertamientos nocturnos a los residentes que viven cerca del aeropuerto internacional de Los Ángeles, eliminando operaciones disconformes entre la medianoche hasta las 6:30 de la mañana, cuando el aeropuerto está en operaciones sobre el océano o cuando permanece en operaciones del oeste

4. Identificación de los operadores y los tipos de aviones que esperan ser afectados.

Sección W del LAX 14 CFR Parte 161 identifica a los operadores y tipos de aviones que esperan ser afectados. En resumen, la restricción afectara la aviación pasajera, de carga y aviación general cuyos operadores determinan la necesidad de partir hacia el este durante las horas cuando el aeropuerto está en operaciones sobre el océano o cuando permanece en operaciones del oeste. La información histórica indica que muy pocas operaciones serían afectadas, en el período de 130 meses (casi 11 años) abarcar de junio de 2000 hasta marzo de 2010, 699 salidas de aviones (o un promedio de 65/año) fueron afectados, si esta norma hubiera tomado lugar.

5. La fecha propuesta de la restricción, el método propuesto para la aplicación (por ejemplo, ordenanza de la ciudad, el arrendador del aeropuerto, arrendamiento u otro documento), y cualquier mecanismo de aplicación propuesto.

La fecha efectiva de la propuesta es el 1 de diciembre de 2013. El programa se ejecutará a través de una ordenanza de la Ciudad de Los Ángeles con la aplicación de restricciones similares a otros aeropuertos

6. Un análisis de la propuesta de restricción, de conformidad con la Sección 161.305, o un aviso anunciando donde el análisis está disponible para inspección pública.:

La notificación y el plan preliminar del Estudio de la Parte 161 de LAX está disponible para inspección pública en los siguientes lugares, al empezar del 1 de noviembre de 2012:

- En línea: www.laxpart161.com/
- LAWA División Ambiental de Servicios de LAX - 7301 World Way West, Room 312, Los Ángeles, CA 90045, de lunes a viernes, de 7:30 AM a 4:00 PM
- Biblioteca Pública de Inglewood – 101 W. Manchester Blvd., Inglewood, CA 90301
- Biblioteca Pública del Condado de Los Angeles – 4359 Lennox Blvd., Lennox, CA 90304
- Marc Ridley Thomas Centro de Servicios de Constituyente - 8475 S. Vermont Ave., Los Ángeles, CA 90044
- Westchester – Biblioteca de Loyola Village, 7114 W. Manchester Ave., Los Ángeles, CA 90045
- Municipios dentro del área de estudio del ruido, cuales recibirán un disco electrónico de información, incluyen:

• Ciudad de Bell	• Ciudad de Huntington Park	• Rancho Palos Verdes
• Ciudad de Bellflower	• Ciudad de Inglewood	• Ciudad de Redondo Beach
• Ciudad de Bell Gardens	• Ciudad de Lakewood	• Rolling Hills Estates
• Ciudad de Carson	• Ciudad de Lawndale	• Ciudad de Rolling Hills
• Ciudad de Commerce	• Ciudad de Lomita	• Ciudad de Santa Monica
• Ciudad de Compton	• Ciudad de Los Ángeles, Oficina del Alcalde	• Ciudad de Seal Beach
• Ciudad de Cudahy		• Signal Hill
• Ciudad de Culver City	• Ciudad de Lynwood	• Ciudad de South Gate
• Ciudad de Downey	• Ciudad de Manhattan Beach	• Ciudad de Torrance
• Ciudad de El Segundo	• Ciudad de Maywood	• Ciudad de Vernon
• Ciudad de Gardena	• Ciudad de Montebello	
• Ciudad de Hawthorne	• Palos Verdes Estates	
• Ciudad de Hermosa Beach	• Ciudad de Paramount	

7. Una invitación para dar comentarios sobre la propuesta de restricción y análisis, con un mínimo de 45 días para los comentarios.

LAWA aceptará comentarios sobre la propuesta de restricción y análisis hasta las 5 pm del 17 de diciembre de 2012. Los comentarios escritos deben entregarse a la dirección indicada en el punto 9.

8. Información sobre cómo solicitar una copia del texto completo de la restricción, incluyendo las sanciones por incumplimiento, y el análisis (si no está incluido en este aviso).

El texto completo de la restricción, incluyendo las excepciones y sanciones por incumplimiento se presenta en la Sección 3 del LAX 14 CFR Parte 161, el cual está disponible para inspección pública en los lugares indicados en el punto 6.

9. La dirección para entregar comentarios al operador del aeropuerto proponiendo la restricción, incluyendo la identificación de la persona de contacto.

Los comentarios pueden entregarse en línea en www.laxpart161.com/en/Comments.cfm o por escrito al siguiente contacto:

Mr. Scott Tatro
Los Angeles World Airports
1 World Way, P.O. Box 92216
Los Angeles, CA 90009-2216
Email: laxpart161@lawa.org

L111-4225333

Herald Publications
312 E. Imperial Ave.
El Segundo, CA 90245
(310) 322-1830 • Fax (310) 322-2787

PROOF OF PUBLICATION

(2015.5 C.C.P.)

STATE OF CALIFORNIA,
County of Los Angeles,

I am a citizen of the United States and a resident of the County aforesaid; I am over the age of eighteen years, and not a party to or interested in the above-entitled matter. I am the principal clerk of the printer of the **El Segundo Herald**, a newspaper of general circulation, printed and published **weekly** in the City of **El Segundo**, County of Los Angeles, and which newspaper has been adjudged a newspaper of general circulation by the Superior Court of the County of Los Angeles, State of California, under the date of **May 18, 1934,** Case Number **372819**; that the notice, of which the annexed is a printed copy (set in type not smaller than nonpareil), has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to-wit:

11/1/2012

All in the year

I certify (or declare) under penalty of perjury that the foregoing is true and correct.

Dated at **El Segundo**, California,

this **1** day of **November 2012**

.....
Signature

Code # H-23554

Los Angeles World Airports
NOTICE OF PROPOSED AIRPORT USE RESTRICTION:
"RUNWAY USE RESTRICTION"
at
Los Angeles International Airport, Los Angeles, California

Los Angeles World Airports (LAWA) hereby provides notice of its proposal to establish a runway use restriction at Los Angeles International Airport (LAX) that restricts easterly departures of all aircraft, with certain exemptions, between the hours of 12:00 midnight and 6:30 a.m. when LAX is in the "Over-Ocean" or "Westerly" operations mode.

Title 14 of the Code of Federal Regulations Part 161 (14 C.F.R. Part 161), "Notice and Approval of Airport Noise and Access Restrictions," defines analysis, notice, and approval requirements for airport operators proposing use restrictions that affect any aircraft shown to comply with 14 C.F.R. Part 36 Stage 3 requirements. LAWA has prepared a report titled "Los Angeles International Airport Part 161 Application for Approval of a Runway Use Restriction" that addresses the requirements in full.

This notification addresses Part 161.303(c) requirements for published and posted notices including the following information:

1. *The name of the airport and associated cities and states:*
Los Angeles International Airport, Los Angeles, California

2. *A clear, concise description of the proposed restriction (and any alternatives, in order of preference), including a statement that it will be a mandatory Stage 3 restriction, and where the complete text of the restriction, and any sanctions for noncompliance, are available for public inspection:*
The proposed restriction is a ban on all aircraft departures to the east, including but not limited to Stage 3 aircraft, with certain exemptions, from 12:00 midnight to 6:30 a.m. when the airport is in Over-Ocean or Westerly Operations. During these conditions, all aircraft will be permitted to depart to the west. Item 6 provides further details on public review opportunities.

3. *A brief discussion of the specific need for, and goal of, the restriction.*
To reduce the occurrence and frequency of nighttime awakenings for residents living near Los Angeles International Airport by eliminating non-conforming operations between midnight and 6:30 a.m. when the airport is in Over-Ocean Operations or Westerly Operations.

4. *Identification of the operators and the types of aircraft expected to be affected:*
Section 7 of the LAX 14 C.F.R. Part 161 application identifies the operators and types of aircraft affected. In summary, the restriction will affect any passenger, cargo, or general aviation aircraft, whose operators would, absent the restriction, seek between midnight and 6:30 a.m. to depart to the east when LAX is in Over-Ocean or Westerly Operations. Historical information indicates very few operations would be affected; in the 130-month period (nearly 11 years) from June 2000 through March 2010, 699 aircraft departures (or an average of 65/year) would have been affected if this rule had been in effect.

5. *The proposed effective date of the restriction, the proposed method of implementation (e.g., city ordinance, airport rule, lease or other document), and any proposed enforcement mechanism:*
The proposed effective date is estimated to be December 1, 2013. Implementation will be through a City of Los Angeles ordinance with enforcement similar to other airport restrictions.

6. *An analysis of the proposed restriction, in accordance with Section 161.305, or an announcement regarding where the analysis is available for public inspection:*
The Notice and Draft LAX Part 161 Study application and supporting materials will be available for public inspection beginning November 1, 2012 at the following locations:
On-line at www.laxpart161.com/
LAWA Environmental Services Division at LAX – 7301 World Way West, Room 312, Los Angeles, CA 90045, Monday through Friday, 7:30 AM to 4:00 PM
Inglewood Public Library – 101 W. Manchester Blvd., Inglewood, CA 90301
County of Los Angeles Public Library – 4359 Lennox Blvd., Lennox, CA 90304
Mark Ridley Thomas Constituent Services Center - 8475 S. Vermont Ave., Los Angeles, CA 90044
Westchester – Loyola Village Branch Library, 7114 W. Manchester Ave., Los Angeles, CA 90045
City Halls within the airport noise study area, which will receive an electronic copy on disk, include:

7. *An invitation to comment on the proposed restriction and analysis, with a minimum 45-day comment period:*
LAWA will accept comments on the proposed restriction and analysis until 5 p.m. on December 17, 2012. Written comments must be submitted to the addresses identified in item 9.

8. *Information on how to request a copy of the complete text of the restriction, including any sanctions for noncompliance, and the analysis (if not included with this notice):*
The complete text of the restriction, including any exemptions and sanctions for non-compliance is provided in Section 3 of the LAX 14 C.F.R. Part 161 Report, which will be available for public inspection beginning November 1, 2012 at locations identified in item 6.

9. *The address for submitting comments to the airport operator proposing the restriction, including identification of a contact person:*
Comments may be submitted online at www.laxpart161.com/en/Comments.cfm or in writing to the following contact:
Mr. Scott Tatro
Los Angeles World Airports
1 World Way, P.O. Box 92216
Los Angeles, CA 90009-2216
Email: laxpart161@lawa.org

- City of Bell
- City of Bellflower
- City of Bell Gardens
- City of Carson
- City of Commerce
- City of Compton
- City of Cudahy
- City of Culver City
- City of Downey
- City of El Segundo
- City of Gardena
- City of Hawthorne
- City of Hermosa Beach
- City of Huntington Park
- City of Inglewood
- City of Lakewood
- City of Lawndale
- City of Lomita
- City of Los Angeles, Office of Mayor
- City of Lynwood
- City of Manhattan Beach
- City of Maywood
- City of Montebello
- Palos Verdes Estates
- City of Paramount
- Rancho Palos Verdes
- City of Redondo Beach
- Rolling Hills Estates
- City of Rolling Hills
- City of Santa Monica
- City of Seal Beach
- Signal Hill
- City of South Gale
- City of Torrance
- City of Vernon

El Segundo Herald: 11/1/2012
H-23554

Daily Breeze
21250 HAWTHORNE BLVE, STE 170 * TORRANCE CALIFORNIA 90503-4077
Direct: (310) 543-6635 Fax: (310) 316-6827

PROOF OF PUBLICATION
(201 5.5 C.C.P.)

STATE OF CALIFORNIA

County of Los Angeles,

I am a citizen of the United States and a resident of the County aforesaid; I am over the age of eighteen years, and not a party to or interested in the above-entitled matter. I am the principal clerk of the printer of the **THE DAILY BREEZE**

a newspaper of general circulation, printed and published

in the City of **Torrance***
County of Los Angeles, and which newspaper has been adjudged a newspaper of general circulation by the Superior Court of County of Los Angeles, State of California, under the date of

June 10, 1974

Case Number **SWC7146**
that the notice, of which the annexed is a printed copy (set in type not smaller than nonpareil), has been published in each regular and entire issue of said newspaper and not in any supplement there of on the following dates, to-wit

November 1,

all in the year 2012

the foregoing is true and correct.
Dated at Torrance

California, this 1 November 2012

*The Daily Breeze circulation includes the following cities: Carson, Compton, Culver City, El Segundo, Gardena, Harbor City, Hawthorne, Hermosa Beach, Inglewood, Lawndale, Lomita, Long Beach, Manhattan Beach, Palos Verdes Peninsula, Palos Verdes, Rancho Palos Verdes, Rancho Palos Verdes Estates, Redondo Beach, San Pedro, Santa Monica, Torrance and Wilmington

DB 11-3
Los Angeles World Airports
NOTICE OF PROPOSED AIRPORT USE RESTRICTION: "RUNWAY USE RESTRICTION"
at
Los Angeles International Airport, Los Angeles, California

Los Angeles World Airports (LAWA) hereby provides notice of its proposal to establish a runway use restriction at Los Angeles International Airport (LAX) that restricts easterly departures of all aircraft, with certain exemptions, between the hours of 12:00 midnight and 6:30 a.m. when LAX is in the "Over-Ocean" or "Westerly" operations mode.

Title 14 of the Code of Federal Regulations Part 161 (14 C.F.R. Part 161), "Notice and Approval of Airport Noise and Access Restrictions," defines analysis, notice, and approval requirements for airport operators proposing use restrictions that affect any aircraft shown to comply with 14 C.F.R. Part 36 Stage 3 requirements. LAWA has prepared a report titled "Los Angeles International Airport Part 161 Application for Approval of a Runway Use Restriction" that addresses the requirements in full.

This notification addresses Part 161.303(c) requirements for published and posted notices including the following information:

1. The name of the airport and associated cities and states:
Los Angeles International Airport, Los Angeles, California

2. A clear, concise description of the proposed restriction (and any alternatives, in order of preference), including a statement that it will be a mandatory Stage 3 restriction, and where the complete text of the restriction, and any sanctions for noncompliance, are available for public inspection:

The proposed restriction is a ban on all aircraft departures to the east, including but not limited to Stage 3 aircraft, with certain exemptions, from 12:00 midnight to 6:30 a.m. when the airport is in Over-Ocean or Westerly Operations. During these conditions, all aircraft will be permitted to depart to the west. Item 6 provides further details on public review opportunities.

3. A brief discussion of the specific need for, and goal of, the restriction.

To reduce the occurrence and frequency of nighttime awakenings for residents living near Los Angeles International Airport by eliminating non-conforming operations between midnight and 6:30 a.m. when the airport is in Over-Ocean Operations or Westerly Operations.

4. Identification of the operators and the types of aircraft expected to be affected:

Section 7 of the LAX 14 C.F.R. Part 161 application identifies the operators and types of aircraft affected. In summary, the restriction will affect any passenger, cargo, or general aviation aircraft, whose operators would, absent the restriction, seek between midnight and 6:30 a.m. to depart to the east when LAX is in Over-Ocean or Westerly Operations. Historical information indicates very few operations would be affected; in the 130-month period (nearly 11 years) from June 2000 through March 2010, 699 aircraft departures (or an average of 65/year) would have been affected if this rule had been in effect.

5. The proposed effective date of the restriction, the proposed method of implementation (e.g., city ordinance, airport rule, lease or other document), and any proposed enforcement mechanism:

The proposed effective date is estimated to be December 1, 2013. Implementation will be through a City of Los Angeles ordinance, with enforcement similar to other airport restrictions.

6. An analysis of the proposed restriction, in accordance with Section 161.305, or an announcement regarding where the analysis is available for public inspection:

The Notice and Draft "LAX Part 161" Study application and supporting materials will be available for public inspection beginning November 1, 2012 at the following locations:

- On-line at www.laxpart161.com/
- LAWA Environmental Services Division at LAX, 7301 World Way West, Room 312, Los Angeles, CA 90045, Monday through Friday, 7:30 AM to 4:00 PM
- Inglewood Public Library - 101 W. Manchester Blvd., Inglewood, CA 90301
- County of Los Angeles Public Library - 4359 Lennox Blvd., Lennox, CA 90304
- Mark Ridley Thomas Constituent Services Center - 8475 S. Vermont Ave., Los Angeles, CA 90044
- Westchester - Loyola Village Branch Library, 7114 W. Manchester Ave., Los Angeles, CA 90045
- City Halls within the airport noise study area, which will receive an electronic copy on disk, include:

o City of Bell
o City of Bellflower
o City of Bell Gardens
o City of Carson
o City of Commerce
o City of Compton
o City of Cudahy
o City of Culver City
o City of Downey
o City of El Segundo
o City of Gardena
o City of Hawthorne
o City of Hermosa Beach
o City of Huntington Park
o City of Inglewood
o City of Lakewood

PROOF OF PUBLICATION
(2015.5 C.C.)

STATE OF CALIFORNIA
County of Los Angeles

I am a citizen of the United States and a resident of the County aforesaid; I am over the age of eighteen years, and not a party to or interested in the above-entitled matter.
I am the principal clerk of the printer of the California Crusader News
a newspaper of general circulation, printed and published Weekly in the County of Los Angeles and which newspaper has been so adjudged a newspaper of general circulation by the Superior Court of the County of Los Angeles, State of California, under the Case Number BS75313 date of September 30, 1998

That the notice, of which the annexed is a printed copy (set in type not smaller than nonpareil), has been published in each regular and entire issue of said newspaper and not in any supplement thereof following dates, to wit:

Date Pub: 11/1/12

I certify (or declare) under penalty of perjury that The foregoing is true and correct.
Dated at Hawthorne, California

This 1 **day of** November 2012

Signature
CALIFORNIA CRUSADER NEWS
11633 Hawthorne Blvd., Suite 211
Hawthorne, California 90250
Telephone (310) 673-5555 / (310) 679-2288
legal8

This space is for the county Clerk's Stamp

Los Angeles World Airports
NOTICE OF PROPOSED AIRPORT USE RESTRICTION:
"RUNWAY USE RESTRICTION"
at
Los Angeles International Airport, Los Angeles, California

Los Angeles World Airports (LAWA) hereby provides notice of its proposal to establish a runway use restriction at Los Angeles International Airport (LAX) that restricts easterly departures of all aircraft, with certain exemptions, between the hours of 12:00 midnight and 6:30 a.m. when LAX is in the "Over-Ocean" or "Westerly" operations mode.
Title 14 of the Code of Federal Regulations Part 161 (14 C.F.R. Part 161), "Notice and Approval of Airport Noise and Access Restrictions," defines analysis, notice, and approval requirements for airport operators proposing use restrictions that affect any aircraft shown to comply with 14 C.F.R. Part 36 Stage 3 requirements. LAWA has prepared a report titled "Los Angeles International Airport Part 161 Application for Approval of a Runway Use Restriction" that addresses the requirements in full.
This notification addresses Part 161.303(c) requirements for published and posted notices including the following information:
1. The name of the airport and associated cities and states:
Los Angeles International Airport, Los Angeles, California
2. A clear, concise description of the proposed restriction (and any alternatives, in order of preference), including a statement that it will be a mandatory Stage 3 restriction, and where the complete text of the restriction, and any sanctions for noncompliance, are available for public inspection:
The proposed restriction is a ban on all aircraft departures to the east, including but not limited to Stage 3 aircraft, with certain exemptions, from 12:00 midnight to 6:30 a.m. when the airport is in Over-Ocean or Westerly Operations. During these conditions, all aircraft will be permitted to depart to the west. Item 6 provides further details on public review opportunities.
3. A brief discussion of the specific need for, and goal of, the restriction.
To reduce the occurrence and frequency of nighttime awakenings for residents living near Los Angeles International Airport by eliminating non-conforming operations between midnight and 6:30 a.m. when the airport is in Over-Ocean Operations or Westerly Operations.
4. Identification of the operators and the types of aircraft expected to be affected:
Section 7 of the LAX 14 C.F.R. Part 161 application identifies the operators and types of aircraft affected. In summary, the restriction will affect any passenger, cargo, or general aviation aircraft, whose operators would, absent the restriction, seek between midnight and 6:30 a.m. to depart to the east when LAX is in Over-Ocean or Westerly Operations. Historical information indicates very few operations would be affected; in the 130-month period (nearly 11 years) from June 2000 through March 2010, 699 aircraft departures (or an average of 65/year) would have been affected if this rule had been in effect.
5. The proposed effective date of the restriction, the proposed method of implementation (e.g., city ordinance, airport rule, lease or other document), and any proposed enforcement mechanism:
The proposed effective date is estimated to be December 1, 2013. Implementation will be through a City of Los Angeles ordinance with enforcement similar to other airport restrictions.
6. An analysis of the proposed restriction, in accordance with Section 161.305, or an announcement regarding where the analysis is available for public inspection:
The Notice and Draft LAX Part 161 Study application and supporting materials will be available for public inspection beginning November 1, 2012 at the following locations:
- On-line at www.laxpart161.com/
- LAWA Environmental Services Division at LAX – 7301 World Way West, Room 312, Los Angeles, CA 90045, Monday through Friday, 7:30 AM to 4:00 PM
- Inglewood Public Library – 101 W. Manchester Blvd., Inglewood, CA 90301
- County of Los Angeles Public Library – 4359 Lennox Blvd., Lennox, CA 90304
- Mark Ridley Thomas Constituent Services Center - 8475 S. Vermont Ave., Los Angeles, CA 90044
- Westchester – Loyola Village Branch Library, 7114 W. Manchester Ave., Los Angeles, CA 90045
- City Halls within the airport noise study area, which will receive an electronic copy on disk, include:

- City of Bell
- City of Bellflower
- City of Bell Gardens
- City of Carson
- City of Commerce
- City of Compton
- City of Cudahy
- City of Culver City
- City of Downey
- City of El Segundo
- City of Gardena
- City of Hawthorne
- City of Hermosa Beach
- City of Huntington Park
- City of Inglewood
- City of Lakewood
- City of Lawndale
- City of Lomita
- City of Los Angeles, Office of Mayor
- City of Lynwood
- City of Manhattan Beach
- City of Maywood
- City of Montebello
- Palos Verdes Estates
- City of Paramount
- Rancho Palos Verdes
- City of Redondo Beach
- Rolling Hills Estates
- City of Rolling Hills
- City of Santa Monica
- City of Seal Beach
- Signal Hill
- City of South Gate
- City of Torrance
- City of Vernon

7. An invitation to comment on the proposed restriction and analysis, with a minimum 45-day comment period:
LAWA will accept comments on the proposed restriction and analysis until 5 p.m. on December 17, 2012. Written comments must be submitted to the addresses identified in item 9.
8. Information on how to request a copy of the complete text of the restriction, including any sanctions for noncompliance, and the analysis (if not included with this notice):
The complete text of the restriction, including any exemptions and sanctions for non-compliance is provided in Section 3 of the LAX 14 C.F.R. Part 161 Report, which will be available for public inspection beginning November 1, 2012 at locations identified in item 6.
9. The address for submitting comments to the airport operator proposing the restriction, including identification of a contact person:
Comments may be submitted online at www.laxpart161.com/en/Comments.cfm or in writing to the following contact:

Mr. Scott Tatro
Los Angeles World Airports
1 World Way, P.O. Box 92216
Los Angeles, CA 90009-2216
Email: laxpart161@lawa.org

PUB: 11/1/2012
LAX NOTICE-1
CCN

Palos Verdes Peninsula News
21250 Hawthorne Blvd. Ste 170, Torrance, CA 90503

PROOF OF PUBLICATION
(201 5.5 C.C.P.)

STATE OF CALIFORNIA

County of Los Angeles,

I am a citizen of the United States and a resident of the County aforesaid; I am over the age of eighteen years, and not a party to or interested in the above-entitled matter. I am the chief legal advertising clerk of the publisher of the

PALOS VERDES PENINSULA NEWS

a newspaper of general circulation, printed and published **weekly** in the City of **Rolling Hills** Estate County of Los Angeles, and which newspaper has been adjudged a newspaper of general circulation by the Superior Court of County of Los Angeles, State of California, under the date of **February 15, 1977** Case Number **C824957**, that the notice of which the annexed is a printed copy, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to wit:

November 1,

all in the year 2012

I certify (or declare) under penalty of perjury that the foregoing is true and correct.

Dated at **Rolling Hills Estates,** California

this 01, of November

Signature

P.V.P. News No. 10746

Los Angeles World Airports
NOTICE OF PROPOSED AIRPORT USE RESTRICTION:
"RUNWAY USE RESTRICTION"
at
Los Angeles International Airport, Los Angeles, California

This Los Angeles World Airports (LAWA) hereby provides notice of its proposal to establish a runway use restriction at Los Angeles International Airport (LAX) that restricts easterly departures of all aircraft, with certain exemptions, between the hours of 12:00 midnight and 6:30 a.m. when LAX is in the "Over-Ocean" or "Westerly" operations mode.
Title 14 of the Code of Federal Regulations Part 161 (14 C.F.R. Part 161), "Notice and Approval of Airport Noise and Access Restrictions," defines analysis, notice, and approval requirements for airport operators proposing use restrictions that affect any aircraft shown to comply with 14 C.F.R. Part 36 Stage 3 requirements. LAWA has prepared a report titled "Los Angeles International Airport Part 161 Application for Approval of a Runway Use Restriction" that addresses the requirements in full.
This notification addresses Part 161.303(c) requirements for published and posted notices including the following information:
1. *The name of the airport and associated cities and states:*
Los Angeles International Airport, Los Angeles, California
2. *A clear, concise description of the proposed restriction (and any alternatives, in order of preference), including a statement that it will be a mandatory Stage 3 restriction, and where the complete text of the restriction, and any sanctions for noncompliance, are available for public inspection:*
The proposed restriction is a ban on all aircraft departures to the east, including but not limited to Stage 3 aircraft, with certain exemptions, from 12:00 midnight to 6:30 a.m. when the airport is in Over-Ocean or Westerly Operations. During these conditions, all aircraft will be permitted to depart to the west. Item 6 provides further details on public review opportunities.
3. *A brief discussion of the specific need for, and goal of, the restriction:*
To reduce the occurrence and frequency of nighttime awakenings for residents living near Los Angeles International Airport by eliminating non-contingency operations between midnight and 6:30 a.m. when the airport is in Over-Ocean Operations or Westerly Operations.
4. *Identification of the operators and the types of aircraft expected to be affected:*
Section 7 of the LAX 14 C.F.R. Part 161 application identifies

Public Notice Public Notice

the operators and types of aircraft affected. In summary, the restriction will affect any passenger, cargo, or general aviation aircraft, whose operations would, absent the restriction, seek between midnight and 6:30 a.m. to depart to the east when LAX is in Over-Ocean or Westerly Operations. Historical information indicates very few operations would be affected; in the 130-month period (nearly 11 years) from June 2000 through March 2010, 699 aircraft departures (or an average of 65/year) would have been affected if this rule had been in effect.
5. *The proposed effective date of the restriction, the proposed method of implementation (e.g., city ordinance, airport rule, lease or other document), and any proposed enforcement mechanism:*
The proposed effective date is estimated to be December 1, 2013. Implementation will be through a City of Los Angeles ordinance with enforcement similar to other airport restrictions.
6. *An analysis of the proposed restriction, in accordance with Section 161.305, or an announcement regarding where the analysis is available for public inspection:*
The Notice and Draft LAX Part 161 Study application and supporting materials will be available for public inspection beginning November 1, 2012 at the following locations:

- Online at www.lawpart161.com/
- LAWA Environmental Services Division at LAX – 7301 World Way West, Room 312, Los Angeles, CA 90045, Monday through Friday, 7:30 AM to 4:00 PM
- Inglewood Public Library – 101 W. Manchester Blvd., Inglewood, CA 90301
- County of Los Angeles Public Library – 4359 Lennox Blvd., Lennox, CA 90304
- Mark Ridley Thomas Constituent Services Center - 8475 S. Vermont Ave., Los Angeles, CA 90044
- Westchester – Loyola Village Branch Library, 7114 W. Manchester Ave., Los Angeles, CA 90045
- City Halls within the airport noise study area, which will receive an electronic copy on disk, include:
  - City of Bell
  - City of Bellflower
  - City of Bell Gardens
  - City of Carson
  - City of Commerce
  - City of Compton
  - City of Cudahy
  - City of Culver City
  - City of Downey
  - City of El Segundo
  - City of Gardena
  - City of Hawthorne
  - City of Hermosa Beach
  - City of Huntington Park
  - City of Inglewood
  - City of Lakewood
  - City of Lawndale
  - City of Lomita
  - City of Los Angeles, Office of Mayor
  - City of Lynwood
  - City of Manhattan Beach
  - City of Maywood
  - City of Montebello
  - Palos Verdes Estates
  - City of Paramount
  - Rancho Palos Verdes
  - City of Redondo Beach
  - Rolling Hills Estates
  - City of Rolling Hills
  - City of Santa Monica
  - City of Seal Beach
  - Signal Hill
  - City of South Gate
  - City of Torrance
  - City of Vernon

7. *An invitation to comment on the proposed restriction and analysis, with a minimum 45-day comment period:*
LAWA will accept comments on the proposed restriction and analysis until 5 p.m. on December 17, 2012. Written comments must be submitted to the addresses identified in Item 9.
8. *Information on how to request a copy of the complete text of the restriction, including any sanctions for noncompliance, and the analysis (if not included with this notice):*
The complete text of the restriction, including any exemptions and sanctions for non-compliance is provided in Section 3 of the LAX 14 C.F.R. Part 161 Report, which will be available for public inspection beginning November 1, 2012 at locations identified in Item 6.
9. *The address for submitting comments to the airport operator proposing the restriction, including identification of a contact person:*
Comments may be submitted online at www.lawpart161.com/pc/Comments.cfm or in writing to the following contact:
Mr. Scott Tatro
Los Angeles World Airports
1 World Way, P.O. Box 92216
Los Angeles, CA 90009-2216
Email: lawpart161@lawa.org

Published in Palos Verdes Peninsula News on Nov 1, 2012

New Charter School Wins Appeal to Remain in Inglewood

(Continued from page 8)

ditional IUSD students choose to attend ECMS-1. The amount represents a loss of $5,214 ADA per student."

school will be next fall.

Insulate Now or Die Trying

(Continued from page 9)

"I think it's a poor idea. There's enough stores where people can get liquor. We don't need any more liquor establishments in this city," a woman said. One man wants alco-

Los Angeles World Airports

NOTICE OF PROPOSED AIRPORT USE RESTRICTION: "RUNWAY USE RESTRICTION" at Los Angeles International Airport, Los Angeles, California

Los Angeles World Airports (LAWA) hereby provides notice of its proposal to establish a runway use restriction at Los Angeles International Airport (LAX) that restricts easterly departures of all aircraft, with certain exemptions, between the hours of 12:00 midnight and 6:30 a.m. when LAX is in the "Over-Ocean" or "Westerly" operations mode.

Title 14 of the Code of Federal Regulations Part 161 (14 C.F.R. Part 161), "Notice and Approval of Airport Noise and Access Restrictions," defines analysis, notice, and approval requirements for airport operators proposing use restrictions that affect any aircraft shown to comply with 14 C.F.R. Part 36 Stage 3 requirements. LAWA has prepared a report titled "Los Angeles International Airport Part 161 Application for Approval of a Runway Use Restriction" that addresses the requirements in full.

This notification addresses Part 161.303(c) requirements for published and posted notices including the following information:

1. *The name of the airport and associated cities and states:*

Los Angeles International Airport, Los Angeles, California

2. *A clear, concise description of the proposed restriction (and any alternatives, in order of preference), including a statement that it will be a mandatory Stage 3 restriction, and where the complete text of the restriction, and any sanctions for noncompliance, are available for public inspection:*

The proposed restriction is a ban on all aircraft departures to the east, including but not limited to Stage 3 aircraft, with certain exemptions, from 12:00 midnight to 6:30 a.m. when the airport is in Over-Ocean or Westerly Operations. During these conditions, all aircraft will be permitted to depart to the west. Item 6 provides further details on public review opportunities.

3. *A brief discussion of the specific need for, and goal of, the restriction.*

To reduce the occurrence and frequency of nighttime awakenings for residents living near Los Angeles International Airport by eliminating non-conforming operations between midnight and 6:30 a.m. when the airport is in Over-Ocean Operations or Westerly Operations.

4. *Identification of the operators and the types of aircraft expected to be affected:*

Section 7 of the LAX 14 C.F.R. Part 161 application identifies the operators and types of aircraft affected. In summary, the restriction will affect any passenger, cargo, or general aviation aircraft, whose operators would, absent the restriction, seek between midnight and 6:30 a.m. to depart to the east when LAX is in Over-Ocean or Westerly Operations. Historical information indicates very few operations would be affected; in the 130-month period (nearly 11 years) from June 2000 through March 2010, 699 aircraft departures (or an average of 65/year) would have been affected if this rule had been in effect.

5. *The proposed effective date of the restriction, the proposed method of implementation (e.g., city ordinance, airport rule, lease or other document), and any proposed enforcement mechanism:*

The proposed effective date is estimated to be December 1, 2013. Implementation will be through a City of Los Angeles ordinance with enforcement similar to other airport restrictions.

6. *An analysis of the proposed restriction, in accordance with Section 161.305, or an announcement regarding where the analysis is available for public inspection:*

The Notice and Draft LAX Part 161 Study application and supporting materials will be available for public inspection beginning November 1, 2012 at the following locations:

- On-line at www.laxpart161.com/
- LAWA Environmental Services Division at LAX – 7301 World Way West, Room 312, Los Angeles, CA 90045, Monday through Friday, 7:30 AM to 4:00 PM
- Inglewood Public Library – 101 W. Manchester Blvd., Inglewood, CA 90301
- County of Los Angeles Public Library – 4359 Lennox Blvd., Lennox, CA 90304
- Mark Ridley Thomas Constituent Services Center - 8475 S. Vermont Ave., Los Angeles, CA 90044
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  - City of Downey
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  - City of Gardena
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  - City of Hermosa Beach
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  - City of Inglewood
  - City of Lakewood
  - City of Lawndale
  - City of Lomita
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  - City of Manhattan Beach
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  - City of Montebello
  - Palos Verdes Estates
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  - Rancho Palos Verdes
  - City of Redondo Beach
  - Rolling Hills Estates
  - City of Rolling Hills
  - City of Santa Monica
  - City of Seal Beach
  - Signal Hill
  - City of South Gale
  - City of Torrance
  - City of Vernon

7. *An invitation to comment on the proposed restriction and analysis, with a minimum 45-day comment period:*

LAWA will accept comments on the proposed restriction and analysis until 5 p.m. on December 17, 2012. Written comments must be submitted to the addresses identified in item 9.

8. *Information on how to request a copy of the complete text of the restriction, including any sanctions for noncompliance, and the analysis (if not included with this notice):*

The complete text of the restriction, including any exemptions and sanctions for noncompliance is provided in Section 3 of the LAX 14 C.F.R. Part 161 Report, which will be available for public inspection beginning November 1, 2012 at locations identified in item 6.

9. *The address for submitting comments to the airport operator proposing the restriction, including identification of a contact person:*

Comments may be submitted online at www.laxpart161.com/en/Comments.cfm or in writing to the following contact:

Mr. Scott Tatro
Los Angeles World Airports
1 World Way, P.O. Box 92216
Los Angeles, CA 90009-2216
Email: laxpart161@lawa.org

Culver City News
www.culvercitynews.org
18 • November 1, 2012

Public Notices

LIC NOTICES
NUED FROM PAGE 17

ashier's checks drawn tate or national bank, a drawn by a state or fed- redit union, or a check by a state or federal s and loan association, s association, or savings pecified in Section 5102 Financial Code and au- ed to do business in this Said sale will be made, "AS IS" condition, but t covenant or warranty, s or implied, regarding possession or encum- s, to satisfy the indebt- s secured by said Deed st, advances thereunder, nterest as provided, and npaid principal of the ecured by said Deed of with interest thereon as led in said Note, plus harges and expenses of rustee and of the trusts d by said Deed of Trust. uired by the provisions tion 2923.5 of the Cali- Civil Code, the declara- tom the mortgagee, ben- y or authorized agent ached to the Notice of e's Sale duly recorded the appropriate County der's Office. NOTICE OTENTIAL BIDDERS u are considering bid- n this property lien, you d understand that there sks involved in bidding rustee auction. You will dding on a lien, not on perty itself. Placing the st bid at a trustee auction not automatically entitle to free and clear own- p of the property. You d also be aware that the being auctioned off may junior lien. If you are the st bidder at the auction, re or may be responsible aying off all liens senior l lien being auctioned off, e you can receive clear to the property. You are uraged to investigate the ence, priority, and size utstanding liens that may on this property by con- the county recorder's or a title insurance ny, either of which may you a fee for this infor- . If you consult either e resources, you should re that the lender may ore than one mortgage d of trust on the proper- TICE TO PROPERTY ER The sale date shown notice of sale may be ed one or more times mortgagee, beneficiary, or a court, pursuant to 2924g of the Califor- vil Code. The law re- that information about sale postponements le available to you and ublic, as a courtesy to ot present at the sale. If sh to learn whether your te has been postponed, applicable, the resched- ne and date for the sale property, you may call 81-8219 or visit this Web site www.re- tco.com, using the file assigned to this case 11-0036154. Infor- about postponements very short in duration occur close in time to eduled sale may not ately be reflected in phone information or on the Internet Web site. The best way to verify postponement information is to attend the scheduled sale. RECONTRUST COMPANY, N.A. 1800 Tapo Canyon Rd., CA6-914-01-94 SIMI VALLEY, CA 93063 Phone: (800) 281 8219, Sale Information (626) 927-4399 By: Trustee's Sale Officer RECONTRUST COMPANY, N.A. is a debt collector attempting to collect a debt. Any information obtained will be used for that purpose. A-FN4319839 11/01/2012, 11/08/2012, 11/15/2012

NOTICE OF TRUSTEE'S SALE TS No. 12-0024837 Doc ID #00011121793720O5N Title Order No. 12-0041378 Investor/Insurer No. 110946734 APN No. 4203-026-130 YOU ARE IN DEFAULT UNDER A DEED OF TRUST, DATED 08/16/2005. UNLESS YOU TAKE ACTION TO PROTECT YOUR PROPERTY, IT MAY BE SOLD AT A PUBLIC SALE. IF YOU NEED AN EXPLANATION OF THE NATURE OF THE PROCEEDING AGAINST YOU, YOU SHOULD CONTACT A LAWYER. Notice is hereby given that RECONTRUST COMPANY, N.A., as duly appointed trustee pursuant to the Deed of Trust executed by CHERYL A LANG, AN UNMARRIED WOMAN, dated 08/16/2005 and recorded 8/25/2005, as Instrument No. 05 2042638, in Book , Page , of Official Records in the office of the County Recorder of Los Angeles County, State of California, will sell on 11/26/2012 at 11:00AM, By the fountain located at 400 Civic Center Plaza, Pomona, CA 91766 at public auction, to the highest bidder for cash or check as described below, payable in full at time of sale, all right, title, and interest conveyed to and now held by it under said Deed of Trust, in the property situated in said County and State and as more fully described in the above referenced Deed of Trust. The street address and other common designation, if any, of the real property described above is purported to be: 7317 HANNUM AVENUE #93, CULVER CITY, CA, 90230. The undersigned Trustee disclaims any liability for any incorrectness of the street address and other common designation, if any, shown herein. The total amount of the unpaid balance with interest thereon of the obligation secured by the property to be sold plus reasonable estimated costs, expenses and advances at the time of the initial publication of the Notice of Sale is $667,480.01. It is possible that at the time of sale the opening bid may be less than the total indebtedness due. In addition to cash, the Trustee will accept cashier's checks drawn on a state or national bank, a check drawn by a state or federal credit union, or a check drawn by a state or federal savings and loan association, savings association, or savings bank specified in Section 5102 of the Financial Code and authorized to do business in this state. Said sale will be made, in an "AS IS" condition, but without covenant or warranty, express or implied, regarding title, possession or encumbrances, to satisfy the indebtedness secured by said Deed of Trust, advances thereunder, with interest as provided, and the unpaid principal of the Note secured by said Deed of Trust with interest thereon as provided in said Note, plus fees, charges and expenses of the Trustee and of the trusts created by said Deed of Trust. If required by the provisions of section 2923.5 of the California Civil Code, the declaration from the mortgagee, beneficiary or authorized agent is attached to the duly recorded with the appropriate County Recorder's Office. NOTICE TO POTENTIAL BIDDERS If you are considering bidding on this property lien, you should understand that there are risks involved in bidding at a trustee auction. You will be bidding on a lien, not on a property itself. Placing the highest bid at a trustee auction does not automatically entitle you to free and clear ownership of the property. You should also be aware that the lien being auctioned off may be a junior lien. If you are the highest bidder at the auction, you are or may be responsible for paying off all liens senior to the lien being auctioned off, before you can receive clear title to the property. You are encouraged to investigate the existence, priority, and size of outstanding liens that may exist on this property by contacting the county recorder's office or a title insurance company, either of which may charge you a fee for this information. If you consult either of these resources, you should be aware that the lender may hold more than one mortgage or deed of trust on the property. NOTICE TO PROPERTY OWNER The sale date shown on this notice of sale may be postponed one or more times by the mortgagee, beneficiary, trustee, or a court, pursuant to Section 2924g of the California Civil Code. The law requires that information about trustee sale postponements be made available to you and to the public, as a courtesy to those not present at the sale. If you wish to learn whether your sale date has been postponed, and, if applicable, the rescheduled time and date for the sale of this property, you may call 1-800-281-8219 or visit this Internet Web site www.recontrustco.com, using the file number assigned to this case NOTICE OF TRUSTEE'S SALE TS No. 12-0024837. Information about postponements that are very short in duration or that occur close in time to the scheduled sale may not immediately be reflected in the telephone information or on the Internet Web site. The best way to verify postponement information is to attend the scheduled sale. RECONTRUST COMPANY, N.A. 1800 Tapo Canyon Rd., CA6-914-01-94 SIMI VALLEY, CA 93063 Phone: (800) 281 8219, Sale Information (626) 927-4399 By: Trustee's Sale Officer RECONTRUST COMPANY, N.A. is a debt collector attempting to collect a debt. Any information obtained will be used for that purpose. A-4320245 11/01/2012, 11/08/2012, 11/15/2012

See PUBLIC NOTICES Page 19

CITY OF CULVER CITY
NOTICE INVITING
SEALED BIDS
FOR
KERR WAY SEWER
PROJECT, P-230
BID NO. 1509

1. ANNOUNCEMENT
Notice is hereby given that sealed bids will be accepted by the City of Culver City, California, for furnishing all labor, services, materials, and equip-

Los Angeles World Airports
NOTICE OF PROPOSED AIRPORT USE RESTRICTION:
"RUNWAY USE RESTRICTION"
at
Los Angeles International Airport, Los Angeles, California

Los Angeles World Airports (LAWA) hereby provides notice of its proposal to establish a runway use restriction at Los Angeles International Airport (LAX) that restricts easterly departures of all aircraft, with certain exemptions, between the hours of 12:00 midnight and 6:30 a.m. when LAX is in the "Over-Ocean" or "Westerly" operations mode.

Title 14 of the Code of Federal Regulations Part 161 (14 C.F.R. Part 161), "Notice and Approval of Airport Noise and Access Restrictions," defines analysis, notice, and approval requirements for airport operators proposing use restrictions that affect any aircraft shown to comply with 14 C.F.R. Part 36, Stage 3 requirements. LAWA has prepared a report titled "Los Angeles International Airport Part 161 Application for Approval of a Runway Use Restriction" that addresses the requirements in full.

This notification addresses Part 161.303(c) requirements for published and posted notices including the following information:

1. The name of the airport and associated cities and states:
Los Angeles International Airport, Los Angeles, California.

2. A clear, concise description of the proposed restriction (and any alternatives, in order of preference), including a statement that it will be a mandatory Stage 3 restriction, and where the complete text of the restriction, and any sanctions for noncompliance, are available for public inspection:
The proposed restriction is a ban on all aircraft departures to the east, including but not limited to Stage 3 aircraft, with certain exemptions, from 12:00 midnight to 6:30 a.m. when the airport is in Over-Ocean or Westerly Operations. During these conditions, all aircraft will be permitted to depart to the west. Item 6 provides further details on public review opportunities.

3. A brief discussion of the specific need for, and goal of, the restriction.
To reduce the occurrence and frequency of nighttime awakenings for residents living near Los Angeles International Airport by eliminating non-conforming operations between midnight and 6:30 a.m. when the airport is in Over-Ocean Operations or Westerly Operations.

4. Identification of the operators and the types of aircraft expected to be affected:
Section 7 of the LAX 14 C.F.R. Part 161 application identifies the operators and types of aircraft affected. In summary, the restriction will affect any passenger, cargo, or general aviation aircraft, whose operators would, absent the restriction, seek between midnight and 6:30 a.m. to depart to the east when LAX is in Over-Ocean or Westerly Operations. Historical information indicates very few operations would be affected; in the 130-month period (nearly 11 years) from June 2000 through March 2010, 699 aircraft departures (or an average of 65/year) would have been affected if this rule had been in effect.

5. The proposed effective date of the restriction, the proposed method of implementation (e.g., city ordinance, airport rule, lease or other document), and any proposed enforcement mechanism:
The proposed effective date is estimated to be December 1, 2013. Implementation will be through a City of Los Angeles ordinance with enforcement similar to other airport restrictions.

6. An analysis of the proposed restriction, in accordance with Section 161.305, or an announcement regarding where the analysis is available for public inspection:
The Notice and Draft LAX Part 161 Study application and supporting materials will be available for public inspection beginning November 1, 2012 at the following locations:

- On-line at www.laxpart161.com/
- LAWA Environmental Services Division at LAX – 7301 World Way West, Room 312, Los Angeles, CA 90045, Monday through Friday, 7:30 AM to 4:00 PM
- Inglewood Public Library – 101-W. Manchester Blvd., Inglewood, CA 90301
- County of Los Angeles Public Library – 4359 Lennox Blvd., Lennox, CA 90304
- Mark Ridley Thomas Constituent Services Center - 8475 S. Vermont Ave., Los Angeles, CA 90044
- Westchester – Loyola Village Branch Library, 7114 W. Manchester Ave., Los Angeles, CA 90045
- City Halls within the airport noise study area, which will receive an electronic copy on disk, including:

o City of Bell	o City of Los Angeles, Office of Mayor
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o City of Hermosa Beach	o City of Seal Beach
o City of Huntington Park	o Signal Hill
o City of Inglewood	o City of South Gate
o City of Lakewood	o City of Torrance
o City of Lawndale	o City of Vernon
o City of Lomita	

7. An invitation to comment on the proposed restriction and analysis, with a minimum 45-day comment period:
LAWA will accept comments on the proposed restriction and analysis until 5 p.m. on December 17, 2012. Written comments must be submitted to the addresses identified in item 9.

8. Information on how to request a copy of the complete text of the restriction, including any sanctions for noncompliance, and the analysis (if not included with this notice):
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9. The address for submitting comments to the airport operator proposing the restriction, including identification of a contact person:
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Mr. Scott Tatro
Los Angeles World Airports
1 World Way, P.O. Box 92216
Los Angeles, CA 90009-2216
Email: laxpart161@lawa.org

Los Angeles World Airports
NOTICE OF PROPOSED AIRPORT USE RESTRICTION:
"RUNWAY USE RESTRICTION"
at
Los Angeles International Airport, Los Angeles, California

Los Angeles World Airports (LAWA) hereby provides notice of its proposal to establish a runway use restriction at Los Angeles International Airport (LAX) that restricts easterly departures of all aircraft, with certain exemptions, between the hours of 12:00 midnight and 6:30 a.m. when LAX is in the "Over-Ocean" or "Westerly" operations mode.
Title 14 of the Code of Federal Regulations Part 161 (14 C.F.R. Part 161), "Notice and Approval of Airport Noise and Access Restrictions," defines analysis, notice, and approval requirements for airport operators proposing use restrictions that affect any aircraft shown to comply with 14 C.F.R. Part 36 Stage 3 requirements. LAWA has prepared a report titled "Los Angeles International Airport Part 161 Application for Approval of a Runway Use Restriction" that addresses the requirements in full.
This notification addresses Part 161.303(c) requirements for published and posted notices including the following information:

1. The name of the airport and associated cities and states:

Los Angeles International Airport, Los Angeles, California

2. A clear, concise description of the proposed restriction (and any alternatives, in order of preference), including a statement that it will be a mandatory Stage 3 restriction, and where the complete text of the restriction, and any sanctions for noncompliance, are available for public inspection:
The proposed restriction is a ban on all aircraft departures to the east, including but not limited to Stage 3 aircraft, with certain exemptions, from 12:00 midnight to 6:30 a.m. when the airport is in Over-Ocean or Westerly Operations. During these conditions, all aircraft will be permitted to depart to the west. Item 6 provides further details on public review opportunities.

3. A brief discussion of the specific need for, and goal of, the restriction.
To reduce the occurrence and frequency of nighttime awakenings for residents living near Los Angeles International Airport by eliminating non-conforming operations between midnight and 6:30 a.m. when the airport is in Over-Ocean Operations or Westerly Operations.

4. Identification of the operators and the types of aircraft expected to be affected:
Section 7 of the LAX 14 C.F.R. Part 161 application identifies the operators and types of aircraft affected. In summary, the restriction will affect any passenger, cargo, or general aviation aircraft, whose operators would, absent the restriction, seek between midnight and 6:30 a.m. to depart to the east when LAX is in Over-Ocean or Westerly Operations. Historical information indicates very few operations would be affected; in the 130-month period (nearly 11 years) from June 2000 through March 2010, 699 aircraft departures (or an average of 65/year) would have been affected if this rule had been in effect.

5. The proposed effective date of the restriction, the proposed method of implementation (e.g., city ordinance, airport rule, lease or other document), and any proposed enforcement mechanism:
The proposed effective date is estimated to be December 1, 2013. Implementation will be through a City of Los Angeles ordinance with enforcement similar to other airport restrictions.

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7. An invitation to comment on the proposed restriction and analysis, with a minimum 45-day comment period:
LAWA will accept comments on the proposed restriction and analysis until 5 p.m. on December 17, 2012. Written comments must be submitted to the addresses identified in item 9.

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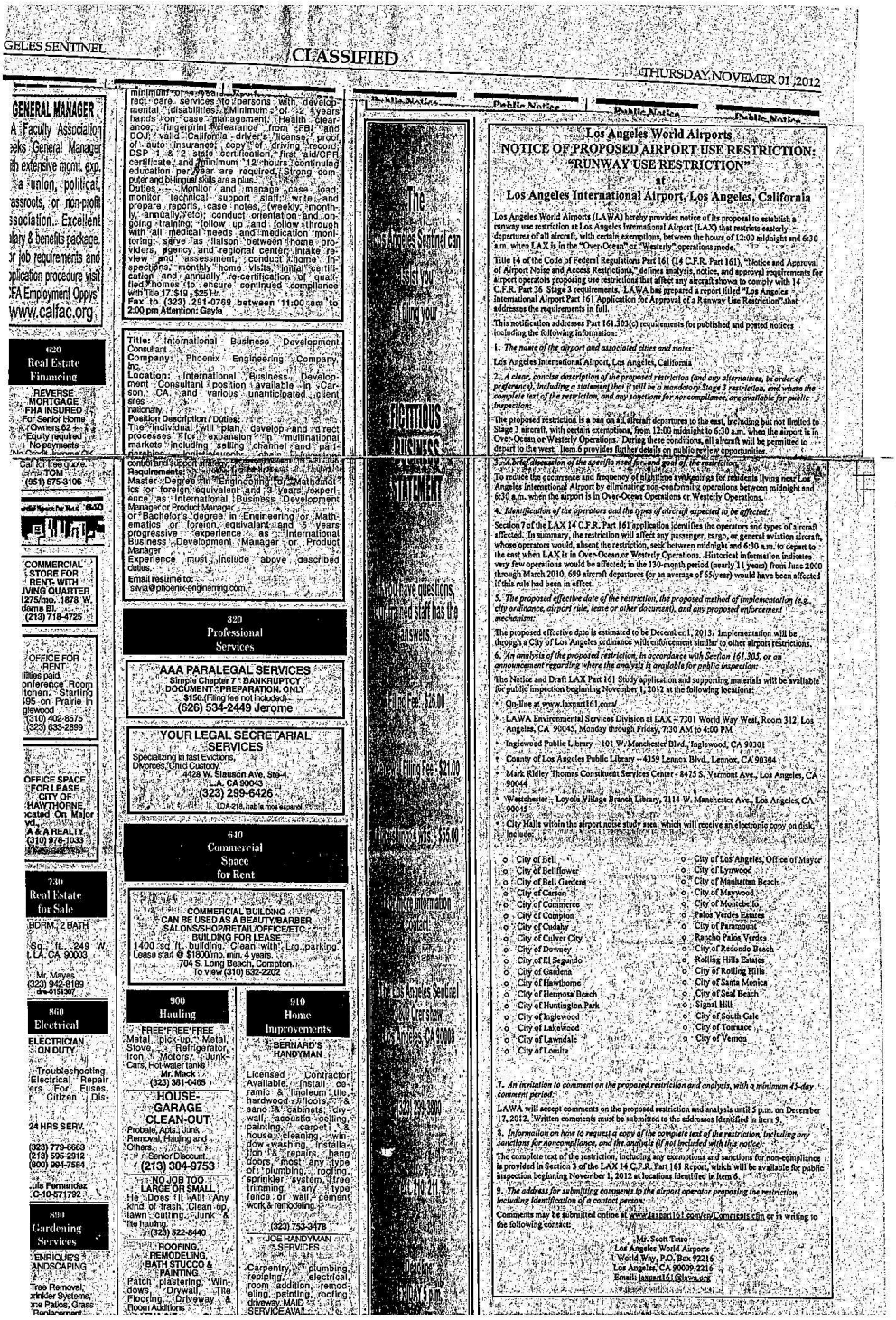
Los Angeles World Airports
1 World Way, P.O. Box 92216
Los Angeles, CA 90009-2216



GELES SENTINEL CLASSIFIED THURSDAY, NOVEMBER 01, 2012

Public Notice Public Notice Public Notice Public Notice

Los Angeles World Airports

NOTICE OF PROPOSED AIRPORT USE RESTRICTION: "RUNWAY USE RESTRICTION"

at

Los Angeles International Airport, Los Angeles, California

Los Angeles World Airports (LAWA) hereby provides notice of its proposal to establish a runway use restriction at Los Angeles International Airport (LAX) that restricts easterly departures of all aircraft, with certain exemptions, between the hours of 12:00 midnight and 6:30 a.m. when LAX is in the "Over-Ocean" or "Westerly" operations mode.

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To reduce the occurrence and frequency of nighttime awakenings for residents living near Los Angeles International Airport by eliminating non-conforming operations between midnight and 6:30 a.m. when the airport is in Over-Ocean Operations or Westerly Operations.

4. *Identification of the operators and the types of aircraft expected to be affected:*

Section 7 of the LAX 14 C.F.R. Part 161 application identifies the operators and types of aircraft affected. In summary, the restriction will affect any passenger, cargo, or general aviation aircraft, whose operators would, absent the restriction, seek between midnight and 6:30 a.m. to depart to the east when LAX is in Over-Ocean or Westerly Operations. Historical information indicates very few operations would be affected; in the 130-month period (nearly 11 years) from June 2000 through March 2010, 699 aircraft departures for an average of 65/year) would have been affected if this rule had been in effect.

5. *The proposed effective date of the restriction, the proposed method of implementation (e.g., city ordinance, airport rule, lease or other document), and any proposed enforcement mechanism:*

The proposed effective date is estimated to be December 1, 2013. Implementation will be through a City of Los Angeles ordinance with enforcement similar to other airport restrictions.

6. *An analysis of the proposed restriction, in accordance with Section 161.305, or an announcement regarding where the analysis is available for public inspection:*

The Notice and Draft LAX Part 161 Study application and supporting materials will be available for public inspection beginning November 1, 2012 at the following locations:

- On-line at www.laxpart161.com/
- LAWA Environmental Services Division at LAX – 7301 World Way West, Room 312, Los Angeles, CA 90045, Monday through Friday, 7:30 AM to 4:00 PM
- Inglewood Public Library – 101 W. Manchester Blvd., Inglewood, CA 90301
- County of Los Angeles Public Library – 4359 Lennox Blvd., Lennox, CA 90304
- Mark Ridley Thomas Constituent Services Center - 8475 S. Vermont Ave., Los Angeles, CA 90044
- Westchester – Loyola Village Branch Library, 7114 W. Manchester Ave., Los Angeles, CA 90045
- City Halls within the airport noise study area, which will receive an electronic copy on disk, includes:

o City of Bell	o City of Los Angeles, Office of Mayor
o City of Bellflower	o City of Lynwood
o City of Bell Gardens	o City of Manhattan Beach
o City of Carson	o City of Maywood
o City of Commerce	o City of Montebello
o City of Compton	o Palos Verdes Estates
o City of Cudahy	o City of Paramount
o City of Culver City	o Rancho Palos Verdes
o City of Downey	o City of Redondo Beach
o City of El Segundo	o Rolling Hills Estates
o City of Gardena	o City of Rolling Hills
o City of Hawthorne	o City of Santa Monica
o City of Hermosa Beach	o City of Seal Beach
o City of Huntington Park	o Signal Hill
o City of Inglewood	o City of South Gate
o City of Lakewood	o City of Torrance
o City of Lawndale	o City of Vernon
o City of Lomita	

7. *An invitation to comment on the proposed restriction and analysis, with a minimum 45-day comment period:*

LAWA will accept comments on the proposed restriction and analysis until 5 p.m. on December 17, 2012. Written comments must be submitted to the addresses identified in item 9.

8. *Information on how to request a copy of the complete text of the restriction, including any sanctions for noncompliance, and the analysis (if not included with this notice):*

The complete text of the restriction, including any exemptions and sanctions for non-compliance is provided in Section 3 of the LAX 14 C.F.R. Part 161 Report, which will be available for public inspection beginning November 1, 2012 at locations identified in item 6.

9. *The address for submitting comments to the airport operator proposing the restriction, including identification of a contact person:*

Comments may be submitted online at www.laxpart161.com/en/Comments.cfm or in writing to the following contact:

Mr. Scott Tatro
Los Angeles World Airports
1 World Way, P.O. Box 92216
Los Angeles, CA 90009-2216
Email: laxpart161@lawa.org

C.2 Media Release for Notice and Public Workshop

P.O.Box 92216
Los Angeles CA 90009-2216
www.lawa.aero

We Fly as One
LAX ONT PMD VNY

Los Angeles World Airports

News Release

CONTACT: Marshall Lowe
(424) 646-5260

PUBLIC REVIEW, WORKSHOP SET FOR COMPLETED LAX PART 161 NOISE STUDY

(Los Angeles, California – October 25, 2012) Los Angeles World Airports (LAWA) has completed its LAX Part 161 Study and is releasing the draft application for public review and comment. The public review and comment period begins November 1 and ends December 17. A public workshop will be held on November 13 from 6 p.m. to 9 p.m. at the Flight Path Learning Center, 6661 West Imperial Highway, Los Angeles.

The draft application is the final work product of the Part 161 Study and includes documentation and support materials to justify approval of the proposed runway use restriction by the Federal Aviation Administration (FAA).

The LAX Part 161 Study is an attempt to restrict the easterly departure of all aircraft at Los Angeles International Airport with certain limited exemptions, between midnight and 6:30 a.m. when the airport is in over-ocean operations, or when it is in westerly operation during these hours. This would reduce the nighttime noise burden for communities most affected by non-conforming easterly departures during this time. The proposed restriction would not be in effect when LAX is in easterly operations.

The LAX Part 161 Study is a technical and legal document that will be submitted to the FAA in January requesting a waiver of the federal pre-emption and authorization to implement the proposed restriction.

The Notice of Proposed Restriction and the Part 161 application analysis report will be available for public review beginning November 1 at the following locations:

-more-

LAX Part 161 Study ... Page 2 of 2

- On-line at www.laxpart161.com/
- LAWA Environmental Services Division at LAX – 7301 World Way West, Room 312, Los Angeles, CA, 90045, Monday through Friday, 7:30 a.m. to 4:00 p.m.
- Inglewood Public Library – 101 W. Manchester Blvd., Inglewood, CA 90301
- County of Los Angeles Public Library – 4359 Lennox Blvd., Lennox, CA 90304 Mark Ridley Thomas Constituent Services Center - 8475 S. Vermont Ave., Los Angeles, CA 90044
- Westchester – Loyola Village Branch Library, 7114 W. Manchester Ave., Los Angeles, CA 90045

Interested persons wishing to comment on the LAX Part 161 Study may do so by one of the following methods:

- Submit written comments at the public workshop on November 13
- Submit written comments via the Online Comment Form of the LAX Part 161 web page http://www.laxpart161.com/en/Comments.cfm
- In writing to: Scott Tatro, Los Angeles World Airports, Environmental Services Division, 1 World Way, P.O. Box 92216, Los Angeles, CA 90009-22216
- Written comments by e-mail to laxpart161@lawa.org

Once the application is submitted to the FAA, the FAA has 180 days to complete its review and approve or disapprove the application. During the review period, FAA will open a public docket and accept written comments for a 45-day period.

If the application is approved, LAWA would initiate the ordinance approval process, which requires an environmental analysis under the California Environmental Quality Act. Upon completion of the analysis, the proposed ordinance would be submitted for approval to the Board of Airport Commissioners and then transmitted to the Los Angeles City Council for approval and ordinance enactment.

For further information regarding the LAX Part 161 Study, contact Scott Tatro, Environmental Services Division, at (424) 646-6499.

# # # # #

K-file>word>releases>LAX>2012>LAX Part 161 Study

C.3 Written Notice and Public Workshop Information sent to Government Officials

U.S. Senate	
Senator	Barbara Boxer
Senator	Dianne Feinstein

U.S. Congress	
Congressman	Henry Waxman
Congressman	Xavier Becerra
Congresswoman	Judy Chu
Congresswoman	Karen Bass
Congresswoman	Lucille Roybal-Allard
Congresswoman	Maxine Waters
Congresswoman	Janice Hahn
Congresswoman	Laura Richardson
Congresswoman	Grace Napolitano
Congresswoman	Linda Sanchez

County of Los Angeles	
District Attorney	Steve Cooley
Supervisor	Gloria Molina
Supervisor	Mark Ridley-Thomas
Supervisor	Zev Yaroslavsky
Supervisor	Don Knabe
Supervisor	Michael D. Antonovich

City of Los Angeles	
Mayor	Antonio Villaraigosa
Councilmember	Ed Reyes
Councilmember	Paul Krekorian
Councilmember	Dennis Zine
Councilmember	Tom LaBonge
Councilmember	Paul Koretz
Councilmember	Tony Cardenas
Councilmember	Richard Alarcon
Councilmember	Bernard Parks
Councilmember	Jan Perry
Councilmember	Herb Wesson
Councilmember	Bill Rosendahl
Councilmember	Mitch Englander
Councilmember	Eric Garcetti
Councilmember	Jose Huizar
Councilmember	Joe Buscaino
City Controller	Wendy Greuel
City Attorney	Carmen Trutanich

City of Bell	
Mayor	Ali Saleh
Vice Mayor	Violeta Alvarez
Councilman	Danny Harber
Councilwoman	Ana Maria Quintana
Councilman	Nestor Valencia
City Manager	Doug Willmore

City of Bellflower	
Mayor	Dan Koops
Mayor Pro Tem	Raymond Dunton
Councilmember	Scott Larsen
Councilmember	Sonny Santa Ines

City of Bell Gardens	
Mayor	Pedro Aceituno
Mayor Pro Tem	Sergio Infanzon
Councilmember	Daniel Crespo
Councilmember	Priscilla Flores
Councilmember	Jennifer Rodriguez
City Manager	Phillip Wagner

City of Carson	
Mayor	Jim Dear
Councilmember	Elito Santarina
Councilmember	Julie Ruiz-Raber
Councilmember	Lula Davis-Holmes
Councilmember	Mike Gipson

City of Commerce	
Mayor	Lilia Leon
Mayor Pro Tem	Tina Baca Del Rio
Councilmember	Jose Aguilar
Councilmember	Ivan Alatamirano
Councilmember	Denise Robles
City Administrator	Jorge Rifa

City of Compton	
Mayor	Eric Perrodin
Councilmember	Janna Zurita
Councilmember	Lillie Dobson
Councilmember	Yvonne Arceneaux
Councilmember	Dr. Willie Jones

City of Cudahy

Mayor	Frank Gurulé
Councilmember	Jack Guerrero
Councilmember	Josue Barrios
Councilmember	Juan Romo
City Manager	Hector Rodriquez

City of Culver City

Mayor	Andrew Weissman
Vice Mayor	Jeffrery Cooper
Councilmember	Jim Clarke
Councilmember	Meghan Sahli-Wells
Councilmember	Micheál O'Leary
City Manager	John Nachbar

City of Downey

Mayor	Roger Brossmer
Mayor Pro Tem	Fernando Vasquez
Councilmember	David Gafin
Councilmember	Mario Guerra
Councilmember	Luis Marquez

City of El Segundo

Mayor	Carl Jacobson
Mayor Pro Tem	Bill Fisher
Councilmember	Marie Fellhauer
Councilmember	Dave Atkinson
Councilmember	Suzanne Fuentes

City of Gardena

Mayor	Paul K. Tanaka
Mayor Pro Tem	Tasha Cerda
Councilmember	Rachel Johnson
Councilmember	Ronald K. Ikejiri
Councilmember	Dan Medina

City of Hawthorne

Mayor	Daniel Juarez
Councilmember	Alex Vargas
Councilmember	Angie English
Councilmember	Nilo Michelin
Councilmember	Olivia Valentine

City of Hermosa Beach

Mayor	Jeff Duclos
Mayor Pro Tem	Patrick Bobko
Councilmember	Howard Fishman
Councilmember	Michael DiVirgilio
Councilmember	Peter Tucker
City Manager	Stephen Burrell

City of Huntington Park

Mayor	Andy Molina
Vice Mayor	Mario Gomez
Vice Mayor	Elba Guerrero
Councilmember	Ofelia Hernandez
Councilmember	Rosa Perez

City of Inglewood

Mayor	James Butts Jr.
Councilmember	Michael Stevens
Councilmember	Judy Dunlap
Councilmember	Eloy Morales, Jr.
Councilmember	Ralph Franklin

City of Lakewood

Mayor	Diane DuBois
Vice Mayor	Steve Croft
Councilmember	Jeff Wood
Councilmember	Larry Van Nostran
Councilmember	Todd Rogers

City of Lawndale

Mayor	Harold Hofmann
Mayor Pro Tem	Larry Rudolph
Councilmember	Pat Kearney
Councilmember	James Osborne
Councilmember	Robert Pullen-Miles

City of Lomita

Mayor	James Gazeley
Mayor Pro Tem	Margaret Estrada
Councilmember	Henry Sanchez
Councilmember	Michael Savidan
Councilmember	Ben Traina
City Manager	Michael Rock

City of Lynwood

Mayor	Jim Morton
Mayor Pro Tem	Sal Alatorre
Councilmember	Aide Castro
Councilmember	Maria Santillan
Councilmember	Ramon Rodriguez
City Manager	Roger Haley

City of Manhattan Beach

Mayor	Wayne Powell
Mayor Pro Tem	David Lesser
Councilmember	Nicholas Tell
Councilmember	Amy Howorth
Councilmember	Richard P. Montgomery

City of Maywood

Mayor	Edward Varelo
Mayor Pro Tem	Veronica Guardado
Councilmember	Felipe Aguirre
Councilmember	Thomas Martin
Councilmember	Oscar Magaña
City Manager	Lilian Myers

City of Montebello

Mayor	Frank Gomez
Mayor Pro Tem	Christina Cortez
Councilmember	Art Barajas
Councilmember	William Molinari
Councilmember	Jack Hadjinian
City Administrator	Francesca Tucker-Schuyler

Palos Verdes Estates

Mayor	George Bird Jr.
Mayor Pro Tem	James Goodhart
Councilmember	John Rea
Councilmember	Rosemary Humphrey
Councilmember	Helen Perkins
City Manager	Judy Smith

City of Paramount

Mayor	Peggy Lemmons
Vice Mayor	Gene Daniels
Councilmember	Tom Hansen
Councilmember	Daryl Hofmeyer
Councilmember	Diane Martinez
City Manager	Linda Benedetti-Leal

City of Pico Rivera

Mayor	Bob Archuleta
Mayor Pro Tem	Gustavo Camacho
Councilmember	David Armenta
Councilmember	Brent Tercero
Councilmember	Gregory Salcido
City Manager	Ronald Bates

Rancho Palos Verdes

Mayor	Anthony Misetich
Mayor Pro Tem	Brian Campbell
Councilmember	Susan Brooks
Councilmember	Jim Knight
Councilmember	Jerry Duhovic
City Manager	Carolyn Lehr

City of Redondo Beach

Mayor	Mike Gin
Councilmember	Steve Aspel
Councilmember	Bill Brand
Councilmember	Pat Aust
Councilmember	Steven Diels
Councilmember	Matthew Kilroy
City Manager	Bill Workman

City of Rolling Hills

Mayor	James Black
Mayor Pro Tem	Frank Hill
Councilmember	B. Allen Lay
Councilmember	Thomas Heinsheimer
Councilmember	Godfrey Pernell
City Manager	Anton Dahlerbruch

Rolling Hills Estates

Mayor	Susan Seamans
Mayor Pro Tem	Frank Zerunyan
Councilmember	Steven Zuckerman
Councilmember	Judy Mitchell
Councilmember	John Addleman
City Manager	Douglas Pritchard

City of Santa Monica

Mayor	Richard Bloom
Mayor Pro Tem	Gleam Davis
Councilmember	Bobby Shriver
Councilmember	Kevin McKeown
Councilmember	Robert Holbrook
Councilmember	Terry O'Day
Councilmember	Pam O'Connor

City of Seal Beach

Mayor	Michael Levitt
Mayor Pro Tem	Gary Miller
Councilmember	Ellery Deaton
Councilmember	David Sloan
Councilmember	Gordon Shanks
City Manager	Jill Ingram

Signal Hill

Mayor	Tina Hansen
Vice Mayor	Michael Noll
Councilmember	Larry Forrester
Councilmember	Ellen Ward
Councilmember	Edward Wilson
City Manager	Kenneth Farfsing

City of South Gate

Mayor	Bill DeWitt
Vice Mayor	Gil Hurtado
Councilmember	Jorge Morales
Councilmember	Henry Gonzalez
Councilmember	Maria Davila
City Manager	George Troxcil

City of Torrance

Mayor	Frank Scotto
Mayor Pro Tem	Gene Barnett
Councilmember	Bill Sutherland
Councilmember	Cliff Numark
Councilmember	Pat Furey
Councilmember	Susan Rhilinger
Councilmember	Tom Brewer

City of Vernon

Mayor	Bill Davis
Vice Mayor	W. Michael McCormick
Councilmember	Michael Ybarra
Councilmember	Richard Maisano

Sample Letter

Los Angeles
World Airports
TM

October 29, 2012
Mayor Antonio Villaraigosa
200 North Spring Street, Rm. 303
City of Los Angeles, Office of the Mayor, CA 90012

SUBJECT: LOS ANGELES INTERNATIONAL AIRPORT NOTICE OF PROPOSED AIRPORT USE RESTRICTION AND RELEASE OF DRAFT PART 161 APPLICATION

Dear Mayor Villaraigosa,

Los Angeles World Airports (LAWA) is pleased to transmit the enclosed Notice of Proposed Airport Use Restriction: Runway Use Restriction.

The LAX Part 161 Study consists of the analysis of a Noise and Access Restriction at Los Angeles International Airport (LAX) which was done in an attempt to provide meaningful noise relief to communities impacted by certain non-conforming aircraft departing to the east, during the noise sensitive hours of midnight to 6:30 a.m., when all other aircraft are able to take off to the west. The result of the study is the enclosed LAX Part 161 Application, which will be submitted to the Federal Aviation Administration (FAA) for review.

The public comment period on the Part 161 Study will begin on November 1, 2012 and end on December 17, 2012. LAWA will be holding a public workshop regarding the LAX Part 161 Study on November 13, 2012.

The LAX Part 161 Study commenced in 2005 at the request of the LAX/Community Noise Roundtable, which determined that a serious noise disturbance problem exists with the late night easterly departures and asked LAWA to restrict these operations through the Part 161 process. LAWA agreed to perform the study in the LAX Master Plan lawsuit Stipulated Settlement agreement, and in the LAX Master Plan Community Benefits Agreement. LAWA also designated the LAX Part 161 Study as a mitigation measure in the Mitigation Monitoring and Reporting Program of the LAX Master Plan EIR/EIS.

The public workshop on November 13, 2012 will be held at the LAX Flight Path Museum and Learning Center from 6 PM to 9 PM. The museum is located at 6661 West Imperial Highway, Los Angeles, 90009. During the workshop, a presentation on the LAX Part 161 Study will be given at the beginning of the meeting, and then later in the evening in order to accommodate various schedules. .

If you or your staff have any questions about the workshop itself, please contact Dakota Communications at (310) 815-8444. Any questions about the study or application itself should be directed to Robert Holden of my staff at (424) 646-6507 or to me at (424) 646-6499.

Sincerely,

Scott Tatro
Airport Environmental Manager

1 World Way Los Angeles California 90045-5803 **Mail** P.O. Box 92216 Los Angeles California 90009-2216 **Telephone** 310 646 5252 **Internet** www.lawa.aero

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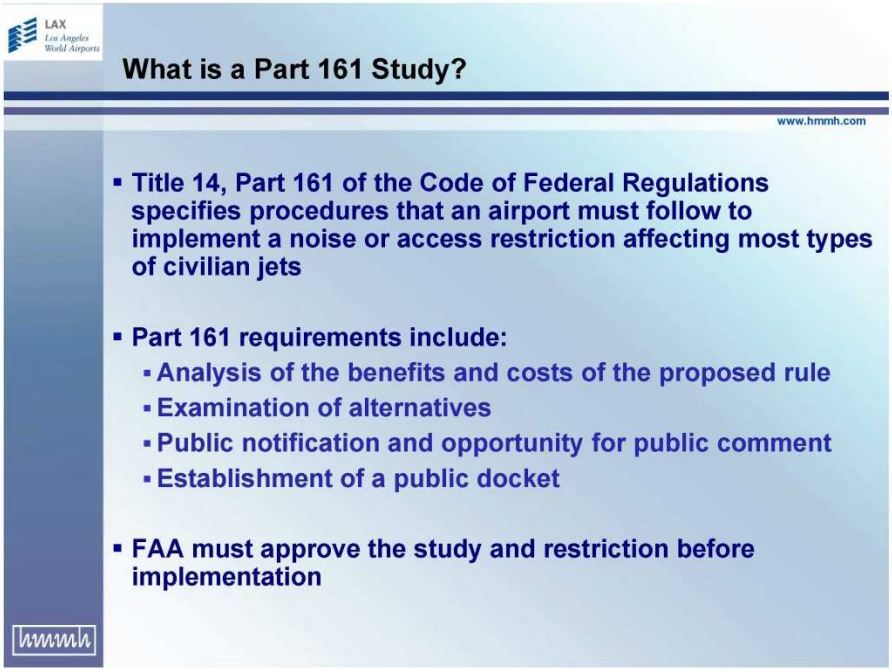
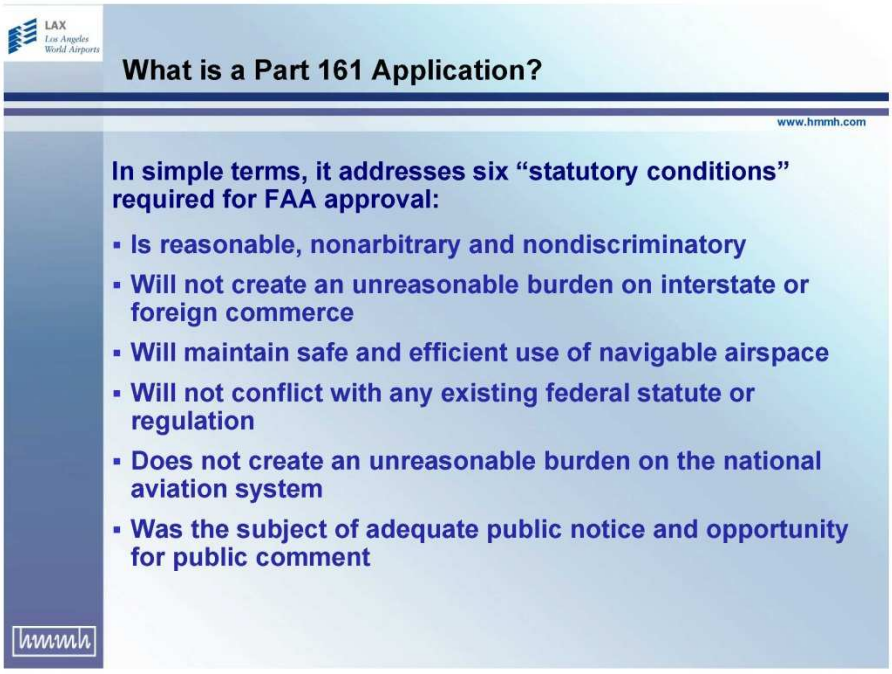
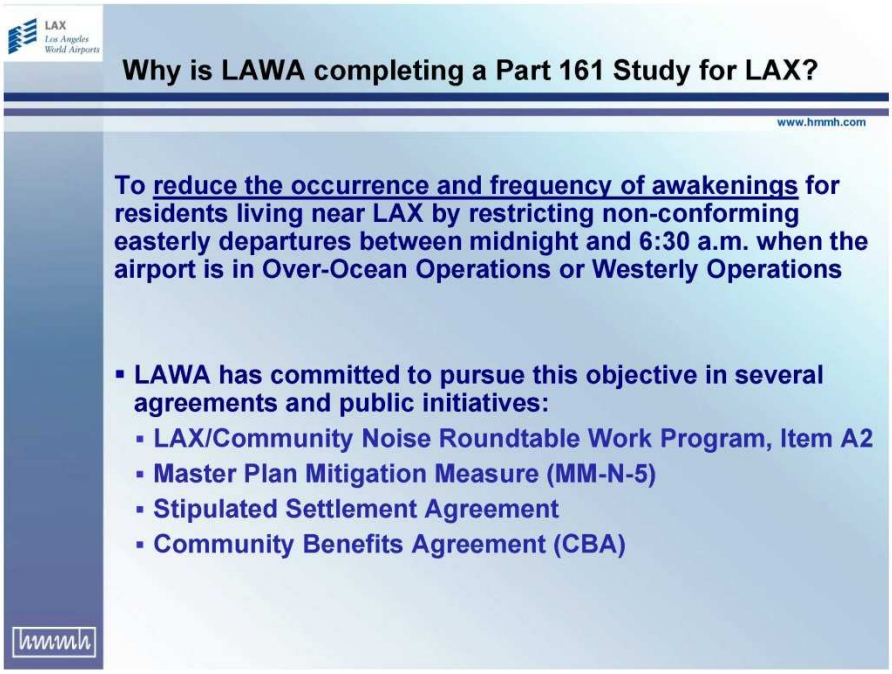
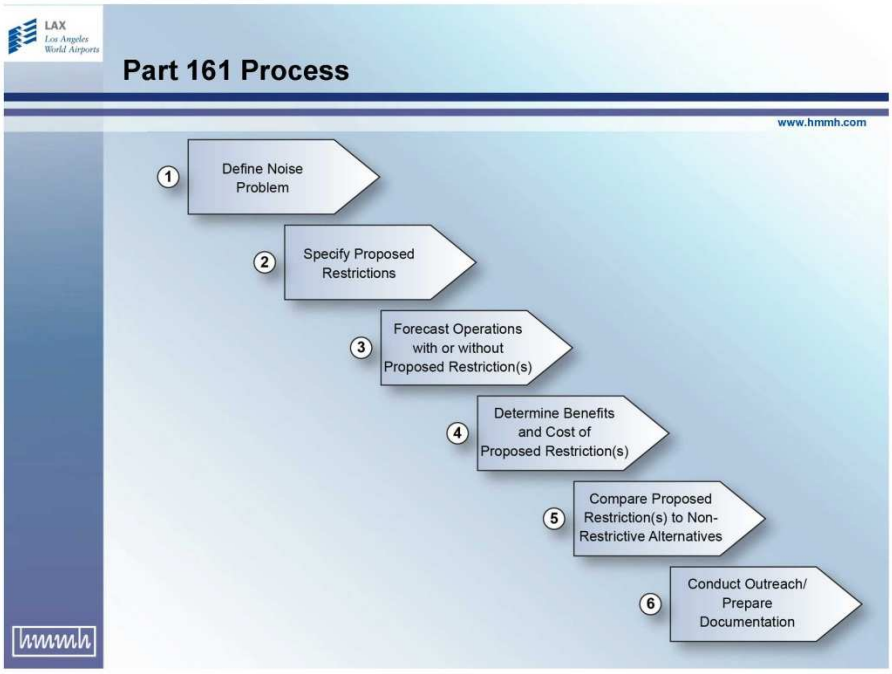
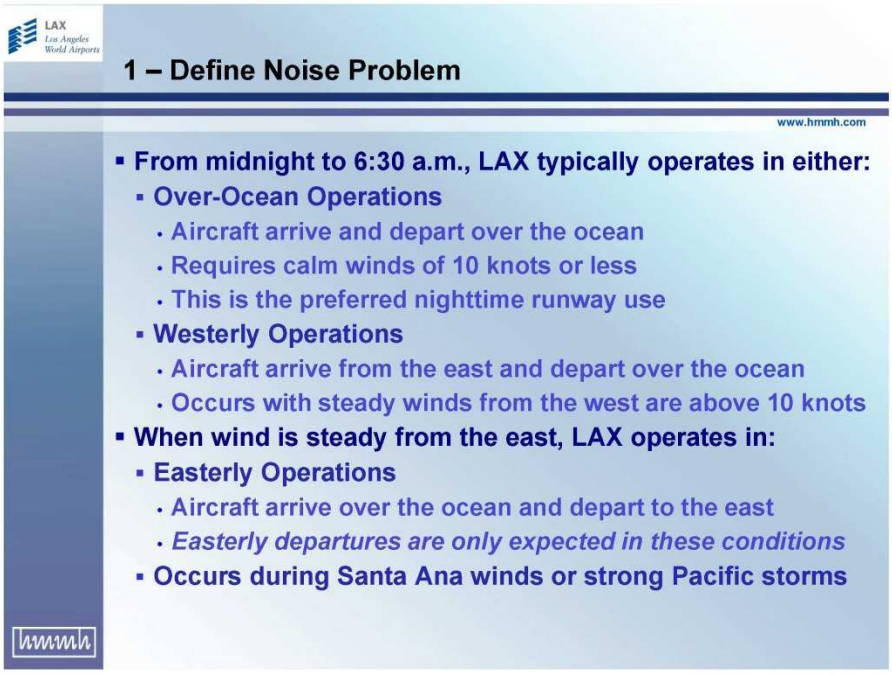
C.4 Presentation to Los Angeles International Airport Area Advisory Committee (November 8, 2012), Public Workshop (November 13, 2012),LAX/Community Roundtable (November 14, 2012)

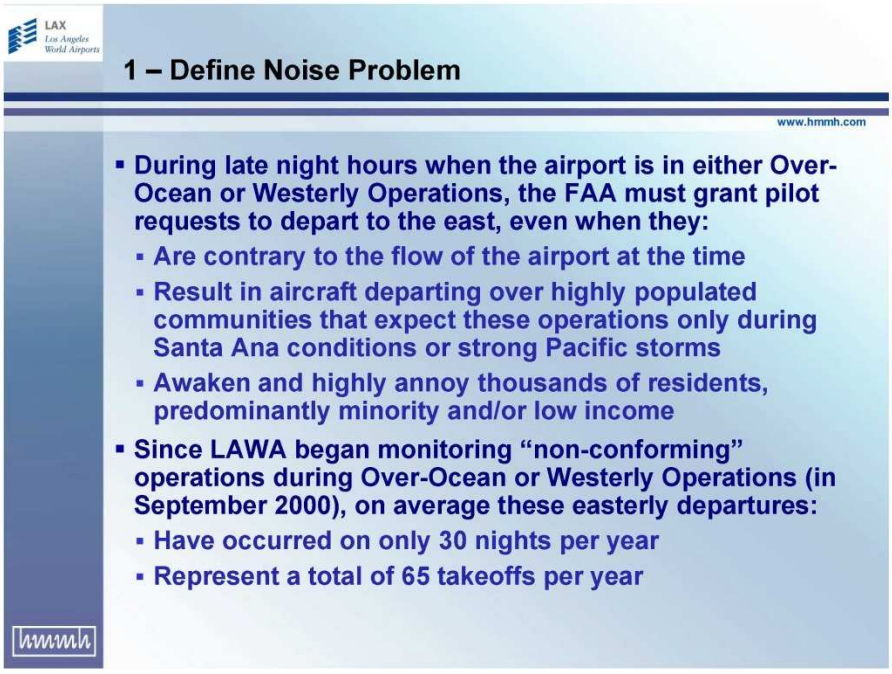


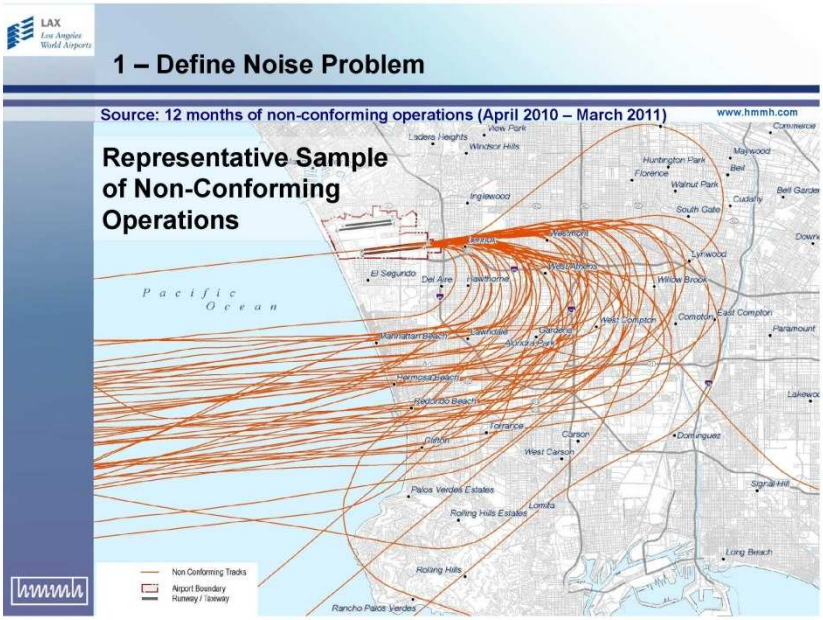

LAX
Los Angeles World Airports
What is a Part 161 Application?
www.hmmh.com
In simple terms, it addresses six "statutory conditions" required for FAA approval:
▪ Is reasonable, nonarbitrary and nondiscriminatory
▪ Will not create an unreasonable burden on interstate or foreign commerce
▪ Will maintain safe and efficient use of navigable airspace
▪ Will not conflict with any existing federal statute or regulation
▪ Does not create an unreasonable burden on the national aviation system
▪ Was the subject of adequate public notice and opportunity for public comment
hmmh


LAX
Los Angeles World Airports
Why is LAWA completing a Part 161 Study for LAX?
www.hmmh.com
To reduce the occurrence and frequency of awakenings for residents living near LAX by restricting non-conforming easterly departures between midnight and 6:30 a.m. when the airport is in Over-Ocean Operations or Westerly Operations
▪ LAWA has committed to pursue this objective in several agreements and public initiatives:
▪ LAX/Community Noise Roundtable Work Program, Item A2
▪ Master Plan Mitigation Measure (MM-N-5)
▪ Stipulated Settlement Agreement
▪ Community Benefits Agreement (CBA)
hmmh

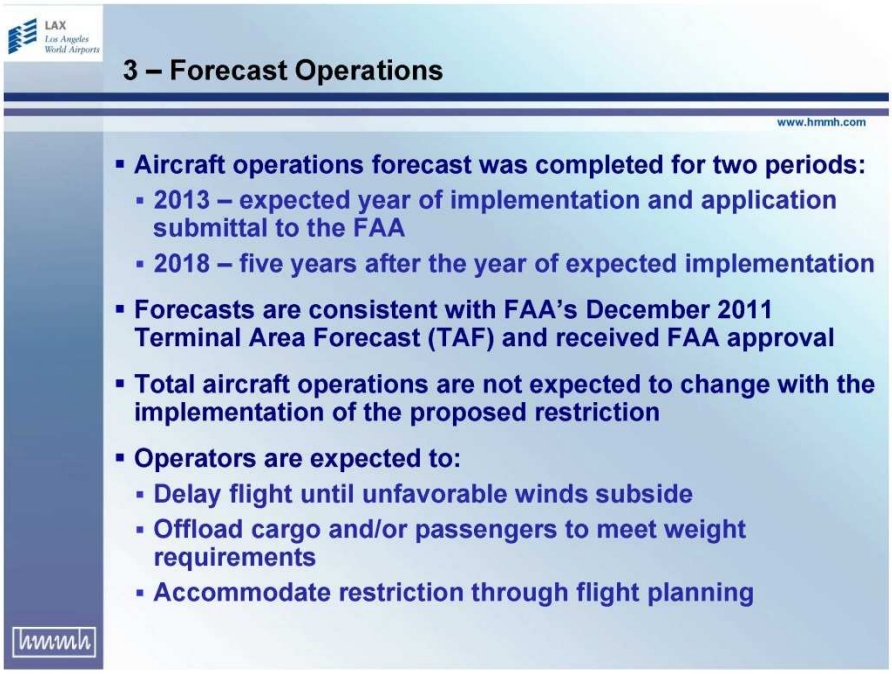

LAX
Los Angeles World Airports
Part 161 Process
www.hmmh.com
1
Define Noise Problem
2
Specify Proposed Restrictions
3
Forecast Operations with or without Proposed Restriction(s)
4
Determine Benefits and Cost of Proposed Restriction(s)
5
Compare Proposed Restriction(s) to Non-Restrictive Alternatives
6
Conduct Outreach/ Prepare Documentation
hmmh


LAX
Los Angeles World Airports
1 – Define Noise Problem
www.hmmh.com
From midnight to 6:30 a.m., LAX typically operates in either:
Over-Ocean Operations
Aircraft arrive and depart over the ocean
Requires calm winds of 10 knots or less
This is the preferred nighttime runway use
Westerly Operations
Aircraft arrive from the east and depart over the ocean
Occurs with steady winds from the west are above 10 knots
When wind is steady from the east, LAX operates in:
Easterly Operations
Aircraft arrive over the ocean and depart to the east
Easterly departures are only expected in these conditions
Occurs during Santa Ana winds or strong Pacific storms
hmmh


LAX
Los Angeles World Airports
1 – Define Noise Problem
www.hmmh.com
During late night hours when the airport is in either Over-Ocean or Westerly Operations, the FAA must grant pilot requests to depart to the east, even when they:
Are contrary to the flow of the airport at the time
Result in aircraft departing over highly populated communities that expect these operations only during Santa Ana conditions or strong Pacific storms
Awaken and highly annoy thousands of residents, predominantly minority and/or low income
Since LAWA began monitoring "non-conforming" operations during Over-Ocean or Westerly Operations (in September 2000), on average these easterly departures:
Have occurred on only 30 nights per year
Represent a total of 65 takeoffs per year
hmmh


LAX
Los Angeles World Airports
1 – Define Noise Problem
Source: 12 months of non-conforming operations (April 2010 – March 2011)
www.hmmh.com
Representative Sample of Non-Conforming Operations
Pacific Ocean
Non Conforming Tracks
Airport Boundary
Runway / Taxiway
hmmh


LAX
Los Angeles World Airports
2 – Specify Proposed Restriction
www.hmmh.com
Restrict easterly departures of aircraft, with certain exemptions, between the hours of midnight and 6:30 a.m. when the Airport is in Over-Ocean Operations, or when it remains in Westerly Operations
hmmh


LAX
Los Angeles World Airports
3 – Forecast Operations
www.hmmh.com
Aircraft operations forecast was completed for two periods:
2013 – expected year of implementation and application submittal to the FAA
2018 – five years after the year of expected implementation
Forecasts are consistent with FAA's December 2011 Terminal Area Forecast (TAF) and received FAA approval
Total aircraft operations are not expected to change with the implementation of the proposed restriction
Operators are expected to:
Delay flight until unfavorable winds subside
Offload cargo and/or passengers to meet weight requirements
Accommodate restriction through flight planning
hmmh

4 – Determine Benefits and Costs

www.hmmh.com

- **Expected upper bound costs to the operators to offload payload (net present value (NPV) in 2013 dollars):**

Annual Growth in Cargo Rates	Period NPV is Calculated	Payload Reduction of 10,000 lbs.	Payload Reduction of 20,000 lbs.
No increase	5 years	$3,249,000	$9,591,000
	10 years	$5,566,000	$16,430,000
	20 years	$8,395,000	$24,782,000
3% Increase	5 years	$3,539,000	$10,448,000
	10 years	$6,465,000	$19,084,000
	20 years	$10,881,000	$32,122,000

Source: SH&E

- **Estimates represent upper bound since some or all of the affected payloads will be transferred to other flights operated by the same carrier with no net loss in revenue**
- **No other costs are expected**

4 – Determine Benefits and Costs

www.hmmh.com

- **Estimated benefits include the following:**
  - **Aircraft operational efficiencies**
    - Estimated 219,000 lbs. of carbon dioxide emissions saved per year
    - $500,000 in fuel costs over 20 years (in 2013 dollars)
  - **Environmental justice**
    - Without restriction, approximately 60% of awakenings are to minority or low-Income residents
  - **Quality of life**
    - Fewer annual awakenings
      - Over 8,000 fewer awakenings on some nights

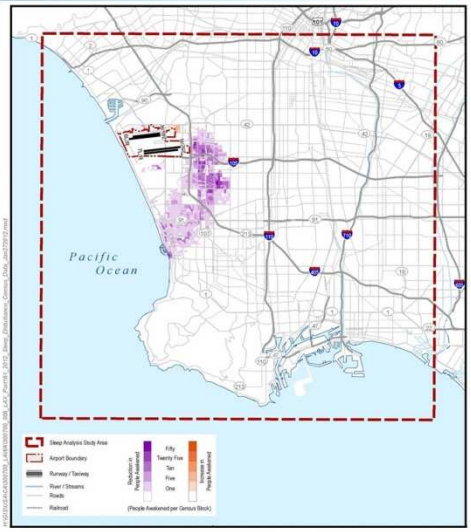
4 – Sleep Disturbance - Benefit

www.hmmh.com

An example:

On January 27, 2012, seven non-conforming operations occurred during between midnight and 1 a.m.

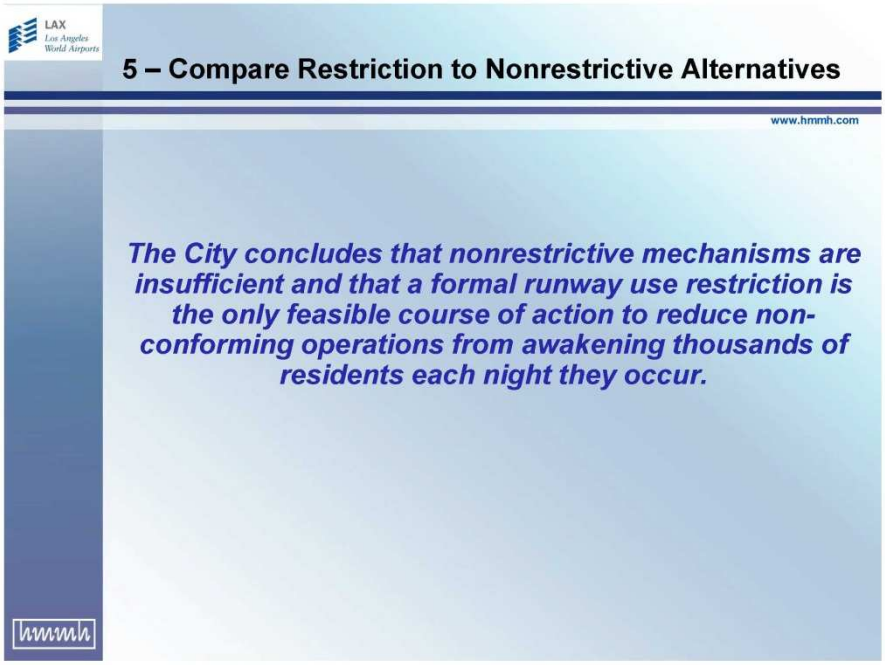
If the restriction had been in place, it would have resulted in an estimated reduction of over 8,000 awakenings that night.

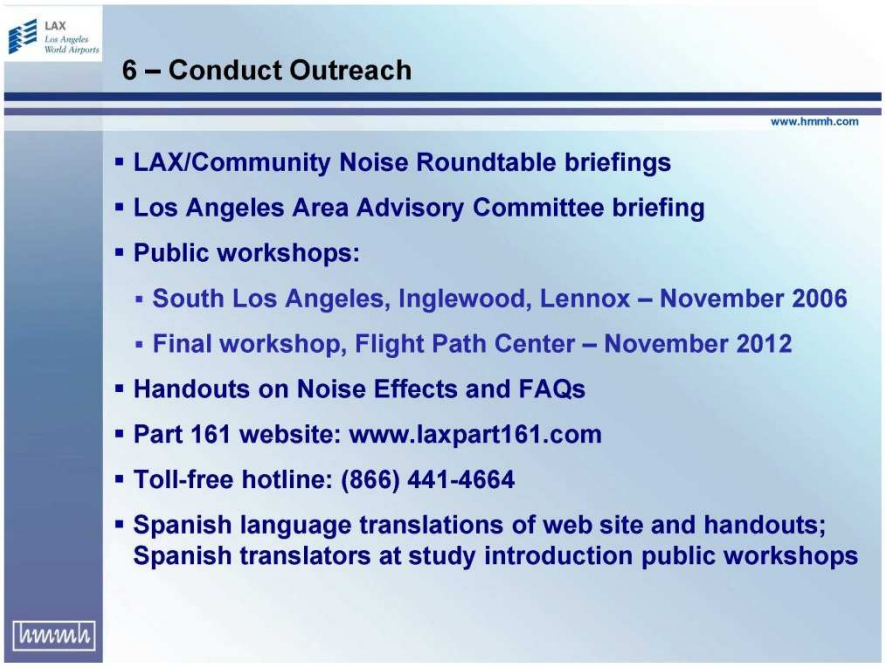


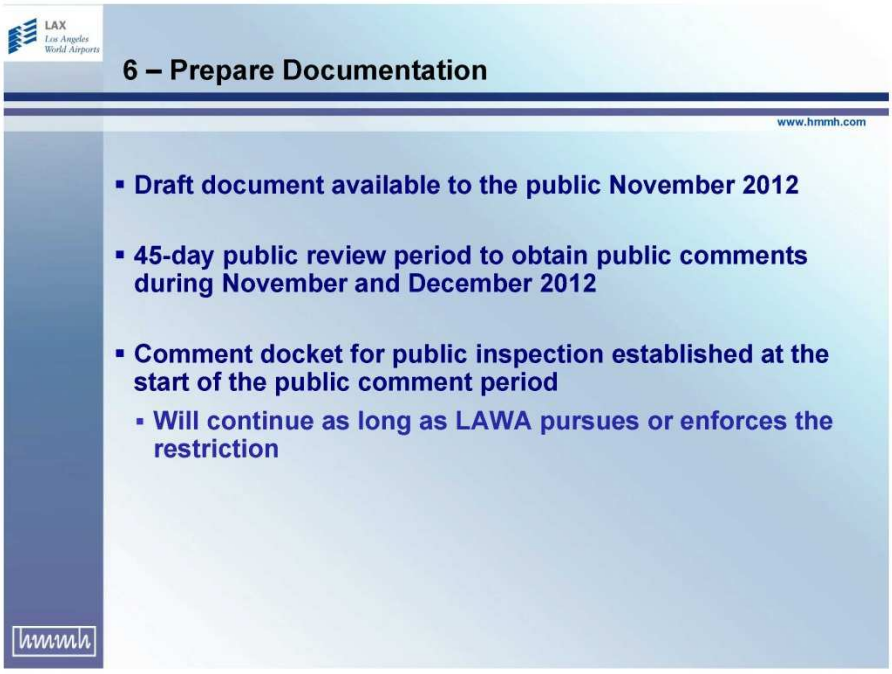
5 – Compare Restriction to Nonrestrictive Alternatives

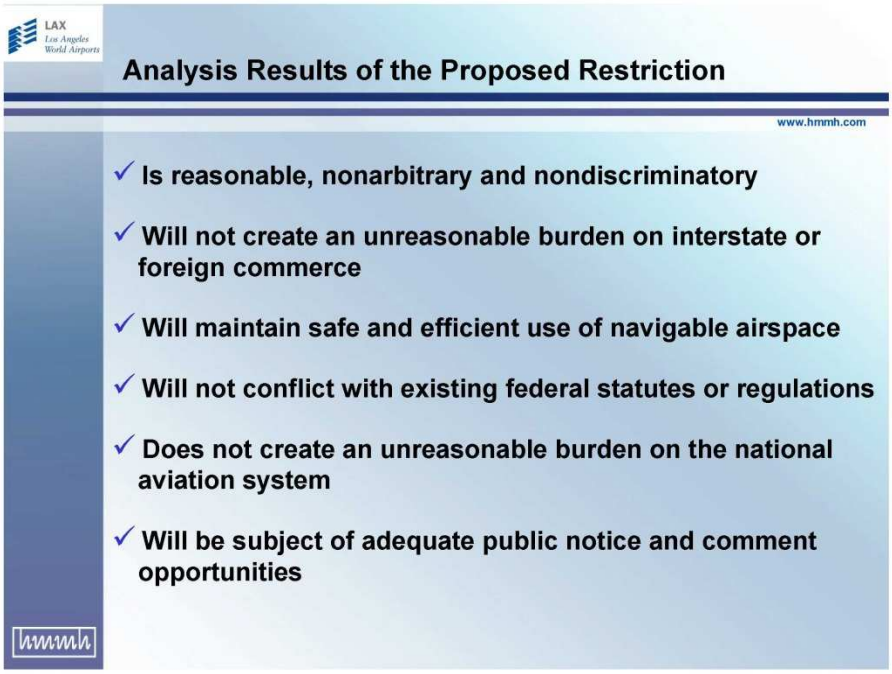
www.hmmh.com

- **The Board of Airport Commissioners (BOAC) has addressed easterly departures during late night hours in four formal resolutions since 1972**
- **The State of California Noise Variances, including the most recent effective February 2011, state that LAX is to:**
  "…continue in full force … and enforcement of" the noise abatement policies that includes the Over-Ocean Operations between midnight and 6:30 a.m.
- **LAWA monitors, identifies and contacts operators of each non-conforming operation, and requests a response**


LAX
Los Angeles World Airports
5 – Compare Restriction to Nonrestrictive Alternatives
www.hmmh.com
The City concludes that nonrestrictive mechanisms are insufficient and that a formal runway use restriction is the only feasible course of action to reduce non-conforming operations from awakening thousands of residents each night they occur.
hmmh


LAX
Los Angeles World Airports
6 – Conduct Outreach
www.hmmh.com
LAX/Community Noise Roundtable briefings
Los Angeles Area Advisory Committee briefing
Public workshops:
South Los Angeles, Inglewood, Lennox – November 2006
Final workshop, Flight Path Center – November 2012
Handouts on Noise Effects and FAQs
Part 161 website: www.laxpart161.com
Toll-free hotline: (866) 441-4664
Spanish language translations of web site and handouts; Spanish translators at study introduction public workshops
hmmh

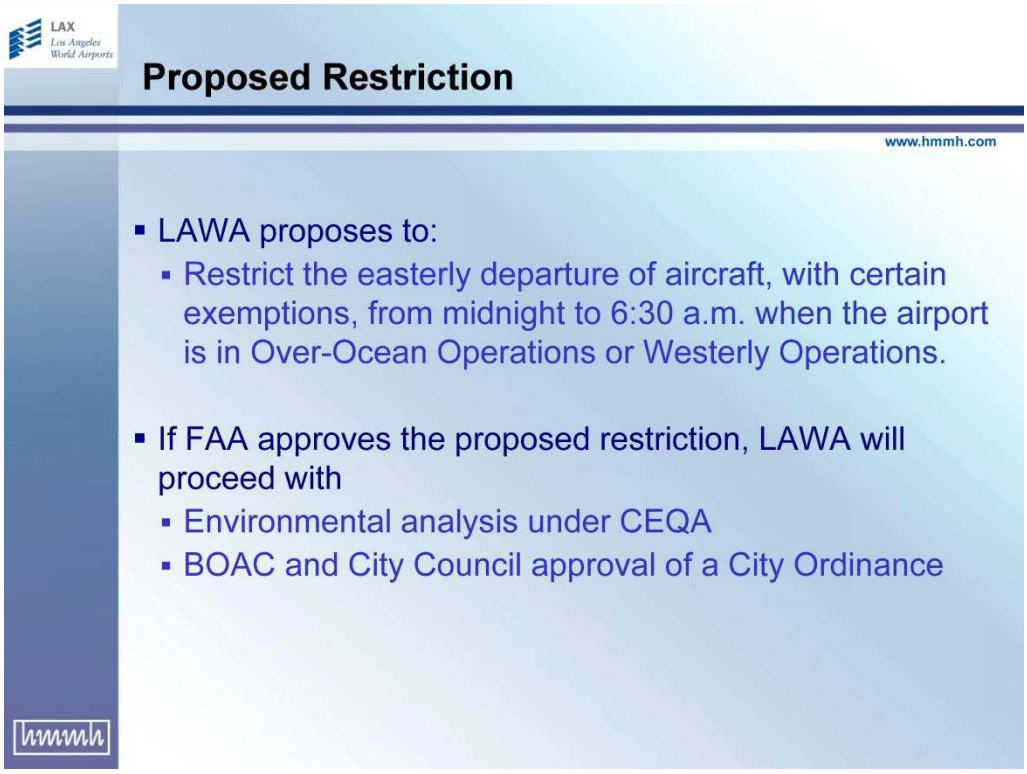

LAX
Los Angeles World Airports
6 – Prepare Documentation
www.hmmh.com
▪ Draft document available to the public November 2012
▪ 45-day public review period to obtain public comments during November and December 2012
▪ Comment docket for public inspection established at the start of the public comment period
▪ Will continue as long as LAWA pursues or enforces the restriction
hmmh


LAX
Los Angeles World Airports
Analysis Results of the Proposed Restriction
www.hmmh.com
✓ Is reasonable, nonarbitrary and nondiscriminatory
✓ Will not create an unreasonable burden on interstate or foreign commerce
✓ Will maintain safe and efficient use of navigable airspace
✓ Will not conflict with existing federal statutes or regulations
✓ Does not create an unreasonable burden on the national aviation system
✓ Will be subject of adequate public notice and comment opportunities
hmmh


LAX
Los Angeles World Airports
Next Steps
www.hmmh.com
45-day public review period:
November 1, 2012 through December 17, 2012
Public Workshop:
November 13, 2012
LAWA submits Part 161 document to FAA:
January 2013
FAA decision within 180 days of accepting the application
hmmh

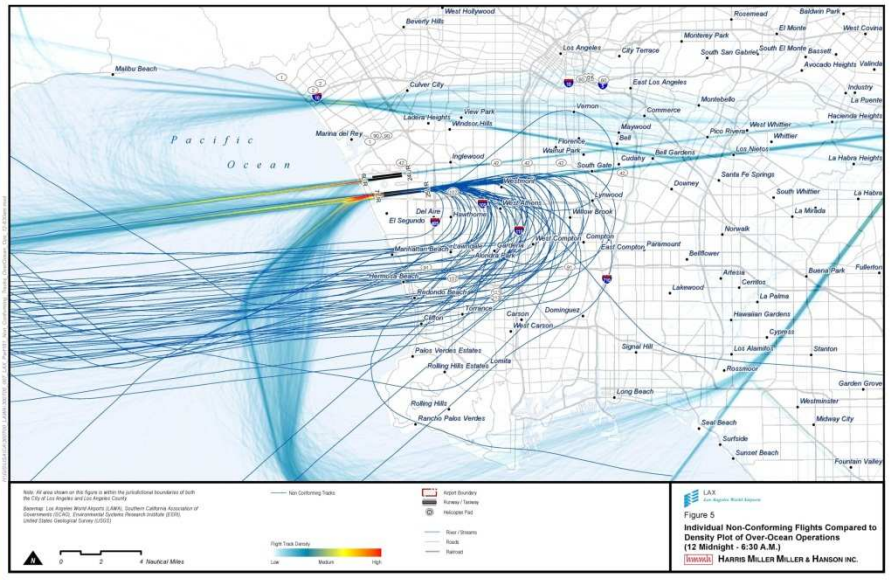

LAX
Los Angeles World Airports
Part 161 Study for
Los Angeles International Airport
Los Angeles World Airports
Thank You
hmmh

C.5 Display Boards for Public Workshop (November 13, 2012)



Proposed Restriction – Affected Flights

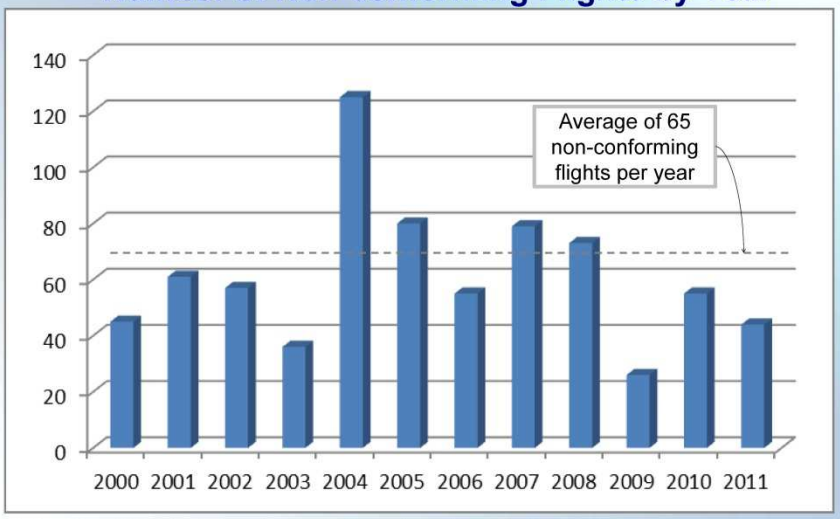
www.hmmh.com



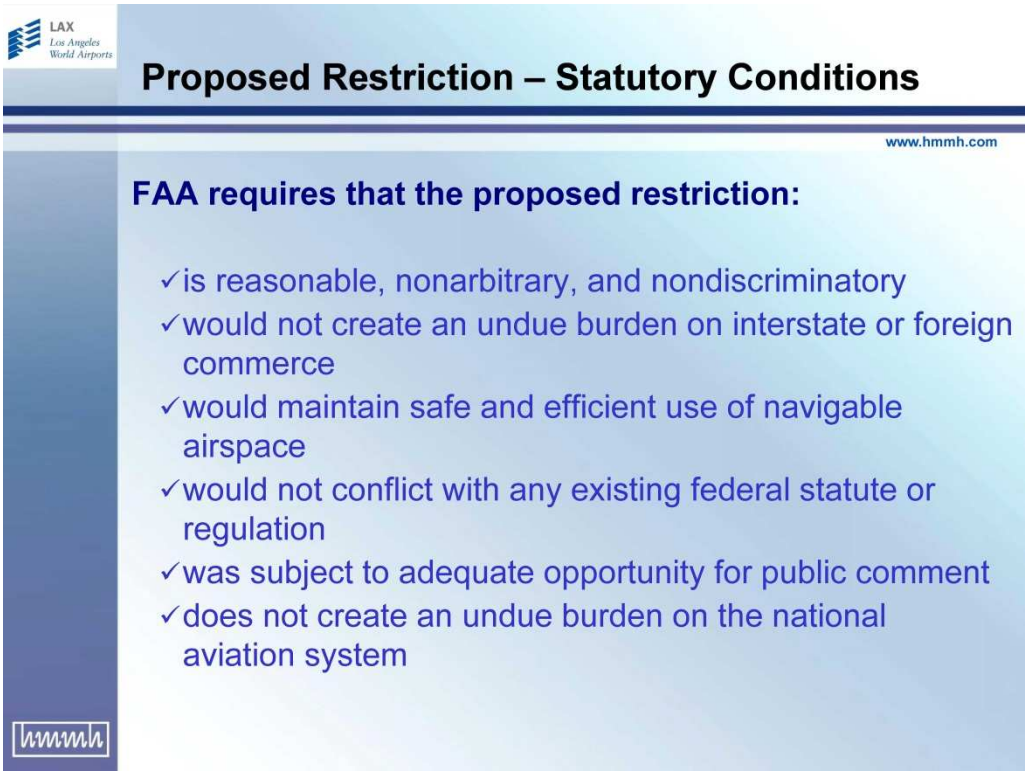
Proposed Restriction – Affected Flights

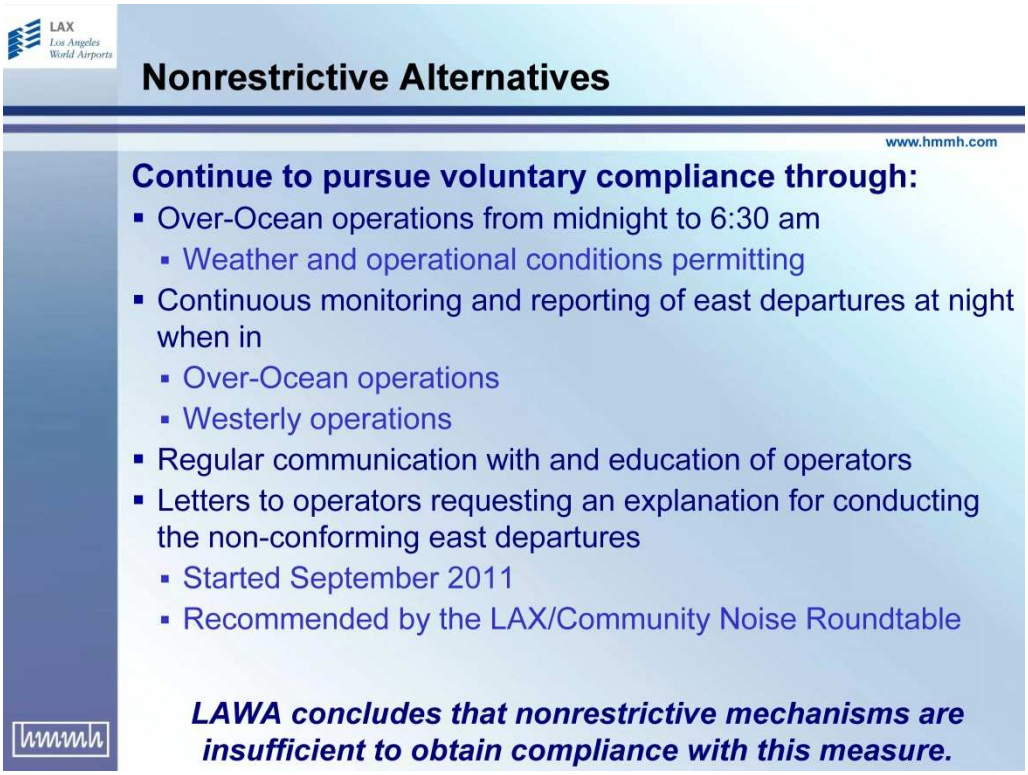
www.hmmh.com

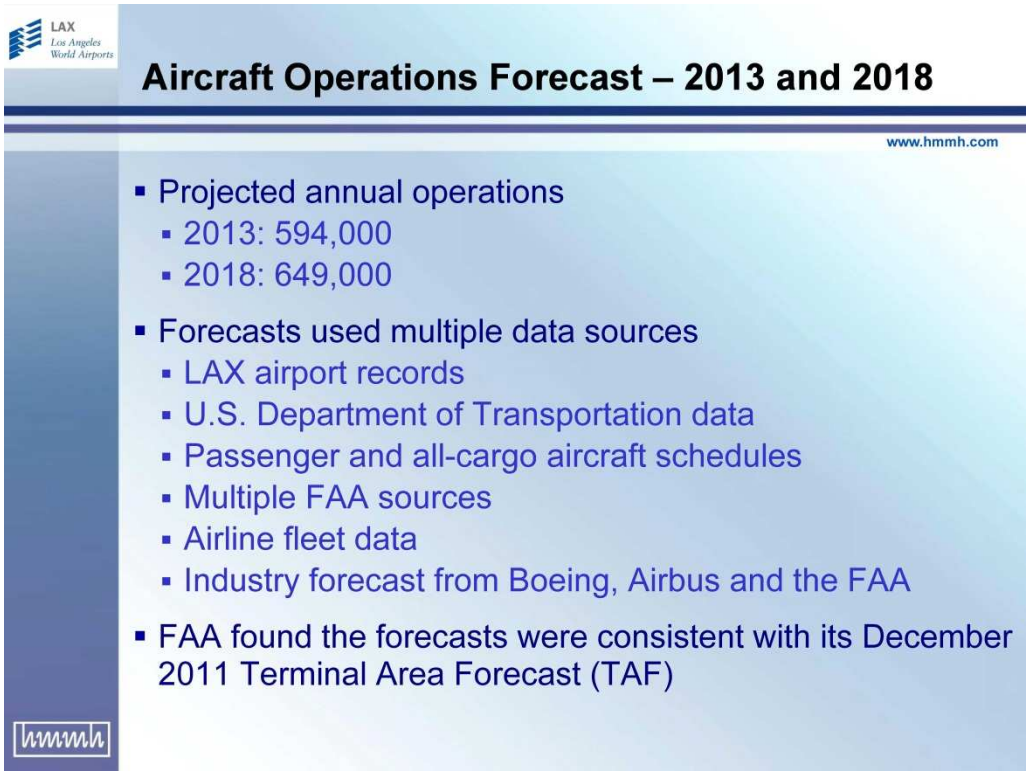
Number of Non-conforming Flights by Year

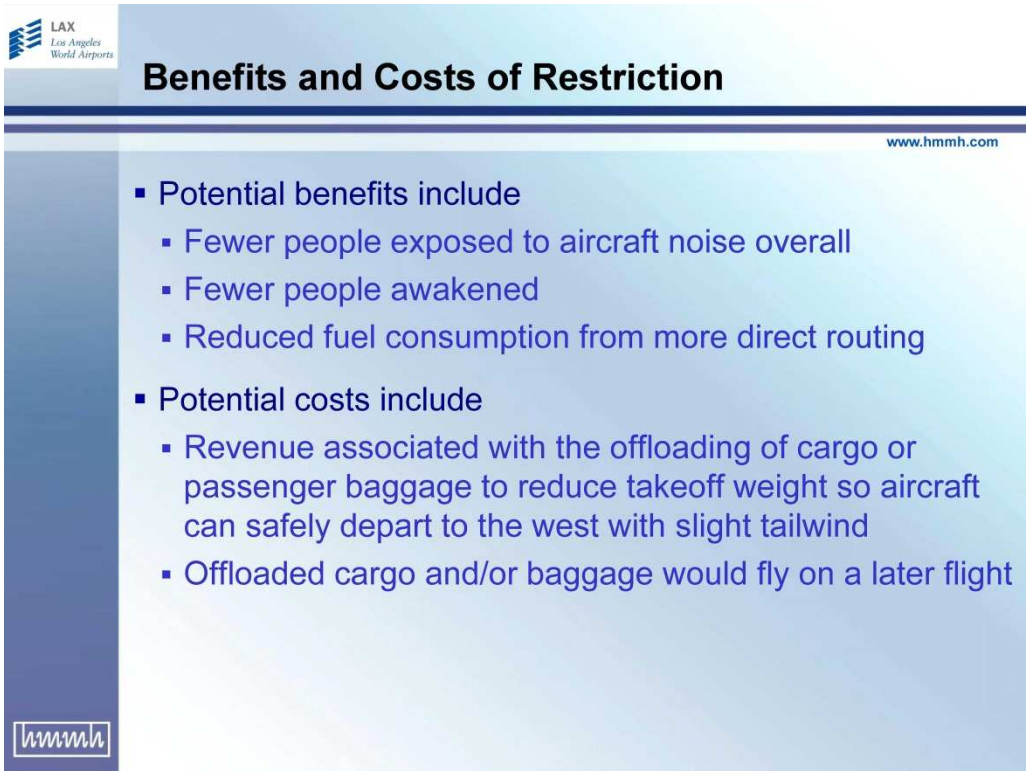


Note: Year 2000 includes data only from June through December


LAX
Los Angeles World Airports
Proposed Restriction – Statutory Conditions
www.hmmh.com
FAA requires that the proposed restriction:
✓is reasonable, nonarbitrary, and nondiscriminatory
✓would not create an undue burden on interstate or foreign commerce
✓would maintain safe and efficient use of navigable airspace
✓would not conflict with any existing federal statute or regulation
✓was subject to adequate opportunity for public comment
✓does not create an undue burden on the national aviation system
hmmh


LAX
Los Angeles World Airports
Nonrestrictive Alternatives
www.hmmh.com
Continue to pursue voluntary compliance through:
▪ Over-Ocean operations from midnight to 6:30 am
▪ Weather and operational conditions permitting
▪ Continuous monitoring and reporting of east departures at night when in
▪ Over-Ocean operations
▪ Westerly operations
▪ Regular communication with and education of operators
▪ Letters to operators requesting an explanation for conducting the non-conforming east departures
▪ Started September 2011
▪ Recommended by the LAX/Community Noise Roundtable
LAWA concludes that nonrestrictive mechanisms are insufficient to obtain compliance with this measure.
hmmh


LAX
Los Angeles World Airports
Aircraft Operations Forecast – 2013 and 2018
www.hmmh.com
Projected annual operations
2013: 594,000
2018: 649,000
Forecasts used multiple data sources
LAX airport records
U.S. Department of Transportation data
Passenger and all-cargo aircraft schedules
Multiple FAA sources
Airline fleet data
Industry forecast from Boeing, Airbus and the FAA
FAA found the forecasts were consistent with its December 2011 Terminal Area Forecast (TAF)
hmmh


LAX
Los Angeles World Airports
Benefits and Costs of Restriction
www.hmmh.com
Potential benefits include
Fewer people exposed to aircraft noise overall
Fewer people awakened
Reduced fuel consumption from more direct routing
Potential costs include
Revenue associated with the offloading of cargo or passenger baggage to reduce takeoff weight so aircraft can safely depart to the west with slight tailwind
Offloaded cargo and/or baggage would fly on a later flight
hmmh

Noise Analysis

www.hmmh.com

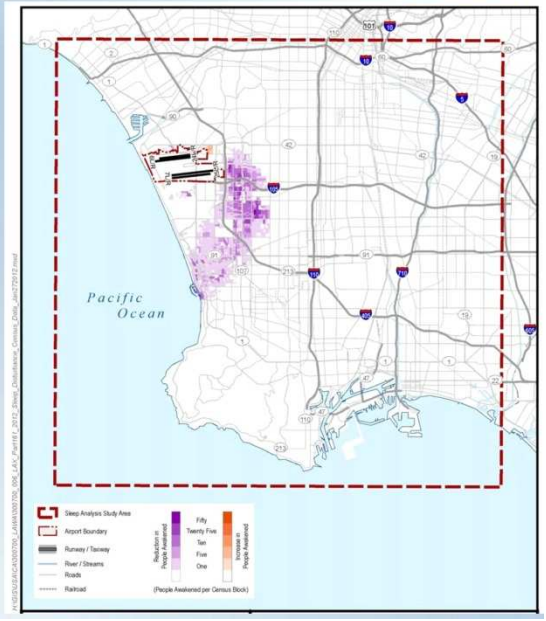
- Sleep Disturbance
  - Based on American National Standards Institute (ANSI) Standard S12.9-2008/Part 6:
    "Methods for Estimation of Awakenings Associated with Outdoor Noise Events Heard in Homes"
  - Up to 185,000 fewer awakenings annually
  - An estimated 8,627 awakenings from seven non-conforming operations on January 27, 2012
- Environmental Justice
  - No significant change to 65 dB CNEL contour
  - Reduced awakenings with proposed restriction
    - Approximately 60% of the people potentially awakened by non-conforming flights are minority or low income

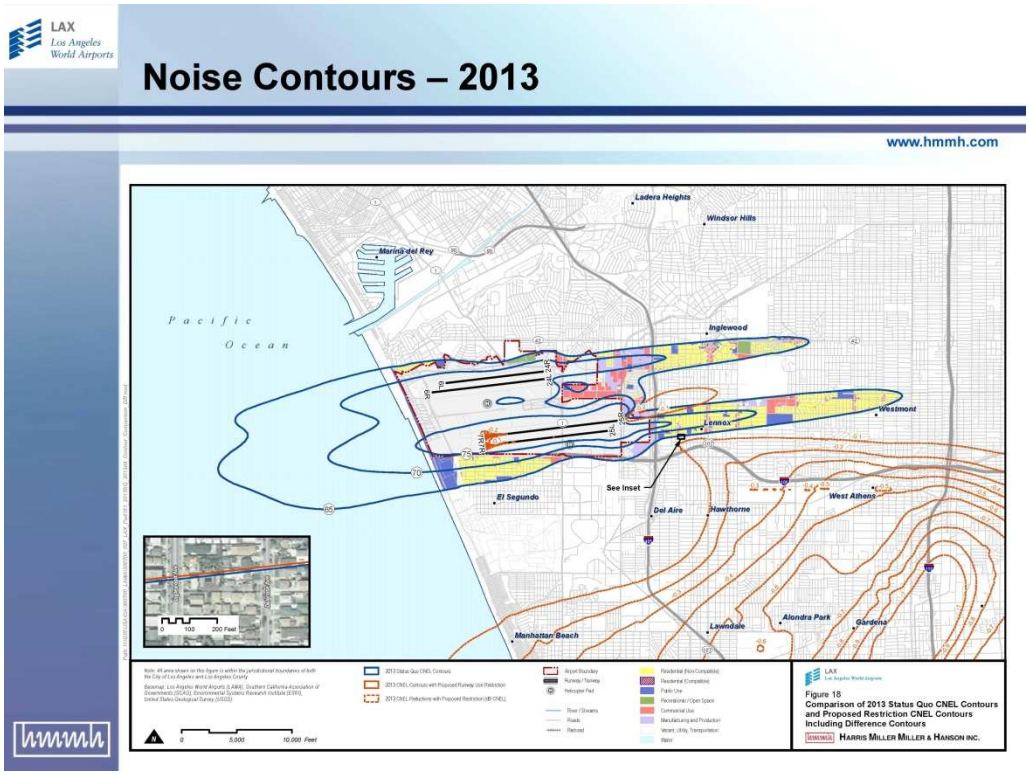
Noise Analysis

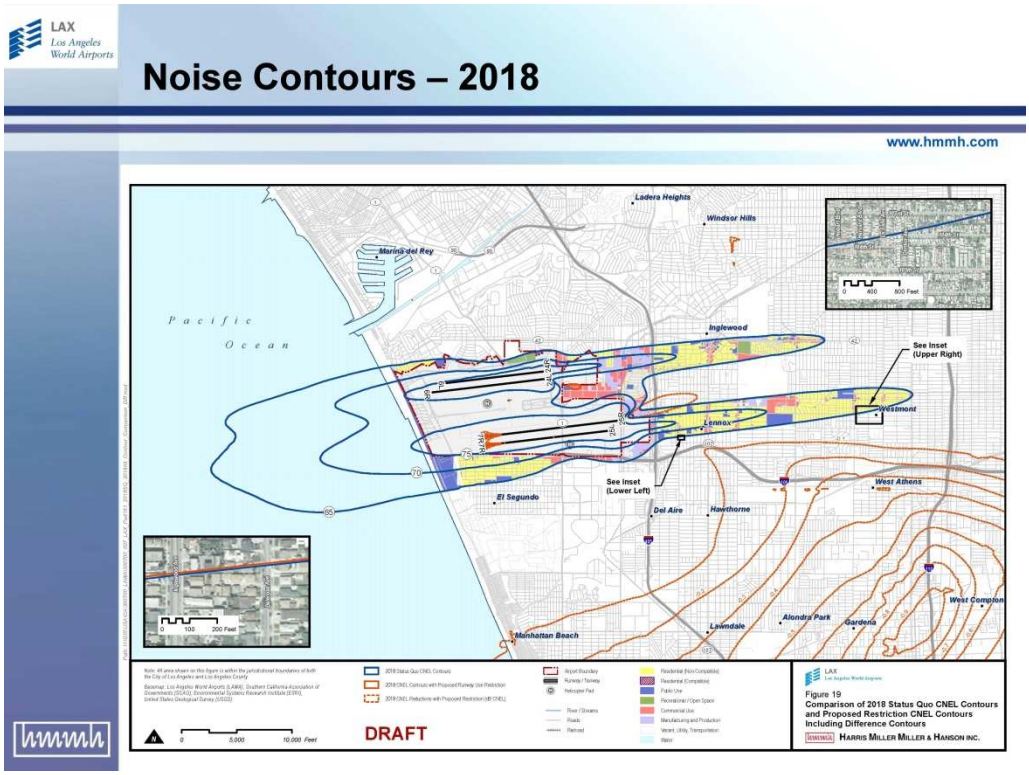
www.hmmh.com

Graphic depicts estimated number of awakenings from the non-conforming operations on January 27, 2012.

- Geographic distribution of changes in awakenings
- Extensive areas receive benefit
- Darker areas are closer to the airport and under the most common flight paths for these non-conforming operations




LAX
Los Angeles World Airports
Noise Contours – 2013
www.hmmh.com
Ladera Heights
Windsor Hills
Marina del Rey
Pacific Ocean
Inglewood
Westmont
Lennox
See Inset
El Segundo
Del Aire
Hawthorne
West Athens
Manhattan Beach
Lawndale
Alondra Park
Gardena
Figure 18
Comparison of 2013 Status Quo CNEL Contours and Proposed Restriction CNEL Contours Including Difference Contours
HARRIS MILLER MILLER & HANSON INC.


LAX
Los Angeles World Airports
Noise Contours – 2018
www.hmmh.com
Ladera Heights
Windsor Hills
Marina del Rey
Pacific Ocean
Inglewood
See Inset (Upper Right)
Westmont
Lennox
See Inset (Lower Left)
El Segundo
Del Aire
Hawthorne
West Athens
West Compton
Manhattan Beach
Lawndale
Alondra Park
Gardena
DRAFT
Figure 19
Comparison of 2018 Status Quo CNEL Contours and Proposed Restriction CNEL Contours Including Difference Contours
HARRIS MILLER MILLER & HANSON INC.


LAX
Los Angeles
World Airports
Part 161 Study for
Los Angeles International Airport
Los Angeles World Airports
Public Comments
November 13, 2012
hmmh

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C.6 Public Workshop Sign-in Sheets

MEETING SIGN-IN SHEET

Project:	FAR PART 161 at LAX	**Meeting Date:**	November 13, 2012
Facilitator:	LAWA	**Place/Room:**	Flight Path Learning Center & Museum

Name	Address	Phone	E-Mail
V. WOLLNER	370 PALOS VERDES BLVD. #13 RED. BEACH, CA 90277	(310) 375-1864	joe-wollner@yahoo.com
KEVIN TEEL	SEPULVEDA WAY, AZUSA CPO LOS ANGELES, CA 90045	(310) 417-7502	kevin.e.teel@delta.com
Hiroshi Ikeya	6501 W. HWY. Los Angeles. Imperial CA 90045	(310) 342-2400	hiroshi.ikeya@nca.aero
Chad Molnar		213-308-7595	chad.molnar@lacity.org

MEETING SIGN-IN SHEET

Project:	FAR PART 161 at LAX	**Meeting Date:**	November 13, 2012
Facilitator:	LAWA	**Place/Room:**	Flight Path Learning Center & Museum

Name	Address	Phone	E-Mail
Mia Ratcliff	El Segundo	(310)7253610	N/A
DENNY SCHNEIDER	ROUNDTABLE	310 641-4199	DENNY@WECLIVEFREE.COM
KERMACY MADDOX	11645 W. Olympic Blvd	310 815-8444	KKMADDOX@AOL.COM
Jim Bichhart	200 N. Spring St. #303	213 978 0600	Jim.bichhart@lacity.org

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C.7 Comments Received at Public Workshop

LAX
Los Angeles World Airports
Part 161 Noise Study

FAR PART 161 STUDY AT LAX
PUBLIC WORKSHOP COMMENT CARD
NOVEMBER 13, 2012

NAME: Christina Tigert

ORGANIZATION: resident

ADDRESS: 3321 W 183rd st

CITY: Torrance, CA 90504

STATE: CA

PHONE: N/A

E-MAIL: N/A

COMMENT(S)

This restriction is necessary. I have been woken up several times from non-conforming east operations. The last was a B747 at 2,900' above my home. It was a warm summer night. I heard that plane coming well before it actually flew over 4 houses west of mine. Asking the airlines to off load some cargo in order to depart to the west is not unreasonable, esspecially when all other operators are in Over-Ocean Operations. Often the tail wind component is 3-6 knots, based on the

Please use reverse side for additional comments

The City's Responses to Comments

published east depart reports.

The City's Responses to Comments

LAX
Los Angeles World Airports
Part 161 Noise Study

FAR PART 161 STUDY AT LAX
PUBLIC WORKSHOP COMMENT CARD
NOVEMBER 13, 2012

NAME: Jim Bickhart

ORGANIZATION: Office of Mayor Antonio Villaraigosa

ADDRESS: 200 N. Spring Street #303

CITY: Los Angeles

STATE: CA 90012

PHONE: 213 978-0600

E-MAIL: jim.bickhart@lacity.org

COMMENT(S)

The Mayor is supportive of this application. However, we believe it would be helpful for LAWA to provide a more forthcoming explanation of what constitutes an "exception" to the proposed regulation, should it be approved by the FAA. In the public's mind an exception can sometimes be like a "poison pill" that undermines ~~the~~ at least some of the desirability of the proposed regulation. This, in turn, could lead to diminished enthusiasm and support for the application.

We are aware that the FAA rarely approves these applications, so we wish you luck and offer to provide additional support for the application if LAWA desires it.

Please use reverse side for additional comments

The City's Responses to Comments

Section 3 provides explicit information on the limited exemptions for the proposed restriction.

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C.8 Comments Received during Public Review Period

December 3, 2012

Mr. Scott Tatro
Los Angeles World Airports
1 World Way, P.O. Box 92216
Los Angeles, CA 90009-2216

RE: Support for Proposed Restriction at LAX that Restricts Nighttime Non-Conforming East Departures

Dear Mr. Tatro:

As you know, the Los Angeles International Airport/Community Noise Roundtable (Roundtable) is a voluntary and independent body that consists of membership from local elected officials and staff, representatives of congressional offices, members of recognized community groups, the airlines, the Federal Aviation Administration (FAA), and Los Angeles World Airports (LAWA). These parties work together to identify noise issues that affect communities surrounding LAX and to seek feasible solutions to reduce noise over those affected communities.

One of our long standing noise issues is aircraft departing to the east during late night and early morning hours. As you know, the vast majority of aircraft operating at LAX depart in a westerly direction, but on occasion, there are a few large aircraft that depart to the east causing a serous noise disturbance to residents of numerous communities. These departures also fly at low altitudes during the night, when residents are most sensitive to aircraft noise, and can cause sleep disturbance as well.

As a possible mitigation measure for this issue, the Roundtable, in 2001, requested LAWA initiate a Federal Aviation Regulations (FAR) Part 161 Study to examine the possibility of restricting these non-conforming east departures during the hours of midnight and 6:30 a.m. when LAX is in Over Ocean or Westerly Operations. After the long but worthwhile wait, we are delighted to hear that LAWA has finished the study and will be submitting the application to the FAA to seek approval to implement this proposed restriction.

We wish to express our sincere appreciation to LAWA for putting forth remarkable efforts to complete the LAX Part 161 Study and for honoring its commitment to the communities in reducing noise impacts. By restricting these non-conforming east departure operations at LAX, it will provide the residential communities a meaningful noise relief and a better overall quality of life. Because of the potential benefits that this proposed restriction will provide to the residents, we wish to offer our full support for LAWA's pursuit of this proposed restriction at LAX.

I would like to also thank you and your staff, on behalf of the members of the Roundtable, for your continuing support of our efforts in addressing aircraft noise that affects the communities surrounding LAX. With your support, we have achieved great progress in reducing noise exposure over the last decade. The Roundtable continues to look forward in working with LAWA to explore new ways to further reduce noise from LAX aircraft operations.

1 World Way • Los Angeles • CA • 92216 • (310) 646-9640

The City's Responses to Comments

The City responds as follows:

The City thanks Mr. Denny Schneider for his comments on behalf of the LAX/Community Noise Roundtable.

Scott Tatro, LAWA
December 3, 2012
Page 2

The position stated in this letter is the opinion of the majority of the membership of the Roundtable and is not the official position of the Federal Aviation Administration, the City of Los Angeles or Los Angeles World Airports.

Sincerely,

Denny Schneider, Chairman
LAX/Community Noise Roundtable

The City's Responses to Comments

SHUTE, MIHALY & WEINBERGER LLP

396 HAYES STREET, SAN FRANCISCO, CA 94102
T: 415 552-7272 F: 415 552-5816
www.smwlaw.com

OSA L. WOLFF
Attorney
wolff@smwlaw.com

December 7, 2012

Via E-Mail and U.S. Mail

Mr. Scott Tatro
Los Angeles World Airports
1 World Way, P.O. Box 92216
Los Angeles, CA 90009-2116

Re: Proposed Runway Use Restriction at LAX (Part 161)

Dear Mr. Tatro:

On behalf of the City of El Segundo, thank you for the opportunity to review the Application for Approval of a Runway Use Restriction for Los Angeles International Airport (LAX) recently prepared by Los Angeles World Airports (LAWA) pursuant to Title 14 of the Code of Federal Regulations, Part 161 (14 CFR Part 161). With this application, LAWA is taking an important step toward reducing LAX nighttime noise. Specifically, LAWA is proposing to make enforceable its existing voluntary prohibition on departures to the east when LAX is in over-ocean operations at night.

El Segundo applauds LAWA for its efforts to address the adverse noise impacts associated with aircraft operations that do not conform to the voluntary runway use procedures currently in place at LAX. The draft application prepared by LAWA is both thorough and compelling. As such, it warrants prompt and complete approval by the Federal Aviation Administration (FAA) under the Airport Noise and Capacity Act of 1990 (ANCA) and 14 CFR Part 161. That is particularly true because the proposed runway use restriction would not ban any flights or cause flight diversions, only require operators to conform to reasonable runway use rules. El Segundo joins LAWA in urging FAA to approve the application.

The City's Responses to Comments

The City responds as follows:

The City thanks Ms. Osa Wolf for her comments on behalf of the City of El Segundo.

Thank you for the opportunity to comment. Please keep El Segundo informed of developments relating to the proposed runway use restriction.

Very truly yours,

SHUTE, MIHALY & WEINBERGER LLP

Osa L. Wolff

446080.1

The City's Responses to Comments

From: TATRO, SCOTT
To: HOLDEN, ROBERT B.
Subject: FW: EXPRESSION OF APPRECIATION FROM RESIDENTS OF LADERA HEIGHTS
Date: Friday, December 14, 2012 7:02:06 AM

For the file.

Scott Tatro
LAWA Environmental Services Division
(424) 646-6499
statro@lawa.org

From: Bernice Yvonne [mailto:bedforby@ca.rr.com]
Sent: Thursday, December 13, 2012 9:45 PM
To: TATRO, SCOTT; drallanb@mac.com
Subject: EXPRESSION OF APPRECIATION FROM RESIDENTS OF LADERA HEIGHTS

Ladera Heights Civic Association
5357 Centinela Ave.
Los Angeles, CA 90045

Mr. Scott Tatro
Los Angeles World Airports
1 World Way, P.O. Box 92216
Los Angeles, CA 90009-2216

RE: Appreciation for completing LAX Part 161 Study

Dear Mr. Scott Tatro:

As the Ladera Heights Civic Association (LHCA) representative to the Los Angeles International Airport (LAX)/ Community Noise Roundtable, I represent residents of nearly four (4) thousand households in the Ladera Heights Community located approximately two (2) miles Northeast of LAX.

At this distance from LAX, the quality of life for residents is very much impacted by aircraft noise and emissions. Some examples of this noise include ground run-ups, loop departures, Easterly departures, and an increase in aircraft flight activity over residents' homes. The restriction of Easterly departures during Over-Ocean or Westerly Operations from midnight to 6:30 AM as defined by the LAX Part 161 Study will afford some relief from sleep interruption during these early morning hours for residents.

On behalf of the residents of Ladera Heights I commend and very much appreciate the

The City's Responses to Comments

The City responds as follows:

The City thanks Ms. Yvonne Bedford for her comments on behalf of the Ladera Heights Civic Association.

persistent effort by you and the LAWA Staff for completing the LAX Part 161 Study and submitting it to the Federal Aviation Administration (FAA) for approval.

Sincerely,
Yvonne Bedford
LHCA Representative

The City's Responses to Comments

Alliance for a Regional Solution to Airport Congestion
322 Culver Boulevard, #231 Playa del Rey, CA 90293
info@regionalsolution.org

November 30, 2012

Mr. Scott Tatro
Los Angeles World Airports 1 World Way, P.O. Box 92216 Los Angeles, CA 90009-2216

VIA Email: laxpart161@lawa.org

Re: Comments for LAX Notice of Airport Use Restriction during Midnight to 6:30 AM
October 2012 draft of final submittal

Dear Mr. Tatro,

ARSAC is a community oriented organization advocating for safe LAX operations, improving LAX passenger experience, plus protecting and increasing the economic benefits to areas local to LAX, and to the region as a whole. We also work towards fostering operational policies that limit environmental impacts on all communities.

We strongly urge the FAA to approve this restriction. This restriction approval is an opportunity for the FAA to show that it is serious about its role of protecting the environment and citizens while fostering commerce. The proposal is reasonable, does not restrict the number of departures, and is cost effective. It will codify a process which reduces the impacts on tens of thousands of people surrounding LAX.

ARSAC acknowledges LAWA for taking on the approval application preparation task and for doing it so comprehensively. This effort will reduce the noise impacts on residents living around LAX by restricting the night-time flights to the east when LAX is in "over ocean" or "westerly operations." This effort recognizes an often used noise mitigation that has been voluntary since the 1970s, has been listed as a positive effort during each CA noise variance approved for LAX, and is included in the Stipulated Settlement of 2006 to which ARSAC is a party.

Each easterly take off at night that then turns over highly populated areas to go west impacts a broad number of people in the densely populated areas to the east and north/south areas surrounding LAX. We note that no flights are restricted from departing LAX and therefore there is minimal negative economic impact.

We understand that the FAA has very strict limitations on what expenses are considered in the Part 161 evaluation. The costs for implementation err on the side of conservatism. They including revenue lost for cargo offloaded to meet aircraft weight restrictions even when that cargo can be placed on another aircraft. If health impact costs were included, the benefits shown would be far greater than presented.

Please contact me with any questions: (213) 675-1817 or denny@welivefree.com

Sincerely,

Denny Schneider
President, Alliance for a Regional Solution to Airport Congestion

ARSAC Comments to Request for Part 161 Restriction Approval by FAA

The City's Responses to Comments

The City responds as follows:

The City thanks Mr. Denny Schneider for his comments on behalf of Alliance for a Regional Solution to Airport Congestion.

December 17, 2012

Submitted via email to laxpart161@lawa.org

Mr. Scott Tatro
Los Angeles World Airports
1 World Way, P.O. Box 92216
Los Angeles, CA 90009-2216

Re: Comments on the 14 CFR Part 161 Application for Approval of a Runway Use Restriction at the Los Angeles International Airport

Dear Mr. Tatro:

Airlines for America® (A4A) appreciates this opportunity to comment on the application of the Los Angeles World Airports (LAWA) for approval of a runway use restriction at the Los Angeles International Airport (LAX). A4A is the principal trade and service organization of the U.S. airline industry, and its member airlines and their affiliates transport more than 90 percent of all U.S. airline passenger and cargo traffic.[1] These comments are based on the application prepared pursuant to Federal Aviation Regulation (FAR) Part 161 and the Airport Noise and Capacity Act of 1990 (ANCA) and the supporting analysis prepared by LAWA's consultants (hereinafter "Part 161 Application"). As detailed below, we oppose the proposed operating restriction as we do not believe the analysis demonstrates a noise exposure problem warranting a mandatory restriction and the proposed restriction is unduly burdensome. In addition to opposing the proposed restriction overall, we have grave concerns about the proposed enforcement provisions and the penalties proposed for non-compliance.

A Mandatory Restriction Is Not Warranted

At the outset, it is important to note that restrictions on operations of aircraft meeting Stage 3 noise criteria are disfavored under U.S. law and policy. Our national aviation policy is premised on full access by aircraft operators to the airports that have received public funding or other subsidies over the years. While some exceptions exist in the form of airport curfews or operational limits, for the most part these pre-date the passage of ANCA and were specifically grandfathered in the Act. The criteria for a new access restriction under ANCA and FAR part 161 are appropriately stringent and the process to obtain approval from the U.S. Federal aviation Administration (FAA) is consequently rigorous.

Key among the criteria for access restrictions are that any such restriction must be "reasonable" and must be predicated on identification of a bona fide noise problem.[2] In this case, we do not believe that LAWA

1-1

[1] A4A's members are: Alaska Airlines, Inc., American Airlines, Inc., Atlas Air, Inc., Delta Air Lines, Inc., Federal Express Corporation, Hawaiian Airlines, JetBlue Airways Corp., Southwest Airlines Co., United Continental Holdings, Inc., UPS Airlines, US Airways, Inc.; Air Canada, Inc. is an associate member.

[2] The statutory criteria, which are premised on the need to address a noise problem, expressly include reasonableness. See 49 U.S.C. § 47524(c). Identification of a bona fide noise problem warranting a restriction also is required under the internationally-agreed policy for aircraft noise mitigation, known as the "Balanced Approach to Noise," to which the United States has agreed that it – and its airports with international service – will adhere.

1301 Pennsylvania Ave, NW, Suite 1100, Washington, DC 20004-1707 T: 202.626.4000 E: a4a@airlines.org W: airlines.org

The City's Responses to Comments

The City responds as follows:

The City thanks Airlines for America for its comments.

1-1. Los Angeles International Airport's 14 C.F.R. Part 161 Application for Approval of a Runway Use Restriction (the "Application") demonstrates that the proposed restriction meets each of the ANCA requirements, including the requirement the restriction be reasonable, non-arbitrary and non-discriminatory. See specifically, Section 8.1. As required under 14 C.F.R. § 161.305(e)(2)(i)(A)(1), the Part 161 Application demonstrates that a current and projected noise problem exists – night awakenings caused by non-conforming operations – and that the problem will be relieved by the restriction. See Sections 6.2 and 8.1.1.

has demonstrated a noise problem warranting the proposed mandatory restriction. Moreover, the voluntary restriction already in place has successfully mitigated noise exposure from departures to the east at night, even with an occasional deviation as dictated by operational imperatives. Thus, the proposed mandatory restriction is not warranted and is unreasonable.

1-1

A4A and its members take environmental protection seriously and we have a strong record in this regard. With specific respect to noise mitigation, data from FAA confirm that the number of people exposed to significant levels of aircraft noise in the United States has dropped by over 90 percent since the late 1970s, even as enplanements have tripled. LAWA acknowledges that much has been done to reduce noise exposures in the vicinity of LAX. Indeed, Section 4.2 of the Part 161 details key elements of the current Aircraft Noise Abatement Program (ANAP) in effect at LAX. Further, Section 4.3 details other noise mitigation measures, including the extensive sound insulation program that has provided noise mitigation for thousands of homes with thousands more in the works. While these summary points provide some context, they fail to capture the full extent of the many actions that have been and are being taken by airlines and the airport to address noise exposures, such as the significant additions to the Land Use Mitigation Program (LUMP).[3]

1-2

In light of the noise reduction already achieved and the already extensive noise mitigation initiatives in place at LAX and in surrounding areas, what the proposed restriction would address is a very small number of night operations to the east. The reason the number of operations is small (estimated to be 65 annual operations on average, 0.1% of total nighttime operations in 2013) is because of the success of the voluntary "Over-Ocean Operations Runway Use Program," which, as LAWA acknowledges in its application, has significantly reduced the noise exposure of concern. While appreciating that any particular person experiencing aircraft sound may have a negative experience, the very small number of operations[4] and the estimated number of people who may (or may not) experience resulting noise[5] exposure do not rise to the level warranting a mandatory restriction. Ironically, LAWA cites the success of the voluntary measure as a significant part of the justification for imposing a mandatory one, stating that "because there are so few aircraft that depart east during Over-Ocean and Westerly Operations, and the airport is rarely in easterly flow, communities have come to expect no aircraft departures over their homes during late-night hours." See Part 161 Application, at Section 1.2. That very statement confirms that the voluntary measure has been a success, and such success should not be punished with a mandatory measure. Further, the few aircraft that do depart to the east are doing so because of aircraft certification or regulatory performance limits that dictate such departures.

1-3

[3] A summary of a number of the additions to the LAX LUMP and other mitigation measures is provided in the presentation titled "Land Use Mitigation Program – Los Angeles World Airports – A Status Report," (May 18, 2009), available at http://www.lawa.org/PDF/board_agenda/BOAC%20Presentation%20LUMP%20Program%20Summary%20Final.pdf.

[4] The Part 161 Application confirms that there is only a "small number" of late night flights that do not follow the voluntary measure. See Part 161 Application at Section 6.2. In fact, LAWA acknowledges that these departures "represent an extremely small share of total aircraft operations at LAX." Part 161 Application, Appendix M, Section 3.0, p. 15.

[5] Given the limited time-period for comment, we have not been able to undertake an independent analysis of the noise exposure from any such flights. However, we question the conclusions reached in the LAWA analysis. Given that FAA sometimes directs that night departures should be to the east, the effects attributed to the nights in which westerly/over-ocean departures are occurring but where there may be an occasional easterly departure seem overstated. Also, it is not clear that the analysis took into account the extent to which certain residences that otherwise might be affected have sound insulation or otherwise are slated for such insulation in the future.

1-4

1301 Pennsylvania Ave, NW, Suite 1100, Washington, DC 20004-1707 T: 202.626.4000 E: a4a@airlines.org W: airlines.org

The City's Responses to Comments

1-2. The application takes account of the Aircraft Noise Abatement Program (ANAP) in Section 4.2 and Land Use Mitigation Program (LUMP) in Section 4.3.

1-3. The noise problem is caused by non-conforming easterly departures, which result in night awakenings. See Section 6.2. Non-conforming easterly departures persist despite the voluntary program and the Application demonstrates that relieving this persistent noise problem through the proposed restriction meets the requirements of ANCA.

Aircraft operators have stated that they will comply with the ordinance (see Response 1-5, below), the ordinance will not ban any flights and, as detailed in Sections 7.0-7.3, the impact on air carrier operations and associated costs is expected to be small.

1-4. The analysis of non-conforming operations is provided in Section 6.1 and the analysis of the sleep-awakening impacts of non-conforming operations is provided in Section 6.2. The impact analysis is based on standards developed by the American National Standards Institute and reviewed and recommended by the Federal Interagency Committee on Aviation Noise.

In the analysis of awakenings, the ANSI calculations assumed a Noise Level Reduction (NLR) value of 27.5 dB based on measurement data provided in the 2003 LAX Master Plan. While NLR 27.5 dB may not fully take into account the sound attenuation of those structures treated with sound insulation to reduce aircraft noise, the awakenings analysis showed that the majority of the increased awakenings from non-conforming operations occur outside of the Airport Noise Mitigation Program (ANMP) area. See Section 6.2.1 and Figure 12.

The Proposed Mandatory Restriction Would Be Unduly Burdensome

As acknowledged in the Part 161 Application, there is a high degree of conformance with the voluntary Over-Ocean Operations Runway Use Program. But there are situations when adhering to the voluntary measure is impracticable or otherwise problematic. These are the very situations where a mandatory restriction would pose significant operational problems. Of greatest concern are situations when an operator has made a determination that, based on prevailing winds or other conditions, it is safest to depart to the east (for example, when an operator must request an easterly departure to maximize headwinds to meet minimum takeoff length requirements for a particular aircraft). There are also situations where flight delays will push a departure otherwise scheduled before the restricted hours into the restricted hours and winds or temperature are such that the aircraft cannot take off in the westerly direction at the takeoff weight.

1-5

LAWA takes the position that airlines could reduce payload – cargo or passengers or both – to go forward with a westerly/over-ocean flight where tail winds or other conditions otherwise would call for an easterly operation.[6] See Part 161 Application, Appendix M, at Section 3.0. Under such a situation, LAWA estimates that the airlines would experience losses between $8.4 to $32.1 million, net present value, over the study period. Id. at Section 4.0, p. 23. This analysis, however, fails to take into account the significant ripple effects of off-loading cargo and passengers. First, there are direct economic effects to the airlines – such as potential passenger and customer compensation – for the disruption of the passengers and cargo, which have not been included in the analysis.[7] Second, operational delays to effectuate the offloading can add increased costs in terms of crew and ramp-worker costs. Third, there can be other effects associated with such a delay that can disrupt or result in cancellation of the flight all together, such as crew flight time limitations and slot constraints. Moreover, in addition to the effect on the airlines, the economic effects and other negative effects of such disruptions on passengers and cargo customers also should be considered.[8]

1-6

We also believe that the analysis likely fails to capture certain flights that would be affected by the mandatory restriction. LAWA's analysis suggests, for example, that in 2018 all of the flights that would be affected would be international flights. See Part 161 Application, Appendix M, Section 2.0, p. 3. However, our member airlines have indicated that some of their domestic flights likely would be affected as well.

1-7

LAWA asserts that airlines may be able to mitigate the costs of the proposed restriction by proactively limiting payload to allow for a westerly/over-ocean departure where an easterly departure otherwise is dictated. Such an assertion is not supported by the record and does not make sense. As LAWA itself acknowledges, it is extremely difficult to predict when tailwind and other conditions would dictate an easterly departure when the airport otherwise is in westerly/over-ocean conditions. See Part 161 Application, Appendix M, Section 3.0, p. 15. Thus, the airlines cannot plan for reduced payload on the small handful of flights that might be affected. And to reduce payload on all flights in anticipation that some tiny percentage might be affected would have even greater financial and operational effects.

1-8

[6] Notably, LAWA has concluded that no other option – such as delaying until morning the flights that otherwise would need to take off to the east – is at all tenable, because of the operational and economic impacts. As noted here, offloading cargo and/or passengers also is untenable.

1-9

[7] Denied boarding compensation alone, which is required by the Department of Transportation under 14 C.F.R. § 250.5, is quite costly and can be as high as $1,300.00 per passenger per flight.

[8] Offloading fuel, rather than cargo and/or passengers is not an option for dealing with these concerns. As noted in the Part 161 Application, fuel offloading almost certainly would require extra fuel stops. In addition to increasing fuel costs, such stops also can lead to conflicts with crew flight time limitations and slot constraints.

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The City's Responses to Comments

1-5. Based on interviews with aircraft operators responsible for 85% of the recent (September 2011 to August 2012) non-conforming operations (see Section 7), aircraft operators expect that they will be able to take steps to limit payload on potentially non-conforming flights in order to comply with the proposed restriction while maintaining safe aircraft operations.

1-6. The costs developed for the benefit-cost analysis represent a reasonable estimate of the costs incurred for the type of flights forecast to have non-conforming departures in 2013 and 2018. The costs associated with reducing cargo payload would be substantially lower than estimated if airlines are able to shift cargo to later flights.

1-7. The City based its analysis of non-conforming departures on historic data collected since June 2000. Section 6.1. The data show that it is unlikely that domestic flights would account for a significant number of future non-conforming operations.

1-8. Airlines could mitigate their potential costs with cargo load planning that allows containers with less time sensitive cargo to be off-loaded with minimum disruption to other shipments. See Section 7.3.

1-9. Off-loading cargo and/or passengers involves costs, as discussed in Sections 7.1-7.3, but is not untenable.

LAWA also attempts to assert that there may be fuel and carbon dioxide savings associated with forcing aircraft that otherwise would depart to the east into a westerly/over-ocean departure. This simplistic assertion fails to capture the effects of having to move offloaded passengers and cargo onto other flights and the potential fuel burn implications of delaying an aircraft for such offloading.[9]

1-10

Surprisingly, LAWA does not even attempt to include reasonable exceptions in the proposed restriction for situations that create untenable operations or unreasonable hardship on the airlines and/or the airlines' passengers and customers. In fact, the only exemptions that LAWA has proposed to the mandatory restriction against easterly departures when the airport is in westerly/over-ocean operations would be available only to non-commercial operations or in an extreme "bona fide medical or life-saving emergency." These exemptions do nothing to reduce the significant economic and operational effects the mandatory restriction would have on commercial aircraft operations, adding to the unreasonableness of the proposal.

1-11

In light of the above, even assuming offloading cargo and/or passengers was practicable, LAWA has severely underestimated the negative effects and costs of the proposed restriction. But, in light of the difficulties associated with offloading cargo and/or passengers and the fact that proactive planning for reduced payload is impossible and/or impracticable, to go forward with the restriction could very well mean that the flights at issue would have to be cut from the schedule all together and flights near the restricted time window that might run into the restriction in light of a delay could also become untenable. Under any scenario, the proposed mandatory restriction would be unduly burdensome on the airlines and impose an undue and unreasonable burden on interstate commerce.

1-12

The Proposed Enforcement Provisions for Non-Compliance with the Restriction Are Unworkable and Overly Punitive

While the proposed mandatory restriction does not make sense on its own merit, the proposed enforcement provisions also render it fatally flawed in at least two respects.[10] First, by stating that "any person" deemed to "counsel, aid, assist, or abet" in the operation of an aircraft in violation of the restriction would be "subject to the same penalty provisions" as the "Operator," the proposal would create individual and expansive liability that is not well defined and not appropriate. Not only would this stray from corporate liability into personal liability (presumably not only the company would be subject to liability, as might be expected for violation of a noise-based operating restriction), but any worker involved or deemed to be involved – from the pilot, to the ramp worker, to the dispatcher and so on and so on – could be subject to this expansive provision. This individual liability is unreasonably broad, unworkable and overly aggressive in general, but even more so in light of the fact that no exceptions to the restriction would be available for commercial operations.

1-13

Second, the proposal that an airline would be banned from night operations entirely for three years if it had three non-compliant operations within three years is excessive and overly punitive. Again, given that there are no exceptions available for commercial operations, the restriction imposes a strict liability standard. To then turn this into a total operating ban if there are three incidents of non-compliance, regardless of the circumstances, is overly punitive. Simply put, such a penalty would itself be an inappropriate restriction on air travel and inconsistent with ANCA.

1-14

[9] Further, it is ironic that LAWA attempts to claim this as a potential "benefit" to the airlines, as the normal LAX noise abatement flight tracks actually add fuel burn to airline operations.

[10] The aggressive nature of the enforcement provisions that LAWA seeks is frankly shocking; we are not aware of similarly punitive enforcement provisions for such a noise restriction either in the U.S. or internationally.

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The City's Responses to Comments

1-10. Trans-Pacific flights save fuel and emit less carbon dioxide by departing to the west. At reduced takeoff weights, their time-to-climb to cruising altitude is faster and their total flight times are shorter than the comparable heavier-weight takeoff to the east with its slow-climbing turn back over the ocean. See Section 7.2 of the Part 161 Application.

1-11. The Application demonstrates that the proposed restriction will not create untenable operations or unreasonable hardship, particularly in light of the impact that late night east departures have on low income and minority neighborhoods. Further, it is reasonable to assume that, if the proposed restriction were in place with additional exemptions suggested by A4A, the exception would swallow the rule and the proposed restriction would have no effect.

1-12. Based on information provided by the airlines, there is no reason to expect that any aircraft operations will be discontinued as a result of the proposed restriction due to the availability of more cost-effective measures such as off-loading weight. See Section 7.3.

1-13. While the City does not concur that individual liability is per se unreasonable and reserves the right to include such liability in the future (subject to appropriate FAA approval), the Proposed Ordinance has been revised to address the commenter's concern.

1-14. While the City does not concur that restricting operations of pervasive violators of a noise restriction is barred by ANCA and reserves the right to include such restrictions in the future if the proposed enforcement penalties prove ineffective (subject to appropriate FAA approval), the Proposed Ordinance has been revised to address the commenter's concern.

Mr. Scott Tatro
December 17, 2012
Page 5

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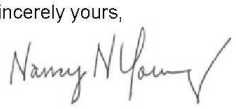
In light of the above, we urge LAWA to decline to go forward with the proposed mandatory operating restriction. Thank you for your consideration.

Sincerely yours,



Nancy N. Young
Vice President, Environmental Affairs

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The City's Responses to Comments

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FedEx Express

February 17, 2012

Submitted via email to laxpart161@lawa.org

Mr. Scott Tatro
Los Angeles World Airports
1 World Way, P.O. Box 92216
Los Angeles, CA 90009-2216

RE: Comments on the 14 CFR Part 161 Application for Approval of a Runway Use Restriction at the Los Angeles International Airport

Dear Mr. Tatro:

Federal Express Corporation (FedEx Express) is submitting the following comments on the application of the Los Angeles World Airports (LAWA) for approval of a runway use restriction at the Los Angeles International Airport (LAX). These comments are based on the application prepared pursuant to Federal Aviation Regulation Part 161 and the Airport Noise and Capacity Act of 1990 (ANCA) and the supporting analysis prepared by LAWA's consultants.

FedEx Express fully supports and incorporates herein the comments submitted in opposition to the application by Airlines for America (A4A), and provides our additional comments below. 2-1

The LAWA application seeks to make mandatory a voluntary restriction on easterly departures from midnight – 0630 during Over-Ocean and Westerly operations modes, when tailwinds from the east are below 10 knots. The cost analysis of the proposed restriction is based upon a limited projection of future "non-conforming" departures based on a data set of such easterly departures compiled by LAX over the past 10 years. The benefits analysis of the proposed restriction is based largely upon an estimate of residents who may be awakened by such easterly departures as a result of the overwhelming success of the current voluntary runway use program, which has resulted in communities having come "to expect no aircraft departures over their homes during the late night hours." (LAWA application, Section 1.2). 2-2

The LAWA application states that over the past 10 years, the number of non-conforming departures has averaged 65 per year, occurring on average over 30 nights per year. Based upon this information, the LAWA application makes a projection of 65 affected departures in 2013 and 2018. This projection includes only 3 all-cargo operators—all foreign carriers operating trans-Pacific routes—and no domestic flights are included in the projection at all. (LAWA application, Table 17) The supporting Use Restriction Cost Analyses in Appendix M of the LAWA application is wholly based upon this limited projection. The full list of the "non- 2-3

The City's Responses to Comments

The City responds as follows:

The City thanks FedEx for its comments.

2-1. Please refer to the City's responses to the comments by Airlines for America.

2-2. The noise problem is caused by non-conforming easterly departures, which result in night awakenings. See Section 6.2. Non-conforming easterly departures persist despite the voluntary program and the Application demonstrates that relieving this persistent noise problem through the proposed restriction meets the requirements of ANCA.

2-3. The forecast of nonconforming departures includes no domestic flights because they are exceptionally rare. For example, LAWA's records from monitoring non-conforming departures indicate FedEx has itself had only one non-conforming departure since 2004.

conforming" departures compiled since 2001 is not included in the LAWA application, and FedEx Express does not track directional LAX departure information in our records.

2-3

While FedEx Express is not included in the limited projection of affected departures, our internal analysis indicates a potentially significant impact resulting from the proposed restriction. Of note, the FedEx Express routes most likely impacted by the proposed restriction are domestic MD-10 departures to Newark (EWR) and Indianapolis (IND), neither of which would turn back to the west over the noise-sensitive communities described in the LAWA application. As indicated in the attached "MD-10-10" spreadsheet, these daily flights are impacted as a result of the weight-based runway performance thresholds that decrease with tailwinds below 10 knots. Our analysis shows payload weight reduction requirements between 800lbs and 11,000lbs resulting from the lack of availability of an easterly departure based on historical weight data for these flights. As indicated in the attached "AM east wind" chart, our meteorological data shows tailwinds from the east from 3 – 10 knots an average of 34% of the time between 0100 and 0700 at LAX over the past year, bringing these conditions into play during a substantial amount of nighttime periods. As an aside, we note that such winds occur much less frequently during the summer months of July and August; the LAWA application seeks to attribute a smaller number of "non-conforming" departures during these months to planned reductions in payload. (LAWA application, Section 6.1)

2-4

As indicated in the Use Restriction Cost Analysis in the LAWA application, there are multiple ways that a carrier might accomplish and deal with such a payload weight reduction requirement. FedEx Express, however, offers a money-back guarantee to its customers and our reputation is greatly dependent on our timely delivery performance, so simply delaying delivery is not an option. The operation of additional flights to transport the reduced payload would involve significant additional costs, including emissions implications.

While the uncertainty of the conditions that would bring the restriction into play makes it difficult to calculate a cost impact with precision, we believe that the analysis in the LAWA application has unduly limited the projection of impacted flights and has underestimated the cost impacts. We also challenge the justification for the proposed restriction, as being based upon the clear success of the current voluntary runway use program. Accordingly, we find that the proposed restriction would be unduly burdensome on the airlines and impose an undue burden on interstate commerce.

2-5

Sincerely,

FEDEX EXPRESS

David M. Jensen
Lead Counsel
Regulatory Affairs

The City's Responses to Comments

2-4. The FedEx analysis of potential MD-10 payload penalties is based on an unrealistically high airport temperature and as a result substantially overestimates the payload reduction required when taking off to the west with a low to moderate tailwind. This is supported by the fact that FedEx has had only one non-conforming departure since 2004. If FedEx expects that it will increase its non-conforming easterly departures, it will contribute to worsening the noise problem since all aircraft taking off to the east pass directly over noise sensitive communities. Restricting such flights will increase the benefits of the proposed restriction.

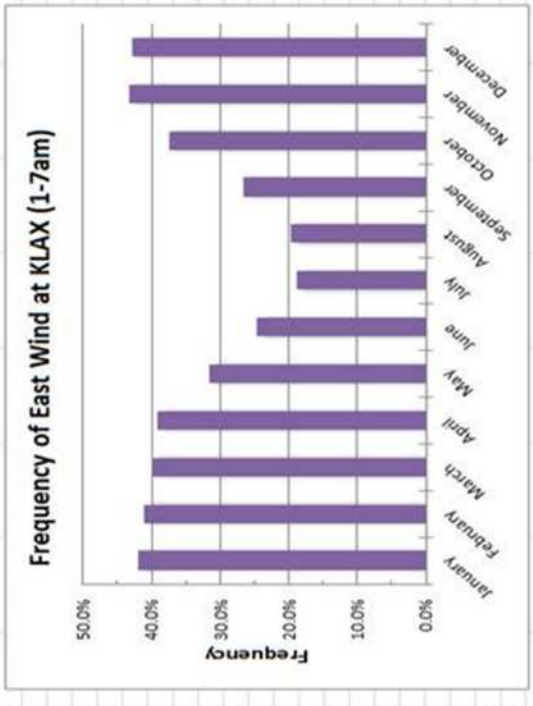
2-5. Given that FedEx has had one non-conforming flight over the last eight years, the suggestion that the Application underestimates costs because the proposed restriction could require the operation of additional flights to meet timely delivery requirements or result in significant costs due to money-back guarantees is overstated and fails to consider the benefits that would result from the restriction.

Attachment 1 to FedEx Letter

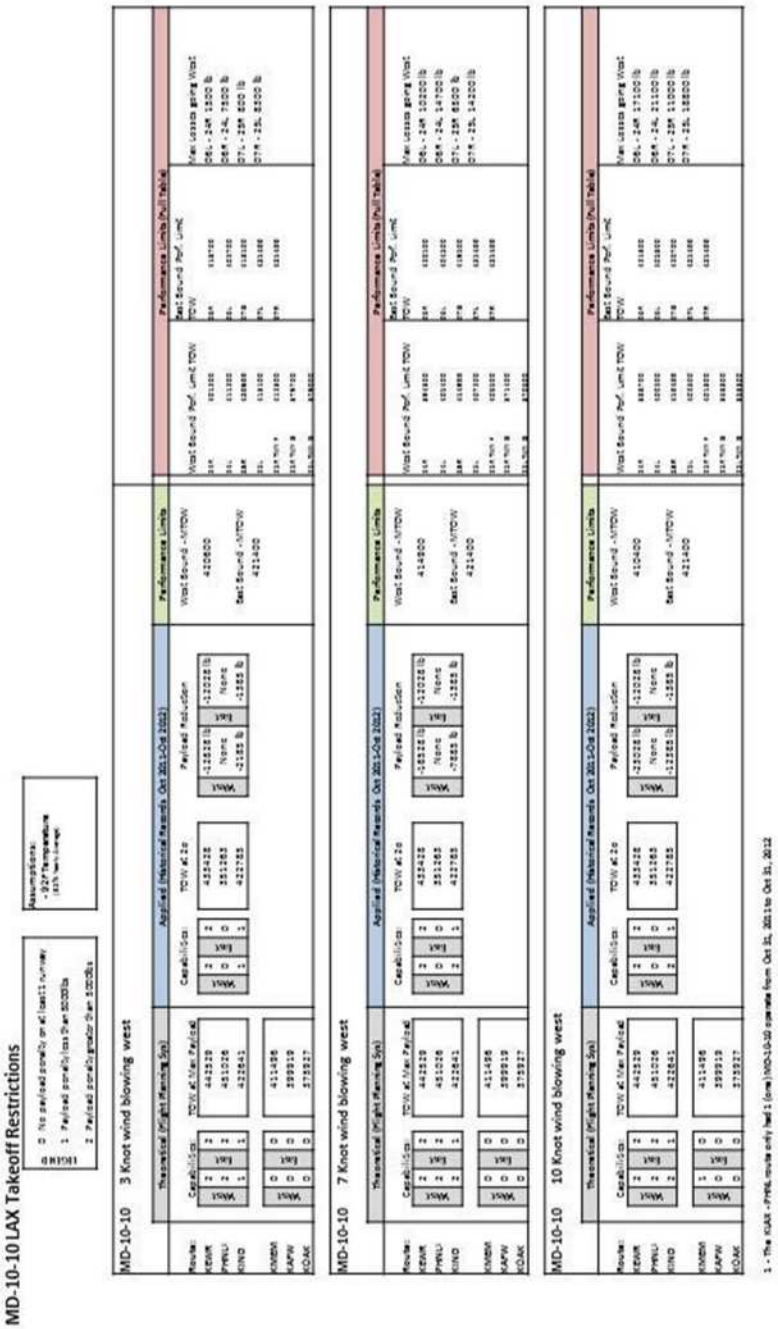
KLAX - Frequency of light east wind -- 1-7am LST by month by hour

	January	February	March	April	May	June	July	August	September	October	November	December	Annual
0100 LST	38.7%	38.7%	35.3%	32.2%	23.5%	15.2%	10.7%	12.5%	21.5%	34.6%	39.6%	39.2%	**28.5%**
0400 LST	42.4%	42.9%	39.8%	41.0%	33.3%	28.9%	21.1%	22.0%	29.5%	38.4%	44.5%	43.1%	**35.6%**
0700 LST	44.6%	41.5%	44.7%	44.3%	37.9%	29.8%	25.0%	24.5%	28.9%	39.5%	45.9%	46.5%	**37.8%**
Average	**41.9%**	**41.0%**	**39.9%**	**39.2%**	**31.6%**	**24.6%**	**18.9%**	**19.7%**	**26.6%**	**37.5%**	**43.3%**	**42.9%**	**33.9%**

includes wind from ENE, E, and ESE with speed of 1-10 kts
frequency is percentage of hourly observations with desired conditions



Attachment 2 to FedEx Letter



BEFORE THE
LOS ANGELES WORLD AIRPORTS
LOS ANGELES, CALIFORNIA

Los Angeles International Airport Notice of Proposed Airport Use Restriction and Release of Draft Part 161 Application

COMMENTS OF THE CARGO AIRLINE ASSOCIATION

Introduction:

On November 1, 2012, Los Angeles World Airports (LAWA) issued its proposed airport use restriction that would prohibit the easterly departure of all aircraft (with limited exceptions) at Los Angeles International Airport (LAX) during the hours during the hours of 12 midnight to 6:30 a.m. when LAX is operating in Over-Ocean Operations or when the airport remains in Westerly Operations during these hours. Comments on this proposed restriction were requested by December 17, 2012, with an intent to submit the restriction to the Federal Aviation Administration (FAA) by the end of January 2013.

The Cargo Airline Association ("the Association") is the nationwide trade organization representing the interests of United States all-cargo air carriers.[1] Our members routinely operate at LAX and would potentially be adversely affected by the proposed restriction. Accordingly, the following Comments are submitted for consideration by LAWA.

[1] Airline member of the Association are ABX Air, Atlas Air, Capital Cargo, FedEx Express, Kalitta Air and UPS Airlines.

The City's Responses to Comments

The City responds as follows:

The City thanks the Cargo Airlines Association for its comments.

The Proposed Restriction:

Stating that it has found a significant nighttime noise problem in the operation of easterly departures at LAX when the airport is operating in either Over-Ocean or Westerly Operation configurations, LAWA has proposed an outright ban of such operations between the hours of Midnight and 6:30 a.m. At the present time, this restriction is on a voluntary basis.

This restriction is being proposed in spite of the fact that LAWA candidly admits that "(o)ver the past ten years, the number of non-conforming departures has averaged 65 per year, or 0.1% of the nearly 57,000 total nighttime (defined as 10:00 p.m. to 7:00 a.m.) departures projected to occur at LAX in 2013."[2] In addition, LAWA goes on to point out that such non-conforming operations historically account for only 0.2% of the flights operated between midnight and 6:30 a.m. Moreover, such non-conforming operations are not very frequent, occurring, on average, on less than 10% of days on an annual basis.[3]

The operational need for such non-conforming flights when tailwinds are between 0 and 10 knots is clearly recognized by LAWA. As stated in the Draft Part 161 Study:

> It is when the tailwind component is between 0 and 10 knots that pilots of large, heavy aircraft request non-conforming easterly departures to maximize their headwind component and meet minimum takeoff length requirements for the weight of the aircraft. Historically, the operators requesting to depart contrary to current flow conditions are long-haul passenger and cargo carriers with heavily loaded aircraft heading to destinations such as Sydney, Singapore, Tokyo, and Beijing.[4]

In other words, LAWA recognizes that there is a valid operational need for the non-conforming operations; the requests are not made for non-operational reasons. At the

3-1

[2] Draft Part 161 Study, p. 4.
[3] Draft Part 161 Study, p. 4.
[4] Draft Part 161 Study, p. 4.

The City's Responses to Comments

3-1. The quoted excerpt from the Application does not recognize a need for continued non-conforming operations since the operational concerns can be addressed by aircraft operators.

same time, LAWA argues that imposition of the proposed restriction "…would not ban any flights or cause air carriers to cancel service or divert flights to alternate airports".[5] However, it is clear that, in order to comply with the restriction, operational "adjustments" will be necessary. As noted by LAWA, such adjustments will likely include reduced payloads and/or delayed flights.

Position of the Cargo Airline Association:

Current airport noise policy is directly traceable to the Airport Noise and Capacity Act of 1990 (ANCA) which was subsequently implemented by the FAA in Part 161 of its Regulations. Both ANCA and Part 161 specifically require that, for a proposed regulation to be approved, it must be "reasonable". See, 49 USC 47524(c) and 14 CFR 161.305. Implicit in any "reasonable standard" is that the proposed restriction must address a significant noise problem. **The Cargo Airline Association respectfully submits that LAWA has not demonstrated a significant noise problem and the proposed mandatory operating restriction at LAX is both unnecessary and unreasonable**.

3-2

As LAWA itself notes, the operations at issue comprise less than 0.2 % of operations between midnight and 6:30 a.m. and occur less than 10% of the time. The only conclusions that can be drawn from these data are (1) that there is **not** a noise problem that warrants a blanket ban on eastbound operations when operationally necessary and (2) that the existing voluntary program to restrict nighttime noise from easterly operations when operationally feasible is working very well. In fact, what LAWA appears to be arguing is that the voluntary program is working so well that local residents have become used to a quiet nighttime environment, thereby increasing their

3-3

[5] Draft part 161 Study, p. iii.

The City's Responses to Comments

3-2. The Application demonstrates that a current and projected noise problem (night awakenings) exists that will be relieved by the restriction, as required under 14 C.F.R. § 161.305(e)(2)(i)(A)(1). See e.g. Sections 1.3 and Section 6.2. Section 8.1 provides evidence that the restriction is reasonable, non-arbitrary and non-discriminatory. The restriction merely requires that all aircraft operations conform their departures to prevailing flows at LAX.

3-3. The Application does not state or argue that the low income and minority neighborhoods east of LAX have become accustomed to quiet and thus are more sensitive to non-conforming easterly departures. The analysis reported in the Application is based on the application of the ANSI sleep disturbance standard. The additional mitigation that is achieved by turning the voluntary measure into a restrictive one allows these Environmental Justice neighborhoods to experience more uninterrupted nights of sleep than they would otherwise, and at reasonable cost.

In addition, LAWA is not proposing a blanket ban on easterly departures between the hours of midnight and 6:30 a.m. The LAX proposed restriction is intended to restrict easterly departures only during Westerly Operations and Over-Ocean Operations, but does not propose restricting easterly departures when the FAA has directed that LAX operate in Easterly Operations.

sensitivity to the extremely small number of non-conforming flights. That argument is, in itself, a concession that the magnitude of any disturbance is extremely small and cannot rise to the level of warranting an outright ban of certain, operationally required, flights.

While this proposed restriction is problematic for all industry members operating "heavy" equipment, it is especially troublesome for all-cargo operators. LAWA believes that "(s)ome carriers are likely to limit their payloads or occasionally delay individual flights until more favorable wind conditions exists, but the impacts on air carrier operations and associated costs are expected to be small."[6] This belief is wholly at odds with an all-cargo business model that depends on guaranteed expedited time-definite service. Contrary to LAWA's assertions, off-loading cargo and/or delaying flights which could operate on time is not a viable option – especially where, as here, the environmental benefits are *de minimis*.

3-4

Moreover, while the Draft Part 161 Study implies that potentially affected residents enjoy virtually total nighttime quiet except when easterly operations are conducted when LAX is operating in the Over-Ocean or Westerly operational mode, that is clearly not the case. As the Draft Part 161 Study points out, from April 1, 2010 to March 31, 2011, 540 easterly departures occurred between midnight and 6:30 a.m., only 56 of which were non-conforming. There are, therefore, almost ten times as many conforming easterly departure flights as non-conforming flights. Accordingly, the "noise delta" that should be considered is not between zero (no noise) and 65 flights, but rather between approximately 484 conforming easterly departure flights and an additional 56

3-5

[6] Draft Part 161 Study, p. 91.

The City's Responses to Comments

3-4. There are viable options to non-conforming easterly departures. See City Responses 1-5, 1-9 and 1-12 above. As indicated in Section 7.5 the environmental benefits (both in terms of reduced awakenings and reduced fuel burn and greenhouse gas emissions) are not *de minimus*.

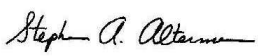
3-5. By definition, there cannot be conforming and non-conforming easterly departures at the same time. Accordingly, when non-conforming easterly departures occur, there are no conforming easterly departures that could be causing the same sleep awakenings.

non-conforming flights. Put somewhat differently, the increase in community noise for those allegedly affected is not nearly as dramatic as LAWA has alleged.

In view of these facts, the Cargo Airline Association respectfully urges LAWA **not** to implement the proposed mandatory nighttime restriction on easterly departures when LAX is operating in an Over-Ocean or Westerly Operations mode. Indeed, when looking at the data presented, the only conclusion that can be reached is that the proposed restriction is a solution desperately in search of a problem. The facts of record clearly indicate that, contrary to LAWA's assertions, the existing voluntary program is working very well, with very few operationally required non-conforming flights each year. To implement the proposed restriction is therefore unreasonable and not in the public interest.

3-6

Respectfully submitted,



Stephen A. Alterman
President
Cargo Airline Association
1620 L Street, NW
Suite 610
Washington, DC 20036
202-293-1030
salterman@cargoair.org

December 17, 2012

5

The City's Responses to Comments

3-6. Non-conforming easterly departures persist despite the efforts to reduce the number of non-conforming operations through a variety of volunteer programs. These non-conforming departures create a noise problem due to night awakenings that the proposed restriction will relieve at reasonable cost.

From: Yasuo Nishiyama
To: NOISE MANAGEMENT - LAXPART161
Subject: Re: Proposed Eastery Departure restriction of all aircraft
Date: Tuesday, December 04, 2012 10:15:28 PM

To:Dear Mr.Scott Tatro/Los Angeles World Airports,Environmental Services Division.
From: Yasuo Nishiyama/Deputy General Manager Flight Operations Standard/Nippon Cargo Airlines

Dear Mr.Tatro.

We have learned the proposed Eastery Departure restriction of all aircraft is under discussion and LAWA will submit part161 document to FAA on 13Jan next year for the accepting the application.

We Nippon Cargo Airlines are one of the operator on the list of table17 "Projected Aircraft Departures Affected in 2013 and 2018,by Airline,Destination ,Cargo or Passenger Flight Type,and Aircraft Type" in the "Benefit-Cost Analysis of Runway Use Restriction" draft dated October 2012.

Needless to say,we understand the importance of the noise abatement and we have been trying to be a good neighbour as much as possible.
On the other hand,Los Angeles International Aiport is one of the most important airport in the world for the air transportation companies regardless of passsenger or cargo and an essensial airport for transpacific routes.
Due to the nature of the long haul flight,the take off weight is very heavy and the aircraft needs higher performance available. In the eastery wind condition,the aircraft needs to take off to the east so that it can avoid tail wind which will decrease the performance.
We believe the facts above have been already taken into consideration before the proposal had been done.

However we would appreciate if you could reconsider the factor mentioned above and grant some waiver
or exceptions in case of unavoidable wind conditions possiblely few times per year. 4-1

In addition,we have heard LAX will have approximately 3months of runway 07L/25R closure due to construction
work in next summer. The runway is the longest one and it is going to be another big impact for cargo airlines like us. If runway 07L/25R closure and the eastery departure restriction in effect happen at the same time,it would be unreasonable burden to the air transportation companies like us. 4-2

Please kindly take this situation into account and consider to set exceptional/waiver period during the construction of runway07L/25R to mitigate the impact at least. 4-3

Very best regards

****
Yasuo Nishiyama
Deputy General Manager
Flight Operations Standard
Nippon Cargo Airlines
phone:+81-476-32-9843
fax: +81-476-32-9776
e-mail:yasuo.nishiyama@nca.aero
****

The City's Responses to Comments

The City responds as follows:

The City thanks Nippon Cargo Airlines for its comments.

4-1. The voluntary program in existence today currently provides for the exceptions requested, which has resulted in the unimpeded 65 annual average non-conforming easterly departures provided in the Part 161 Application. Thus, these exceptions would eliminate the effectiveness and undermine the purpose of the proposed restriction.

4-2. The City does not expect the restriction to be in effect by the summer of 2013.

4-3. Please refer to response to 4-2.

BuchalterNemer
A Professional Law Corporation

18400 VON KARMAN AVENUE, SUITE 800 IRVINE, CALIFORNIA 92612-0514
TELEPHONE (949) 760-1121 / FAX (949) 720-0182

Direct Dial Number: (949) 224-6292
Direct Facsimile Number: (949) 224-6480
E-Mail Address: *blichman@buchalter.com*

December 14, 2012

VIA E-MAIL (LAXPART161@LAWA.ORG)

Scott Tatro
Los Angeles World Airports
1 World Way, P.O. Box 92216
Los Angeles, CA 90009-2216

Re: Los Angeles International Airport - 14 C.F.R. Part 161 Application for Approval of a Runway Use Restriction - October 2012

Dear Scott:

As you know, we represent the City of Inglewood, California ("Inglewood"), signator on the "Stipulated Settlement" with the City of Los Angeles signed February 16, 2006, resolving the challenge by Inglewood and four co-Petitioners[1] to the approval by the City of Los Angeles ("City") of the LAX Master Plan Program. The following constitute Inglewood's comments on the "Los Angeles International Airport 14 C.F.R. Part 161 Application for Approval of a Runway Use Restriction," Draft of October 2012 ("Draft Part 161).

An important provision of the Stipulated Settlement to Inglewood is its Appendix A, § A, subsection 10, "Part 161 Noise Study." In that section, City commits to "seek FAA approval of various penalties that can be imposed on airlines whose flights violate nighttime Over-Ocean policies and procedures." [Emphasis added.] The Draft Part 161 then parses from the full complement of "Over-Ocean policies and procedures" "nonconforming" departures to the east during the hours of 12:00 midnight to 6:30 a.m., thereby omitting a critical aspect of the "Over-Ocean policies and procedures" which have been in effect on a voluntary basis for decades, but which the Stipulated Settlement now requires LAWA attempt to make mandatory in their entirety – that is, Over-Ocean arrivals during the same period.

While that section of the Stipulated Settlement also specifically refers to "restrictions on departures," it is Inglewood's position that the clear intent of the parties to the Stipulated Settlement; the Board of Airport Commissioners ("BOAC"), in signing the original 1972

[1] Co-Petitioners include the Cities of Culver City and El Segundo, the County of Los Angeles and Alliance for a Regional Solution to Airport Congestion ("ARSAC").

The City's Responses to Comments

The City responds as follows:

The City thanks Ms. Barbara Lichman for her comments on behalf of the City of Inglewood. The comments raise issues arising under California state law concerning the scope of LAWA's obligations to seek approval of Part 161 restrictions. The comments do not question the analysis in the Application and whether it complies with ANCA. Accordingly, no response is necessary for FAA's evaluation of the application.

Resolution establishing "Over-Ocean procedures;" the California Department of Transportation, Aviation Division ("Caltrans"), in granting the 2011 Variance from the California Airport Noise Standards, 21 C.C.R. § 5000, *et seq.*, at least partially on the basis of the Over-Ocean procedure mitigation measure; and LAWA itself, in its continuing "aircraft noise abatement and operating procedures and restrictions," September 2010 (*see* Draft Part 161, § 1.1, fn. 15) was to include in the Draft Part 161 Application not only a proscription on occasional, "nonconforming" departures to the east, but a mandate that "Over-Ocean procedures," as a whole, including both arrivals and departures, be made enforceable.

I. THE SCOPE OF THE DRAFT PART 161 APPLICATION IS UNNECESSARILY LIMITED

At its fundament, the Draft Part 161 Application appears to misconstrue the purpose of 14 C.F.R. Part 161 ("Part 161"), *i.e.*, to make mandatory existing voluntary restrictions, not to merely punish deviations from those existing voluntary restrictions. In this case, a Part 161 Application to make mandatory the full extent of the "Over-Ocean procedures" that have been in existence as a unit for 40 years would not only serve the positive purpose of protecting communities to the east of the airport, but would also per se penalize deviations from both mandated arrivals and departures to the east.

Moreover, to ignore an arrival procedure integral to the "Over-Ocean procedures" is to abrogate the scope of the restriction that has been extant for 40 years. The original 1972 resolution establishing the Over-Ocean procedures, Resolution 7467 of the BOAC, requires that "all aircraft approaching Los Angeles International Airport shall approach LAIA from west to east" between the hours of 11:00 p.m. - 6:00 a.m."[2] [Emphasis added.]

Subsequently, beginning in about 1990, Caltrans incorporated the Over-Ocean procedures as mitigation measures in the variances from State noise standards granted to LAX as a noise problem airport. Under the most recent Variance of February, 2011 "LAX is to continue in full force and effect the implementation and enforcement of . . . Over-Ocean operations between 0000 and 0630 [24 hour time designations for 12:00 midnight to 6:30 a.m.], weather and operational conditions permitting." Finally, the Draft Part 161 Application concedes that the most recent LAX aircraft noise abatement operating procedures and restrictions continue to specify "arrival and departure procedures for . . . Over-Ocean operations." Draft Part 161 Application, § 1.1, p. 3.

Despite these clearly inclusive mandates, and the requirement for enforcement of Over-Ocean procedures set forth in the 2011 Variance, the Draft Part 161 Application addresses only one-half the "Over-Ocean procedures," that one-half governing departures. This is particularly

[2] Those hours were subsequently reduced in 1974 by Amended Resolution 8372 to 12:00 midnight – 6:30 a.m., which also established a minimum ceiling, visibility and tailwind components for Over-Ocean arrivals. Draft Part 161 Application, § 1.1, p. 2.

The City's Responses to Comments

surprising as departures to the west, into the prevailing wind, are the norm at LAX, both day and night, and, thus, are more easily complied with, while arrivals from the west, with prevailing wind, are an anomaly, and, thus, in need of more stringent policing to prevent infractions.

In short, the Draft Part 161 Application, as currently applicable to only a portion of the full "Over-Ocean procedures," fails to satisfy either the clear intent of the Stipulated Settlement or the commitment to the State of California for noise mitigation as set forth in the currently applicable Variance.

II. THE OMISSION OF OVER-OCEAN ARRIVALS FROM THE DRAFT PART 161 HAS THE POTENTIAL TO SERIOUSLY DISADVANTAGE COMMUNITIES TO THE EAST OF THE AIRPORT

The Draft Part 161 Application, §§ 5 and 6, reflect a substantial number of nighttime arrivals as well as departures.[3] Of these, § 6, Table 7 indicates a total of 44 arrivals occurred on the North Runway Complex (Runways 6 and 24) between the hours of 12:00 midnight and 6:30 a.m. Despite this substantial proportion of nighttime arrivals, the Draft Part 161 Application fails to fully evaluate the impacts of arrivals from the east, currently precluded only by the voluntary compliance of the carriers.

Needless to say, this omission gives rise to the specter of greatly increased noise impacts over Inglewood and other communities east of the airport from the absence of, or failure to enforce, restrictions on Over-Ocean arrivals. As the application correctly asserts with respect to "nonconforming" departures to the east, "many residents are estimated to be awakened from sleep," Draft Part 161 Application, § 1.2, p. 4. This statement is even more true with respect to the arrivals from the east, because of their lower altitude, if not specifically prohibited.

Moreover, because night operations are weighted at 10 times the level of daytime operations in the calculation of cumulative noise impacts, any deviation from "Over-Ocean procedures" for arrivals, if they are not made mandatory, could significantly increase the noise contours to the east, thus prejudicing the airport as well as the communities around it.

For all the above reasons, Inglewood strongly urges LAWA to increase the scope of the Draft Part 161 Application to encompass "standard" Over-Ocean arrivals during the hours of 12:00 midnight to 6:30 a.m., thereby ensuring the integrity of the current noise variance, as well as compliance with the Stipulated Settlement. Inglewood appreciates this opportunity to

[3] Section 5, Table 4 shows 114.215 night arrivals in 2013, and Table 6 projects 121.524 night arrivals in 2018.

The City's Responses to Comments

comment and looks forward to the enlargement of the scope of the Draft Part 161 Application to include the full complement of "Over-Ocean procedures" so critical to the welfare of the citizens of Inglewood.

Sincerely,

BUCHALTER NEMER
A Professional Corporation

By Barbara Lichman

Barbara Lichman

BN 12963383v1

The City's Responses to Comments

From:	Richard Cavalier
To:	NOISE MANAGEMENT - LAXPART161
Cc:	"laura_schiller@boxer.senate.gov"; "chris_thompson@feinstein.senate.gov"; "mikael.moore@mail.house.gov"; "samahndi.cunningham@sen.ca.gov"; "assemblymember.bradford@assembly.ca.gov"; "executiveoffice@bos.lacounty.gov"; "mmcdade@cityofinglewood.org"; "michaelstevens@cityofinglewood.org"; "councilofficedistrict2@cityofinglewood.org"; "emorales@cityofinglewood.org"; "r.franklin@cityofinglewood.org"; "allcouncilandclerks@elsegundo.org"
Subject:	Toward Sanity at LAX
Date:	Saturday, November 03, 2012 3:23:33 PM

Scott Tatro,

LAWA's recent "Runway Use Restriction" notice mentions restrictions of some east-bound take-offs, but that seems to be more a cosmetic than corrective restriction. A better solution of the residents' problems would require that all arrivals and departures take place in the "Westerly operation" mode. Yes, that would reduce the number of flight that could be handled in any given period. Yes, that would make the airlines unhappy. Yes, that would recognize that the grandfather protections at LAX cover propeller planes for a much smaller runway footprint. Yes, the residents of the area are increasingly resentful of growing demands on their mental and physical health in order to maximize profits for airlines beancounters who ignore the human costs.

I am enclosing a (reconstituted) e-mail sent o/a end Sept/early October, 2012 to all CA elected officials, Washington to local. Be aware that the reign of the airlines' beancounters is coming to an end. The limited grandfathering of currently-oversized LAX is done with the mistaken belief that nearby residents have no rights, legal or elective. This should not become a test case.

It would be in the best interests of LAWA, residents and businesses in contiguous area, and even airlines' own service levels to return to human-tolerance levels of aircraft size, noise, and pollution. I remind you that the scheduled meeting of November 1,'12 for residents was large and angry. I earnestly suggest that you call these items to the attention of LAWA executives while there's still time to avoid a major confrontation.

By copy, I am reminding all elected officials that this problem is major and needs their vigorous individual and collective support on behalf of residents, taxpayers, and voters.

Richard Cavalier,
Inglewood
***

*****
PRIOR:

Honorable Elected Official(s): [transmissions to multiple elected officials & press]

This is an augmentation of my two-minute recorded comment at a public hearing on the Specific Plan Amendment Study (SPAS; at Proud Bird, Westwood; 8/25/12). The problem requires firm support from various politicians who represent residents of areas immediately surrounding LAX; otherwise, residents of contiguous areas are voiceless.

Key problem, simplified:

No one is in charge! The mayor of the central city controls construction at the airport but events affect very few of his own voters; a past congress has effectively assigned control over air traffic to the federal government and has effectively ceded control to the airlines' bean-counters; tethered to airlines, LAWA cannot provide neutral counsel. Meanwhile non-central-city residents have no assigned voice in the decibel derby. . .unless through non-L.A. elected officials. That's neither democratic nor tolerable.

Issues addressed at the hearing:

Re: Construction:

Re: Modernization--yes: some aspects of LAX are uncomfortable; and improvements are a service to all travelers. Current passenger surveys list LAX as being among the nation's most uncomfortable airports.

Re: Relocation of Runway 6L/24R to the north--NO! SPAS Alternative #2 (modernization plus extended runway aprons to reduce turn-around time; no extension or northward movement of key runway) seems to serve both improvement purposes adequately, without making significant new encroachments on the affected public.

Northward movement of that runway (besides extending abuses) will require additional residential

The City's Responses to Comments

The City responds as follows:

The City thanks Mr. Richard Cavalier, a resident in the City of Inglewood, for his comments.

soundproofing. . .while more than 3,000 residential units still require initial service, after years of slow delivery.

It's important to recognize that any airport expansion is a response to the demands of airlines' accountants, who have determined that larger planes and expanded airports are the answer to their financial problems.

However, despite my travels in more than forty countries, I have never met a traveler who insisted on flying in larger cattle-cars with earlier advance check-ins, slower loading, more-frantic unloading, and slower baggage claim.. The public has already ceased to enjoy the transport element of travel. Air travel today is punitive. Special lounges for frequent travelers proves the point.

If larger planes permit lower fares, then people who buy 'low fares' rather than 'premium service' should not expect--and certainly not demand--to land at the airport nearest the metro center. People who choose to stay at a B&B rather than in a major hotel do not expect the B&B to be across the street from a downtown hotel.

The finest of the smaller jet planes (the French Caravelle, under 80 seats) was quick loading/unloading, quiet, smooth, and a joy to fly. The bean-counters decided that it was uneconomical. Under regulated fares, it was. Now, with deregulated fares, the Caravelle and British BAC (and their out-boarded rear-engine concept) can be returned to service with newer engines and premium fares for those who still value their travel sanity. Didn't someone mention that the turbo-prop might be returning? Smaller is better!

Ultimately, the drive to bigger planes (520-seat size is already in design phase) will require still other rounds of expansion--no upper limit has yet been established. The contiguous population should not be held hostage to bean-counter schemes.

It's time to call enough "Enough!" on behalf of both the abused contiguous residents and the manhandled passengers. Move all mass-cargo carriers to distant locations and then connect them to city-centers at airline expense. If the airlines want longer runways and planes, let them find private financing for distant locations and light rail connectors. Then the problem-causers will be the solution-payers. That's fair. Politically-supported voter-abuse is not.

Overall problem:

Although the City of Los Angeles controls construction at LAX, an earlier US Congress has already co-opted local control of air traffic. Curiosity: The Mayor of Los Angeles favors the runway move northward; however the number of L.A. city-voters who live in immediate proximity to LAX are a distinct minority--he can with impunity favor the bean-counters and expansion-forever. Rich voices should not be the determiners.

Just as with banking limits (Glass-Steagall was eliminated to please laissez-faire business people; or TARP bailouts ignored limits on banks' usage), that earlier Congressional action re: skies has effectively removed intelligent limits. Unleashing the airlines' bean-counters has saddled the nearby populations with the negatives. Glass-Steagall has already demonstrated the folly of ideology-driven legislation: it can have severe unintended consequences. Larger planes can guarantee only larger disasters when they happen.

Keep in mind that the wonderful folks surrounding the vacated Marines' El Toro airport in Orange County want to take control of John Wayne airport away from LAWA. Reduced hours there would help to keep the noise in Los Angeles ! JWA neighbors oppose any new north runway, and the City of Newport Beach was granted a veto over expansion to the south. Granted by whom? Where's the corresponding veto power at LAX?

Essential: Given the legislative mess with the LAX situation; its surrounding smaller cities and an unincorporated area; and the confronted public, it's necessary for the various elected politicians speak for the essentially voiceless populations of non-L.A.-city-proper residents who surround LAX.

This writer will gladly help to create a collateral awareness in the general populations surrounding LAX. Exactly how should the affected public respond so as to encourage your individual offices to take a direct part in ending the LAX (and other airport) encroachment on the quality of public lives in order to feed private interests and fortunes? An action response, please. . . .

Re: Ignored health problems:

Currently, the airlines stack the incoming planes over metropolitan Los Angeles and land them at low and noisy levels. Thatdelivers all health-abusive results to the public: the distressing noise; pulmonary problems from, and smell of, spewed fuel fumes; as well as constant distractions for students and public--all for the convenience of the airlines. Other speakers reported increased rates of cancer and respiratory problems near LAX.

Given poor or non-existent sanitizing of seats an tables, according to Dr Joseph Maroon, there are many types of bacteria cultured, including fecal. Also, the dry air of the cabin contributes to pulmonary problems when coughs can drift two seats front and back--in most planes, that's six-to-nine or more passengers exposed.

The FAA permits over-ocean arrivals at night. If eastward-landings will work at night, they will work 100% of the time. The matter of take-off and landing into the wind has been the stated need since the days of

The City's Responses to Comments

propeller planes (grandfathered); however, jets move at more than triple the speed of propeller planes and create their own lift. Wind doesn't blow that fast, even in hurricanes. Wind drift has the same pressure at given times when approaching from either east or west.

Yes, noise and fumes from the ocean will drift eastward, but they'll be much diluted and scattered. Arrivals from, and take-offs to, the west should be made permanent for all flights. That conflicts with the current practice of landing from the east and take-off to the west; however that arrangement saturates traffic on behalf of the airlines while punishing the surrounding populations. The Congress is tasked with regulating commerce, not pampering it!

Yes, noise carries farther over water; but share the wealth. Then waterfront towns might also be less willing to tolerate expanded service at LAX, even though their executives use it more often than do the less-comfortable contiguous groups.

Airports are a regional problem. It's time for the FAA, LAWA, and SoCal's elected officials to deal effectively with the regional issues. LAWA is remiss in considering significant changes at LAX for airlines while not seriously considering the physical and emotional health risks and damages in the local populations.

Re: Jobs:

Because no one is arguing for closing LAX, most of the sad commentaries re: job loss were irrelevant--possibly reflecting scare tactics by their unions, which foresee larger memberships there, if expanded? Two important items:

1) Several attendant-level workers stated their "right" to have jobs. No one has a "right" to a job that causes distress for someone else. Foreign-born persons often have curious ideas about their "rights" upon arrival.

2) Those who spoke as union members (and who will get work under the modernization contracts) had all neglected to mention that those jobs will be temporary, although the negatives will have permanent impact on the surrounding communities and their residents.

Re: the Grandfather Clause:

Abuse has long been heaped on objectors in communities that surround LAX because residents have been beat down with the boogeyman of a Grandfathered Airport. That's true of a small landing area for propeller planes. Jets have no "Grandfather" protections at LAX. They have been shoe-horned into a docile public's life, space, and consciousness by an ill-advised Act of Congress. It's fair to challenge both the airlines' policy of "bigger is better" and also to challenge Congress' wisdom in disposing of public health and safety concerns in broad strokes.

Therefore, it's time to challenge the airline industry's guiding policy of "bigger-is-better." Put new limits on aircraft size at LAX: try "smaller is better."

Apparently, an earlier Congress had agreed with the airlines that that bigger is better. . .and had favored the dictates of an industry whose demands have become oppressive. The public is reaching the upper limits of tolerability. Both the crowded travelers and the distressed contiguous communities feel--rightly and nationally--that they have been abandoned by their legislative leaders of the past and possibly the present.

Re: Reception of digital broadcast TV:

Although implementation of digital transmission was required by Pres Bush-43, the digital system is infinitely worse for reception (rapidly repeated blackouts of sound and picture) than was analog broadcast (jiggled picture, acceptable sound, even if static). Cable is an easy answer to reception, but cable companies are not responsible for poor broadcast reception; the FCC and broadcasters are. Why was the current broadcast system installed without provision for necessary upgrades? The defaulting party(s) should pay for broadcast-only cable at no or low expense to the currently-dispossessed recipients of broadcast.

Residents' TV complaints have evidently been directed to LAX offices, rather than to elected representatives. There it's been ascribed to tower radio contact--but the control tower doesn't move, although the interruptions are variable. The problem then appears to be reflection from the skin of aircraft, which reflects differently depending on aircraft approach positions vs wind drift.

FCC has countered that (X- number) of stations are still available in the area. Quantity-over-quality suggests that bubble gum for the eyes is adequate, even if interrupted. Lack of quality programming is still a major failing of the FCC requirements for broadcasters.

One local chief of staff for an elected representative is not personally receptive to the TV complaints. The matter is not her personal decision. This complaint is itself tangential , in contrast to the health and quality of life complaints related to the FAA, as above. It requires separate handling with FCC. It will be addressed accordingly.

The City's Responses to Comments

Wrap up:

Gordian knot: The removal of all airline departures and arrivals at LAX to an over-ocean location will mitigate or eliminate all of the noted complaints above. On that basis alone, these complaints and this solution should be considered.

The time seems appropriate now to consider the human element at LAX or such continued aggravation will jog travelers and the airport-local residents into beginning a travel revolt that can include the entire nation. We need attention now from elected officials; all must listen and act in concert on behalf of the airport-local populations in order to create an equitable interim solution for the LAX area. . .until the Congress can devise an intelligent and workable system for the nation.

Given the legislative quandary and inequitable veto powers and voices, what actions can your office take, under what circumstances, to help to implement the needed people-protection elements, as implied in the notes above? Exactly how can we locals gain your help? Will you join other elected officials in a concerted effort to create a SANE SITUATION AT LAX?

Richard Cavalier
http://www.meetingsCavalier.com/
310/671-7262

*****

The City's Responses to Comments

From: Shelley Tucker
To: NOISE MANAGEMENT - LAXPART161
Subject: Easterly departures from 12:00-6:00 a.m.
Date: Thursday, November 15, 2012 12:55:16 PM

Gentlemen:

As a resident of El Segundo, I am curious to know how you plan to implement the above proposal of fewer easterly flights which will not increase the noise from additional westerly flights between the hours mentioned. We residents of El Segundo have enough aircraft noise to deal with, especially from so many freight flights taking off and landing in the evening hours. You cannot accommodate the residents in one area at the expense of residents in another. That solves nothing. Please re-think this proposal and come up with a more intelligent solution that will work for all residents within close proximity to LAX whether to the east, west, north or south.

5-1

Thank you,
Shelley Tucker

The City's Responses to Comments

The City responds as follows:

The City thanks Ms. Shelly Tucker, a resident in the City of El Segundo, for her comments.

5-1. The LAX proposed restriction will not add any additional flights at LAX between the hours of midnight and 6:30 a.m. The regulation will only require that departures during these hours conform to the air traffic flow at the time of the operation. The LAX/Community Noise Roundtable, of which the City of El Segundo is a member, requested LAWA seek the proposed restriction by this Part 161 process. The restriction, if approved by the FAA, will not shift noise from the communities to the east of LAX to the residents of El Segundo.

From: rob trent
To: NOISE MANAGEMENT - LAXPART161
Subject: lax east departure
Date: Tuesday, December 04, 2012 9:41:27 AM

this is unacceptable. our entire household and half the neighborhood was terrified and shaken. consider me a supporter of the cause to get these east departures prohibited.

"A United Airlines Boeing 747-400 plane leaving Los Angeles International Airport bound for Australia flew over Manhattan Beach along Rosecrans Avenue and out over the ocean at an altitude of 1,450 feet Monday night around 10:38 p.m., according to an online flight tracking system."

6-1

sincerely

Rob Trent
35th St.
Manhattan Beach, CA

The City's Responses to Comments

The City responds as follows:

The City thanks Rob Trent, a resident in the City of Manhattan Beach, for his comments.

6-1. While this departure operated in the same manner as the non-conforming operations that the LAX Part 161 restriction would restrict, this particular flight would have been allowed to operate as it did with or without the restriction in place because it departed prior to midnight and prior to the beginning of the proposed restriction period.

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APPENDIX D NONRESTRICTIVE ALTERNATIVES - COMMUNICATIONS WITH AIRLINES

D.1 LAX/Community Noise Round Table Discussion with Airlines, September 11, 2002

LAX/COMMUNITY NOISE ROUNDTABLE

REGULAR MEETING: WEDNESDAY, SEPTEMBER 11, 2002
LAWA ADMINISTRATION BUILDING
LOS ANGELES, CA

Meeting convened at 7:00 p.m.

Roundtable Members Present:

John McTaggart, Chairman, Mayor, City of Rancho Palos Verdes
Fred Mackenbach, Councilman, City of Palos Verdes Estates
J. R. Reviczky, Councilman, City of Hermosa Beach
Mike Cassidy, Vice Chairman, Representing Hermosa Beach Councliman Sam Edgerton
Amy Ho, City of Monterey Park
Roy Hefner, LAX Area Advisory Committee
Denny Schneider, Westchester/Playa Del Rey Neighborhood Council
Beverly Ackerson, PANIC
Mark Tellier, FAA
Roger Johnson, LAWA
Walt Gillfillan, Roundtable Facilitator

INTRODUCTION

Chairman McTaggart led the Roundtable in a moment of silence in remembrance of the brave people who lost their lives in the attacks on the United States on September 11, 2001.

Chairman McTaggart thanked the representatives of the airlines in attendance and established the ground rules regarding the discussions with these representatives.

CONSIDERATION/APPROVAL OF MAY 8, 2002 AND JULY 10, 2002 MEETING MINUTES

Roy Hefner commented on the May 8th meeting minutes regarding votes of the Roundtable suggested that the vote tally should be listed for every vote and not for some votes. It was moved, seconded and unanimously approved that the May 8, 2002 meeting minutes are approved as written.

Roy Hefner commented on the July 10th meeting minutes stating that Danna Cope's name was misspelled, and that in the Public Comment Section the reference to the August 24th date for the LAX Area Advisory Committee should be changed to August 8th. It was moved, seconded and unanimously approved that the July 10, 2002 meeting minutes are approved as corrected.

DISCUSSION OF EAST DEPARTURES DURING LAX OVER-OCEAN OPERATIONS WITH AIRLINES REPRESENTATIVES

Prior to the discussion with the airlines Bob Holden of LAWA gave a brief presentation on LAX flight patterns, Over-Ocean Operations (OOO) and the issue of east departures. The Roundtable's consultant Walt Gillfillan then made a brief presentation on LAWA's data regarding the frequency of east departures.

Northwest Airlines

Chairman McTaggart introduced Capt. Greg Baden, Director of Flying – Honolulu/Pacific Operations for Northwest Airlines. Capt. Baden stated that when he heard about the problem he investigated the flights that had done east departures and reported about the actions Northwest Airlines has taken to solve the problem. One east departure was a B747 freighter, and the rest were Flight 936 to Detroit on A320's. These A320 east departures occurred during the months of October through February, which has them arriving during winter weather in Detroit and requires the aircraft carry maximum fuel reserves. With respect the B747 freighter, which was fully loaded, the pilot decided to make an east departure after the wind shifted so the decision was made to avoid taking off with a tail wind. The crew of that flight was contacted and counseled about complying with LAX's OOO procedure. Capt. Baden also stated that since April of this year Northwest Airlines has substituted the B757 for the A320 for the Detroit flights. Capt. Baden has requested that he be emailed immediately if any of their aircraft perform an east departure during OOO so he can investigate and report back to LAWA and the Roundtable. He also shared with the Roundtable some posters and educational materials regarding complying with OOO that are posted in their LAX flight planning facility for the pilots and first officers.

Capt. Baden responded to a question from Mike Cassidy regarding removing cargo from an aircraft in the event of a wind shift that would make taking off with a tail wind and therefore necessitates an east departure. He stated that it is possible but that it would involve going back to the gate and disrupt service possibly causing passengers to miss connecting flights. He also stated that they wait until the last 30 minutes before departure to maximize the amount of cargo on board based on the actual environmental conditions at the time.

One Roundtable member inquired as to whether it is Northwest policy to never knowingly leave the gate when an east departure would be required. Capt. Baden stated that he is unaware of any such policy and that other departments make those decisions.

Qantas Airways

Capt. David Oliver, the General Manager Flight Technical for Qantas Airways spoke for his airline. He stated that his analysis of Qantas' 16 east departures, which were all in B744's, indicated that the maximum tailwind component that they can accept at maximum takeoff weight is 4 knots. He further stated that it is more beneficial for Qantas

to take off to the west due to the 14 or 15 hour length of the flights to Australia thus shortening flight time and saving critical fuel. He also stated that his company is very sensitive to local communities noise issues, and that they fly to London, which has very stringent noise rules, as does their home base in Sydney. All of their crews are briefed to fly using the aircraft's noise abatement departure settings.

Chairman McTaggart inquired as to if a schedule change to an earlier hour would help to eliminate the east departures. Capt. Oliver stated that it would, but the problem is that Sydney Airport has a curfew, and they would have to negotiate a new slot due to Sydney being a very busy airport. Capt. Oliver stated that the Sydney curfew is from 1:00 a.m. until 6:00 a.m. with a limited number of arrivals allowed between 5 to 6 a.m.

Councilman Mackenbach inquired what Qantas will do to mitigate the east departure problem. Capt. Oliver stated they are doing everything they can, and that in order to reach Australia they can't do anything but take off with maximum fuel load and takeoff weight. He further stated that Qantas has a 99% compliance rate with OOO, and that the safety of the flight is the primary factor in making the decision to take off to the east.

Roger Johnson of LAWA mentioned the disproportionate number of complaints received from these operations. LAWA's dilemma is that the airlines look at the small number of operations and ask why is it a problem; and the community looks at the small number of operations and asks why can't you stop this. While you've only had 10 operations in 18 months it's an incredibly egregious noise violation. He also stated LAWA is now pursuing a policy of making compliance mandatory with a formal curfew if the airlines don't voluntarily comply with OOO.

Roundtable Consultant Walt Gillfillan inquired into the 4-knot tailwind policy for the stage length and as to whether the aircraft's fuel tanks are full and at maximum takeoff weight. Capt. Oliver replied that the fuel tanks are full and taking payload off is a problem because they don't carry a lot of freight. Gillfillan then inquired as to how much cargo/passengers would have to be removed to change the 4-knot policy. Capt. Oliver stated that it would be in the order of 7 tons, which is a significant payload penalty.

Mike Cassidy inquired into the minimum runway length needed for a B747 to lift off, and if an uphill slope makes a difference. Capt. Oliver stated that it varies with the temperature and wind, but it is about 3500 meters (11,480 ft.). An uphill slope only makes a difference if the take off is obstacle limited, which helps, and then the uphill slope makes no difference.

A question was asked from the audience about taking off with less fuel and diverting to Hawaii or Midway Island and taking on fuel. Capt. Oliver stated that it is theoretically possible, but it is a business decision because they run into problems with the cost of fuel, landing fees, negotiating new landing slots at Sydney and additional crew costs.

Korean Airlines

Ms. Phoebe Kim, a Dispatcher from Korean Airlines in Dallas represented the airlines. She stated she researched the 8 flights involved in the east departures, but she does not have the technical knowledge of the previous two airline representatives. Of the flights, 4 were freighters, 2 were passenger flights and 2 were unknown but may have been passenger flights.

Chairman McTaggart inquired as whether freighters could take off at different times to take advantage of the wind since there are no passengers that would be affected. Ms. Kim stated that those freighters go to Narita airport in Japan, which has a curfew from midnight until 6:00 a.m.

Mike Stevens inquired into the final destination of the cargo. Ms. Kim stated that she did not have that information and would have to check with the KAL department that handles that. He then inquired into if KAL would be willing to fly out of El Toro it an airport was built there. Ms. Kim stated that would be a decision for KAL upper management, and would report these issues to her superiors.

EVA Airlines

Capt. Andy Lim, Assistant Chief Pilot represented the airline. He started by stating that EVA Air does not have the luxury of substituting equipment since all of their flights are B747-400's, the only aircraft capable of the mission. EVA Air uses the B744 comby, which is a combination passenger/freighter jet that operates with a higher maximum takeoff weight. EVA Air always operates at the aircraft's maximum structural weight and uses the aircraft's quiet departure profile. Routing of the aircraft is determined by Air Traffic Control. Capt. Lim then discussed their Runway Analysis Manual and how the aircraft's weight and the various environmental factors are used to determine the runway selection. He also stated that runway slope is not as critical a factor as wind speed and direction. The calculations show that there is a 3-ton weight penalty for each knot of tailwind, so with the 13.9 tons of payload that they can play with, they can only take off with about a 4.6-knot tail wind. Capt. Lim stated that EVA Air is always mindful of their noise impacts on the residents, but that safety is their primary consideration.

Chairman McTaggart inquired if EVA Air has to deal with curfews at their destinations. Capt. Lim stated that except for London and Sydney, they do not.

Mike Stevens asked if a longer runway would make it possible for them to take off over the ocean more often. Capt. Lim stated that is correct.

Councilman Reviczky expressed his concerns about safety having aircraft at maximum weight flying over his community, and flying below the floor of Class B airspace among smaller aircraft. Mark Tellier of the FAA disagreed and stated that they are flying in Class B airspace and that they are not unsafe. Councilman Reviczky also asked Capt. Lim, and all of the airline reps, as to what they will do about this. Capt. Lim stated that it was a commercial decision, and not a technical one, and that he's not authorized to comment on that.

Roger Johnson asked Capt. Lim if EVA Air would be purchasing the Airbus A380. He also requested that all of the airlines answer this question. Capt. Lim answered that EVA Air is not buying the A380. Northwest Airlines also stated they would not be purchasing the A380. Qantas Airlines will be purchasing the A380. (Note: the Korean Airlines representative had left to catch a flight before this question).

China Airlines

Capt. Kane Lee, Assistant Chief Pilot of the B747-400 Fleet represented the airline. He stated that their east departures are mainly in the winter months when the headwinds to Taiwan are the strongest causing them to travel longer distances. Capt. Kane discussed the load factors of their aircraft and stated that in order to remove enough payload to

depart to the west with a tail wind they would have to cancel the flight because they would lose too much money. Capt. Kane then discussed what China Airlines intends to do to improve the situation. The first is that their Planning & Development Dept. will revise their flight performance charts to add a 5 knot tail wind column to the tables, which will increase their aircraft's takeoff performance allowable weight by about 30,000 lbs. The second is that the crews will be authorized to take off with "packs off," which is the air conditioning unit, which would increase engine performance. The third is that China Airlines will alter their winter flight schedule so the flight will depart at 11:30 p.m. from its current 12:45 a.m. scheduled departure time.

Roger Johnson thanked the all of the airlines' representatives on behalf of LAWA Acting Executive Director Paul Green and all of LAWA for attending the meeting. Chairman McTaggart also thanked the airlines' for having the courage to attend the meeting, get into the hot seat and help solve the problem.

REPORT OF THE AUGUST 7, 2002 FLIGHT TRACK DATA SUBCOMMITTEE MEETING

Due to the length of the meeting there was no FTDS report. Chairman McTaggart directed that the draft letter to the FAA regarding the Monterey Park overflight issue be shortened from 4 pages to no more than 2 and returned to the Roundtable for consideration at the November 13th meeting.

ROUNDTABLE MEMBER DISCUSSION

Roger Johnson reminded the Roundtable that it sent a letter to Mayor Hahn asking him to come and make a presentation on the noise issues regarding the latest LAX Master Plan Alternative. The Mayor has asked Deputy Mayor Troy Edwards and BOAC President Ted Stein to attend and make the presentation for him. This item will be scheduled for the November meeting.

One Roundtable member suggested that letters be sent to the airlines that attended thanking them and ask them to confirm what they intend to do in the future. The letters should be individual for the airline based on the content of their presentations, and ask the ones who did not commit to inform us of their future plans to solve the east departure problems from their aircraft.

Roy Hefner mentioned that AB2333 was watered down and has passed the legislature and is on the Governor's desk awaiting his signature. He also mentioned that Congresswoman Waters has introduced 3 bills in Congress regarding LAX that would limit the growth of LAX to 78 million annual passengers (MAP); lower the soundproofing eligibility contour to 60 dBA CNEL from 65 dBA CNEL; and give LAX priority for FAA soundproofing grant money. He also called for a Noise Subcommittee meeting in October to receive a presentation on the LAX Part 161 Study.

Mike Stevens requested that attorney Barbara Lichtman be allowed to attend the November meeting and be put on the agenda to discuss what's going on at El Toro and to engage in a debate with BOAC President Stein regarding LAWA operating an airport

at El Toro. A motion was made to this effect and seconded. Chairman McTaggart stated that she represents several of the jurisdictions (Rancho Palos Verdes, Hermosa Beach and Redondo Beach) represented on the Roundtable and there could be a conflict of interest. Walt Gillfillan stated that the Roundtable has established a Workplan and this is a Master Plan issue, which is not on the Workplan so this side issue is more appropriate for another forum. Roger Johnson then stated that the Roundtable was created to deal with the operational noise issues as they relate to the communities impacted by LAX aircraft operations, and not the feasibility of LAWA operating a commercial airport at El Toro. The motion was voted on and defeated.

PUBLIC COMMENT

One Westchester resident commented that they didn't want to be overlooked in this process, and on the R-Nav overlay to the LOOP Departure (KWYET Departure) and that relocating the routes of general aviation aircraft would cause more overflights of Westchester. Mark Tellier stated that there should be no more planes flying over than there are today, and that they would be at 3500 ft. to 4000 ft. and not as noisy as the aircraft at LAX.

There was a question on when the public comment period on the KWYET Departure. Mark Tellier stated that it will be when the procedure is released from committee. The FAA will notify LAWA and the Roundtable when that occurs, and it will be noticed in the Federal Register.

The Roundtable meeting was adjourned at 10:00 p.m. The next Roundtable meeting is scheduled for November 13, 2002 at 7:00 p.m. in the Samuel Greenberg Board Room at the LAWA Administration Building.

D.2 Sample Communications with Airlines Regarding East Departure Operations during Nighttime Hours

December 8, 2011

_____
_____
_____

Re: East Departure Operation During Nighttime Hours

Dear _____:

Our records indicate that on _____, _____ departed to the east from Los Angeles International Airport (LAX) using Runway 07L, while other airlines were departing to the west. This operation deviated from the LAX Aircraft Noise Abatement Operating Procedures and Restrictions as set forth in Section 5 of the LAX Rules and Regulations.

The LAX Aircraft Noise Abatement Operating Procedures and Restrictions provide that all aircraft operators utilize the Over-Ocean Operation Procedures during the nighttime hours from 12 a.m. to 6:30 a.m. wherein aircraft arrive and depart over the ocean, unless the pilot determines otherwise in the interest of safety. These procedures are preferred in order to minimize aircraft noise exposure for communities directly east of the airport. While these procedures are not intended to restrict aircraft or abrogate the authority and responsibility of the pilot in command to ensure the safe operation of the aircraft, Los Angeles World Airports would like to try to minimize the disturbance of aircraft noise on the residents of communities under the flight path to the extent possible, and particularly late at night when the community is most sensitive to aircraft noise.

In the spirit of cooperation and consideration for community residents who are directly impacted, Los Angeles World Airports requests that airlines adhere to the preferred Over-Ocean Operating Procedures to the extent possible. We have enclosed the form entitled "East Departure Operation Between 12:00 a.m. and 6:30 a.m." and request that you complete and return it to us as soon as possible. This is just one way that will enable us to better assess the cause of this deviation and to work together with you to minimize the impact of aircraft noise on these affected communities.

Thank you for your cooperation and assistance in this matter. Your willingness to assist us will demonstrate to the public that _____ is continually striving to be a good neighbor. If you have any questions, please contact Robert Holden of my staff at (424) 646-6507.

Sincerely,

Scott Tatro
Environmental Affairs Officer

Enclosure

LAX
Los Angeles World Airports

EAST DEPARTURE OPERATION BETWEEN 12:00 A.M. AND 6:30 A.M.
(OPTIONAL)

Please fill out this form and return it to: Los Angeles World Airports, Environmental Services Division, 7301 World Way West, 3rd Floor, Los Angeles, CA 90045, Attn: Robert Holden

1. Date and Time of Departure:_____
2. Airline/Flight Number:_____
3. Aircraft Type:_____
4. Engine Type/Engine Configuration:_____
5. Runway Requested:_____
6. Wind Speed and Direction at time of Departure:_____
7. Airport Destination:_____
8. Reason for the east departure:_____

_____

_____

9. Weight of the aircraft on departure:_____
10. Amount of fuel on board the aircraft:_____

Name:_____ Title:_____

Date:_____ Phone#:_____

Email:_____

D.3 Listing of Airlines and Fixed-Base Operators who were sent Notice of Proposed Restriction and Announcement of Public Review Period

Aer Lingus	Aeroflot Russian International Airlines	Aerolineas Argentinas SA	AeroMexico
AeroMexico Connect	Aerovias del Continente Americano	Air Canada	Air Canada Jazz
Air China	Air France	Air Jamaica	Air New Zealand
Air Pacific Ltd	Air Tahiti Nui	AirTran Airways Inc	Air Wisconsin Airlines Corporation
Alaska Airlines Inc.	Alitalia Airlines	All Nippon Airways Co Ltd	Allegiant Air
America Airlines Inc American Eagle Airlines	Asiana Airlines	AvAirPros	Aviacsa
British Airways PLC	Cathay Pacific Airways Ltd	China Airlines Ltd	China Eastern Airlines
China Southern Airlines	Continental Airlines Inc	Copa Airlines	Delta Air Lines Inc
El Al Israel Airlines Ltd	Emirates Group	Eva Airways Corporation	ExpressJet Airlines, Inc.
Frontier Airlines Inc	Global Aviation Holdings	Hawaiian Airlines Inc	Horizon Air Industries Inc
Japan Airlines International Co. LTD	JetBlue Airways Corporation	KLM Royal Dutch Airlines	Korean Air
LAN Airlines S A	LAN Peru SA	LAXTEC	Lineas Aereas Costarricenses SA
Lufthansa German Airlines	Malaysian Airline System	Mesa Airlines	Miami Air International Inc
Midwest Airlines	Northwest Airlines Inc	Philippine Airlines	Qantas Airways Ltd
Republic Airlines	Singapore Airlines Ltd	SkyWest Airlines Inc	Southwest Airlines Co
Spirit Airlines Inc	Swiss International Airlines	TACA International Airlines SA	Thai Airways International Ltd
United Air Lines Inc	US Airways Inc	MN Airlines, LLC dba Sun Country Airlines	V Australia
Virgin America Inc	Virgin Atlantic Airways LTD	Volaris	Westjet
Atlantic Aviation	Landmark Aviation	Airborne Express	Amerflight, LLC.
Aerologic GMBH	Air China Cargo Company Co. LTD	Capital Cargo International Airlines, Inc.	China Cargo Airlines
Kalitta Air, LLC	Cargolux Airlines International	Centurion Air Cargo, Inc.	Air Transport Inc.
DHL Worldwide Express	Evergreen International Airlines	Federal Express Corporation	Lufthansa Cargo AG
Atlas Air	Kalitta Flying Service, Inc.	Mas Air Cargo	Nippon Cargo Airlines
Omni Air Express	Polar Air Cargo	Westair, Inc.	Pak West Airlines
Royal Air Freight, Inc.	Shanghai Airlines Cargo International	Aereo Litoral	Southern Air, Inc.
Singapore Airlines Cargo	Aerotransporte De Carga Union	United Parcel Service	Yangtze River Cargo

Sample Letter

Los Angeles
World Airports
TM

October 29, 2012

Aer Lingus
380 World Way, Suite 4111
Los Angeles, CA 90045

SUBJECT: LOS ANGELES INTERNATIONAL AIRPORT NOTICE OF PROPOSED AIRPORT USE RESTRICTION AND RELEASE OF DRAFT PART 161 APPLICATION

Dear Kevin Reichart,

Los Angeles World Airports (LAWA) is pleased to provide you with the attached "Notice of Proposed Airport Use Restriction: Runway Use Restriction" at Los Angeles International Airport (LAX) and the draft LAX Part 161 Application. With this notice, LAWA opens the Public Outreach Program of the Part 161 process.

The LAX Part 161 Application seeks Federal Aviation Administration (FAA) approval for the proposed restriction at LAX, which is intended to restrict the easterly departure of all aircraft, with certain limited exceptions, during the hours of Midnight to 6:30 a.m. when LAX is operating in Over-Ocean Operations or remains in Westerly Operations during these hours. The proposed restriction will not be in effect when LAX is operating in Easterly Operations.

LAWA conducted a Part 161 Study, which resulted in an application that will be submitted to the FAA requesting a waiver of the Federal preemption that limits airport proprietors from implementing local noise and access restrictions at their airports without FAA approval. If approved, the restriction will be implemented by a City ordinance that imposes penalties on aircraft operators for non-compliance. The application is available on the LAX Part 161 Study webpage at this address: www.laxpart161.com.

The 45-day public review and comment period on the Part 161 Study and Application will begin on November 1, 2012 and end on December 17, 2012. Comments may be submitted via the above mentioned website, by email at this address: laxpart161@lawa.org, during the public workshop mentioned below, or via US Mail to the following address:

Mr. Scott Tatro
Los Angeles World Airports
1 World Way, P.O. Box 92216
Los Angeles, CA 90009-2216

LAWA will be holding a public workshop regarding the LAX Part 161 Application on Thursday, November 13, 2012 at the LAX Flight Path Museum and Learning Center from 6:00 p.m. to 9:00 p.m. The museum is located at 6661 West Imperial Highway, Los Angeles, 90009. During the workshop, a presentation on the LAX Part 161 Study and resultant Application will be given at the beginning of the meeting, and then later in the evening in order to accommodate various schedules.

LAWA anticipates submitting the LAX Part 161 Application to the FAA at the end of January 2013. Once the FAA receives the LAX Part 161 Application and deems it complete, they have 180 days to review and approve or disapprove the application. If the FAA approves the application, LAWA will initiate the ordinance approval process, which includes an environmental review, approval of the ordinance by the Board of Airport Commissioners, and enactment of the ordinance by the Los Angeles City Council.

If you have any questions regarding the LAX Part 161 Application, please feel free to contact Scott Tatro or Robert Holden of LAWA's Environmental Services Division at (424) 646-6499 and (424) 646-6507, respectively.

Sincerely,

Scott Tatro
Airport Environmental Manager
cc: GM Lindsey
S. Martin
M Feldman
S. Tatro

1 World Way Los Angeles California 90045-5803 **Mail** P.O. Box 92216 Los Angeles California 90009-2216 **Telephone** 310 646 5252 **Internet** www.lawa.aero

APPENDIX E LAX NOISE WAIVERS AND ORDINANCES

Ten-Knot Tailwind Component Waiver

of Transportation
Federal Aviation
Administration

Subject: INFORMATION: Waivers to FAA Order 8400.9 Date: FEB 14 1985

From: Walter S. Luffsey
Associate Administrator for Air Traffic, AAT-1

Reply to
Attn of: Jones:426-8511

To: Director, Western Pacific Region, AWP-1
ATTN: Manager, Air Traffic Division, AWP-500

We have reviewed the AWP-500 memorandum of December 18, 1984, regarding consolidation and expansion of waivers to FAA Order 8400.9 for Los Angeles International Airport (LAX).

Based on the assurances provided in that memorandum, the accompanying concurrences of AWP-200/600 and 14 years of incident-free experience at LAX, we agree that an equivalent level of safety has bean demonstrated for operations under the existing and requested waivers.

Therefore, in consideration of these unique, site-specific requirements and the justification provided, we will consolidate and expand the waivers to FAA Order 8400.9 for LAX when applying the approved noise abatement runway use program as follows:

Paragraph 7.b. - Visibility

A waiver is hereby granted to authorize noise abatement operations with a runway visual range (RVR) of not less than 2,400 feet.

Paragraph 7.d.(1)(c) - Tailwind Component - Dry Runway

A waiver is hereby granted to authorize noise abatement operations with a maximum tailwind component no greater than 10 knots.

Paragraph 7.d.(2)(b) - Tailwind Component - Wet Runway

A waiver is hereby granted to authorize noise abatement operations when runways are wet but clear of snow, slush, ice, or standing water with a maximum tailwind component of 10 knots. The waiver does not apply if snow, slush, ice, standing water, or other contaminants are present.

The LAX runway use program shall conform to all other criteria in FAA Order 8400.9. Previous waivers to paragraph 7.d.(1)(c), dated November 9, 1981, and 7.b., dated December 2, 1982, for LAX, are hereby cancelled.

2-0935

LAX Noise Ordinances

Ordinance No. 152,455

An Ordinance approving a Regulation adopted by Resolution No. 11650 of the Board of Airport Commissioners of the City of Los Angeles, which Resolution established a noise control regulation for air carriers having operating agreements at Los Angeles International Airport.

THE PEOPLE OF THE CITY OF LOS ANGELES DO ORDAIN AS FOLLOWS:

Sec. 1. The Regulation adopted by Resolution No. 11650 of the Board of Airport Commissioners on May 7, 1979, is hereby approved. Said Regulation contained in said resolution provides for the establishment of a noise control regulation for air carriers having operating agreements at Los Angeles International Airport and is in words and figures as follows:

SECTION 1. PURPOSE—The purpose of this Regulation is to reduce aircraft noise in the communities surrounding Los Angeles International Airport by (a) the establishment of an aircraft noise limitation for new types and classes of aircraft which seek to commence operations at Los Angeles International Airport; (b) the implementation of a three-phase compliance program with FAR Part 36 noise criteria to be completed by January 1, 1985; and (c) the assurance that all affected aircraft shall conform to FAR Part 36 noise criteria by January 1, 1985.

SECTION 2. EFFECTIVE DATE—This Regulation shall take effect on the date it becomes effective as an ordinance and shall remain in full force and effect until amended, modified or rescinded.

SECTION 3. DEFINITIONS—

(a) Affected Aircraft—All revenue aircraft operating at Los Angeles International Airport weighing 75,000 pounds or more, excepting therefrom military aircraft.

(b) Affected Aircraft Operation—A revenue landing or revenue takeoff of an affected aircraft at Los Angeles International Airport.

(c) Aircraft Operator—That organizational entity responsible for an affected aircraft operation at Los Angeles International Airport of an affected aircraft in interstate and/or foreign commerce pursuant to the terms of the Federal Aviation Act of 1958, as amended, and/or in intrastate commerce pursuant to the provisions of the California Public Utilities Code.

(d) Airport—Los Angeles International Airport.

(e) Board—The Board of Airport Commissioners, City of Los Angeles, as described and defined in Article VI, Section 70, et seq. and Article XXIV, Section 238, et seq. of the Charter of the City of Los Angeles.

(f) FAA—Federal Aviation Administration.

(g) Federal Aviation Regulation Part 36 (FAR Part 36) Noise Criteria—The noise criteria for issuance of type certificates for affected transport category aircraft are as defined in Title 14, Code of Federal Regulations, Chapter 1, Part 36, as in effect on December 1, 1969. For purposes of this Regulation, those affected aircraft which are certificated and comply with the International Standards and Recommended Practices—Aircraft Noise, in effect on December 1, 1969, pursuant to Annex 16, Part II, of the International Civil Aviation Organization (ICAO), shall be deemed to meet FAR Part 36 criteria except that aircraft which require runway length of 450 meters or less at maximum certificated weights for airworthiness shall be presumed to meet such criteria.

(h) Foreign Aircraft Operator—A foreign air carrier engaged in foreign air commerce as both of said terms are defined in Federal Aviation Regulation Part 1.

(i) General Manager—General Manager of the Department of Airports, as described and defined in Article VI, Section 70, et seq. and Article XXIV, Section 238, et seq. of the Charter of the City of Los Angeles.

(j) Noise Value Limitations—The noise value limitations for each monitoring station based on aircraft noise measurements during the first 180 days of 1978 at Airport. These prescribed noise values were determined by a systematic adjustment of the dBA sound pressure levels at each of the twelve noise monitoring stations in the vicinity of Airport until no more than 2% of the daily operations at each of the stations exceed the resultant established noise values. The noise value limitations are shown on Exhibit A, attached hereto and dated July 24, 1978.

(k) Program Period—The program period of this Regulation shall be defined as the period commencing with the effective date of the ordinance approving this Regulation and continuing thereafter until otherwise modified.

SECTION 4. APPLICABILITY—This Regulation shall be applicable in all respects to each and every affected aircraft that now operates or in the future may operate at Airport. It shall further be applicable to each aircraft operator that seeks to operate a type or class of aircraft at Airport, as provided in Part 1 of this Regulation, weighing 75,000 pounds or more.

SECTION 5. REGULATION—

Part 1—To achieve the purpose of this Regulation as stated in paragraph 1(a), an aircraft operator that seeks to commence affected aircraft operations at the Airport with a type or class of aircraft that was not utilized in regularly scheduled passenger or cargo service by any aircraft operator at Airport during the first 180 days of 1978 shall obtain Board approval prior to commencing operations. The General Manager shall administratively furnish a list of aircraft utilized in regularly scheduled passenger or cargo by any aircraft operated at Airport during the first 180 days of 1978. In order to obtain Board approval, the aircraft operator as a part of the entire criteria must furnish evidence that the operation of said aircraft will not exceed any of the established noise value limitations at any one or more of the noise monitoring locations, as shown on Exhibit A, by more than 2% of said aircraft's total operations on either a takeoff or landing at the Airport, during the first 90-day period of proposed operations.

When furnishing evidence to the Board that an affected aircraft has the ability to comply with this Part of the Regulation, an aircraft operator shall be required to provide appropriate environmental assessment information to validate conclusions and compliance ability by reference to established noise levels for that particular type or class of aircraft as prescribed by the FAA. The Board reserves the right to validate the affected aircraft's compliance ability through the utilization of actual flight noise measurements for the initial 90-day period of operations. In the event such actual flight noise measurements exceed the established noise value limitations as shown on Exhibit A, by more than 2% of said aircraft's total operations on either a takeoff or landing at the Airport, the Board shall rescind its previously granted approval and said aircraft shall no longer engage in affected aircraft operations at Airport. An aircraft which has been certificated by the FAA to be in compliance with the noise criteria of FAR Part 36, as defined herein, prior to commencement of operations, shall be presume to meet the requirements of Part 1 of this Regulation.

Except as specifically approved and authorized by the FAA, no affected aircraft, including those engaged in the initial 90-day period of operation, shall utilize revised operational flight techniques at the Airport which would increase the established noise levels as shown on Exhibit A. However, this requirement does not apply to missed approaches, easterly departures, safety considerations, or other affected aircraft operations due to weather phenomena.

Part 2—To achieve the purpose of this Regulation as found in paragraph 1(b), a three-phase program to achieve compliance with FAR Part 36 noise criteria is required to be completed by 1985 in order to reduce jet aircraft noise in the communities surrounding the Airport.

Aircraft operators shall not conduct affected aircraft operations at the Airport unless such aircraft conform to the criteria of FAR Part 36, consistent with the following compliance schedule:

(a) By January 1, 1981 and continuing thereafter:

(1) At least 25% of the aircraft operated into the Airport in all affected aircraft types or classes that have four engines with no bypass ratio or with a bypass ratio less than two.

(2) At least 50% of the aircraft operated into the Airport in all other affected aircraft types or classes.

(b) By January 1, 1983 and continuing thereafter:

(1) At least an additional 25% of the aircraft operated into the Airport in all affected aircraft types or classes that have four engines with no bypass ratio or with a bypass ratio less than two.

(2) 100% of all other affected aircraft operated into the Airport.

(c) By January 1, 1985 and continuing thereafter: 100% of the aircraft operated into the Airport in all affected aircraft types or classes that have four engines with no bypass ratio or with a bypass ratio less than two.

Part 3—Notwithstanding the provisions of Parts 1 and 2 of this Regulation and to achieve the purpose of the Regulation as found in paragraph 1(c), by January 1, 1985, all affected aircraft operating at the Airport must be certificated to the noise criteria of FAR Part 36.

SECTION 6. COMPLIANCE—In order to demonstrate compliance with Parts 2 and 3 of this Regulation, commencing with the first calendar quarter after January 1, 1981, and each quarter thereafter, each aircraft operator shall submit a quarterly report to the Department of Airports that identifies all affected aircraft that have operated at the Airport during the preceding quarter by: (1) type or class; (2) registration number; and (3) compliance with Part 36 noise criteria. Each aircraft operator's required quarterly report shall be submitted to the Department of Airports within 20 days after completion of each calendar quarter.

The General Manager shall provide those administrative procedures necessary for reporting compliance with this Regulation.

SECTION 7. VARIANCES—The Board may grant a variance from Part 2(a) and/or (b) of this Regulation upon written application made no later than 90 days prior to the initial compliance dates provided therein. The request for a variance must be accompanied by a proposed alternative program that achieves the objectives contained in this Regulation. In the consideration of the variance request, the Board or its designated officer shall give notice and hold a public hearing to receive all information relevant to the request.

Upon application, the Board shall grant a variance from Part 2(a) and/or (b) of this Regulation as follows:

(a) To a foreign aircraft operator.

(b) To that portion of an aircraft operator's fleet for which the aircraft operator has an FAA approved plan in accordance with Federal Regulation Section 91.305.

(c) To that portion of the fleet of a United States flag aircraft operator that has an approved FAA apportionment plan as provided in Federal Regulation Section 91.307.

In all other circumstances, the Board shall grant a variance if the public interest would be satisfied by such a variance. The weighing the public interest, the Board shall consider the following:

(a) The ability of the aircraft operator to effectuate new aircraft delivery or the retrofitting of existing aircraft in a timely manner.

(b) The economic feasibility of complying with the Regulation.

(c) The noise impact should the variance be granted.

(d) The value to the public of the services for which the variance is sought.

(e) Whether the aircraft operator is taking measures which achieve the objectives of this Regulation.

The burden of proof shall be upon the applicant for a variance. The Board shall make findings on the merits of said request based on the aforementioned criteria and either grant or deny the request.

In no event shall a variance be granted herein for a period beyond December 31, 1984.

SECTION 8. ENFORCEMENT AND PENALTIES—Any aircraft operator that fails to comply with any part of this Regulation shall be subject to loss of its operating rights at the Airport.

Prior to initiating enforcement proceedings, the subject aircraft operator shall be notified in writing of the violation and shall be afforded the opportunity to respond thereto at a public hearing.

SECTION 9. SEVERABILITY OF REGULATION—If any provision of this Regulation or the application thereof is held unconstitutional or otherwise unlawful, the remainder of the Regulation and the application of same shall not be affected thereby.

Sec. 2. The City Clerk shall certify to the passage of this ordinance and cause the same to be published in some daily newspaper printed and published in the City of Los Angeles.

I hereby certify that the foregoing ordinance was passed by the Council of the City of Los Angeles at its meeting of May 29, 1979.

REX E. LAYTON, City Clerk
By Irvin Walder, Deputy

Approved May 31, 1979.

TOM BRADLEY, Mayor

File No. 76-1869

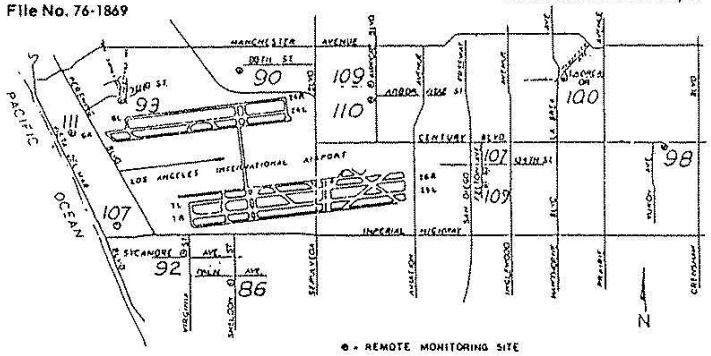

EXHIBIT "A"
Maximum Noise Limitations in dBA for each Monitoring Station at LAX. The State of California has certified the LAX Noise Monitoring System to be accurate within plus or minus 1.5 dBA

July 24, 1979

(JN2690) Jun 6

Ordinance No. 168852

An Ordinance repealing Ordinance No. 152,455 and approving a regulation adopted by Resolution No. 17601, as amended by Resolution No. 18298, of the Board of Airport Commissioners of the City of Los Angeles, which Resolutions established a Stage 2 airplane phaseout regulation for airplanes operating at Los Angeles International Airport.

THE PEOPLE OF THE CITY OF LOS ANGELES

DO ORDAIN AS FOLLOWS:

LOS ANGELES INTERNATIONAL AIRPORT

STAGE 2 AIRPLANE PHASEOUT REGULATION

Sec. 1. The regulation adopted by Resolution No. 17601, as amended by Resolution No. 18298 of the Board of Airport Commissioners on May 15, 1991 and December 21, 1992, respectively, is hereby approved. Said regulation contained in said Resolutions provides for the establishment of a Stage 2 airplane phaseout regulation for airplanes operating at Los Angeles International Airport and is set forth as follows:

SECTION 1. PURPOSE: The purpose of this Regulation is to reduce airplane noise in the communities surrounding the Airport by (a) prohibiting the introduction of any new affected airplane operations with Stage 2 airplanes; (b) implementing a four-phase program to eliminate operations with Stage 2 airplanes, to be completed by January 1, 2000; (c) implementing a program to limit nighttime affected airplane operations with Stage 2 airplanes; and (d) assuring that all affected airplanes operated at the Airport on or after January 1, 2000 comply with the Stage 3 noise standards of FAR Part 36.

SECTION 2. EFFECTIVE DATE: This Regulation shall take effect on the date it becomes effective as an ordinance and shall remain in full force and effect until amended, modified or rescinded.

SECTION 3. DEFINITIONS:

(a) Affected Airplane -- A subsonic or supersonic airplane operated at the Airport with a maximum certificated weight of more than 75,000 pounds, except military airplanes.

(b) Affected Airplane Operation -- a landing or takeoff of an affected airplane at the Airport.

(c) Airplane Operator -- The entity responsible for an affected airplane operation at the Airport.

(d) Airport -- Los Angeles International Airport.

(e) Board -- The Board of Airport Commissioners, City of Los Angeles, as described and defined in Article VI, Section 70, et seq. and Article XXIV, Section 238, et seq. of the Charter of the City of Los Angeles.

(f) FAA -- Federal Aviation Administration.

(g) General Manager -- General Manager, also designated "Executive Director", of the Department of Airports, as described and defined in Article VI, Section 70, et seq. and Article XXIV, Section 238, et seq. of the Charter of the City of Los Angeles.

(h) Quarterly Period -- The successive three-month periods occurring at regular intervals four times a year, the first quarter of any given year beginning on the first day of January, the last quarter ending on the thirty-first day of December.

(i) Stage 2 Airplane -- A United States registered affected airplane certificated by the FAA as complying with the Stage 2 noise standards of Appendix C, Part 36 of the Federal Aviation Regulations (14 CFR 36), or an affected airplane certificated by the country of registry as complying with the noise standards of Chapter 2, Volume I of Annex 16 to the Convention on International Civil Aviation.

(j) Stage 3 Airplane -- A United States registered affected airplane certificated by the FAA as complying with the Stage 3 noise standards of Appendix C, Part 36 of the Federal Aviation Regulations (14 CFR 36), or an affected airplane certificated by the country of registry as complying with the noise standards of Chapter 3, Volume 1 of Annex 16 to the Convention on International Civil Aviation.

(iii) On and after January 1, 1999, at least 75 percent of each airplane operator's affected airplane operations at the Airport shall be conducted with Stage 3 airplanes; and

(iv) On and after January 1, 2000, 100 percent of each airplane operator's affected airplane operations at the Airport shall be conducted with Stage 3 airplanes.

(c) Part 3A -- If, during any given month, prior to January 1, 2000, an airplane operator conducts an average of no more than four affected airplane operations per day at the Airport, then during said month that airplane operator is not required to comply with the compliance schedule set forth in Part 2 (i) through (iii) of this Section; provided, however, that no airplane operator is permitted to conduct a greater number of annual affected airplane operations with Stage 2 airplanes than is shown for that airplane operator on Exhibit A of this Regulation.

(d) Part 3B -- Prior to January 1, 2000, an affected airplane operator is exempted from complying with Subsections (i), (ii), or (iii), whichever is currently applicable, of Section 5(b) Part 2 if the percentage of affected Stage 3 airplane operations conducted by all airplane operators at the Airport, calculated quarterly on an airport fleet-wide basis, meets or exceeds the Stage 3 percentage requirement of the applicable subsection. If at any time the quarterly airport fleet-wide percentage of affected Stage 3 airplane operations fails to equal or exceed the currently applicable percentage stated in Part 2, the exemption in this Part 3B shall thereafter become inoperative and all

affected airplane operators shall individually comply fully with the compliance schedule set forth in Part 2.

The General Manager shall issue a quarterly report of airport-wide operations, which shall include the percentage of Stage 3 operations and a forecast of projected compliance or non-compliance, if any, with the applicable Stage 3 percentage.

(e) Part 4 -- To provide for the reduction of airplane noise in the communities surrounding the Airport during nighttime hours, a three-phase program shall be implemented to limit the number of affected airplane operations conducted with Stage 2 airplanes:

(i) On and after July 1, 1991, during the hours from 1:00 a.m. through 5:59 a.m., no airplane operator shall conduct a greater number of annual affected airplane operations with Stage 2 airplanes than is shown for that airplane operator on Exhibit B of this Regulation;

(ii) On and after January 1, 1994, during the hours from midnight through 5:59 a.m., no airplane operator shall conduct a greater number of annual affected airplane operations with Stage 2 airplanes than is shown for that airplane operator on Exhibit B of this Regulation; and,

(iii) On and after January 1, 1996, during the hours from midnight through 6:29 a.m., no airplane operator shall conduct a greater number of annual affected airplane

operations with Stage 2 airplanes than is shown for that airplane operator on Exhibit B of this Regulation.

(f) Part 5 -- On and after January 1, 2000, no airplane operator shall conduct an affected airplane operation at the Airport unless the airplane has been certificated by the FAA to the Stage 3 noise standards of FAR Part 36.

SECTION 6. COMPLIANCE: To demonstrate compliance with the provisions of this Regulation, commencing with the first quarterly period after the effective date of this Regulation, and each quarterly period thereafter, each airplane operator shall submit a quarterly report to the Department of Airports that lists all affected airplanes that have operated at the Airport during the preceding quarter by the airplane characteristics in (a) through (d), and that provides the additional summary information in (e) through (g), as follows:

(a) type or class and model number;

(b) type of engines;

(c) registration number;

(d) compliance with Part 36 Stage 2 or 3 noise standards;

(e) number of affected airplane operations by each type or class and model number and the total number of affected airplane operations;

(f) percentages of total affected airplane operations conducted with Stage 2 and Stage 3 airplanes during the quarterly period; and

(g) a comparison showing the total number of Stage 2 affected airplane operations conducted by the airplane operator during the preceding four quarterly periods and the number of Stage 2 affected airplane operations shown for that airplane operator on Exhibit A of this Regulation.

Each airplane operator's required quarterly report shall be submitted to the Department of Airports within 20 days after completion of each quarterly period.

The General Manager shall provide those administrative procedures necessary for reporting compliance with this Regulation.

SECTION 7. VARIANCES:

(a) The Board may grant a variance from Section 5 of this Regulation upon written application. The request for a variance must be accompanied by a proposed program that will achieve the objectives contained in this Regulation. In the consideration of the variance request, the Board or its designated officer shall give notice and hold a public hearing to receive all information relevant to the request and shall grant a variance if the public interest would be satisfied by such a variance. In weighing the public interest, the Board shall consider the following:

(i) The ability of the airplane operator to effectuate new airplane delivery or the retrofitting of existing airplanes in a timely manner, including evidence that firm and timely orders have been placed for hush kit or new affected airplane deliveries.

(ii) The economic feasibility of complying with the Regulation.

(iii) The noise impact should the variance be granted.

(iv) The value to the public of the services for which the variance is sought.

(v) Whether the airplane operator is taking measures which achieve the objectives of this Regulation.

(vi) Whether the airplane operator has a statement, signed by the Secretary of State or by a Deputy Secretary of State, stating the official position of the United States that the granting of a variance is in the foreign policy or national security interests of the United States.

(vii) Whether the airplane operator has a statement, signed by the Secretary of Transportation, which finds the granting of a variance would be in the vital national interest.

(b) The burden of proof shall be on the applicant for a variance. The Board shall make findings on the merits of said request based on the aforementioned criteria and either grant or deny the request. The Board may grant a variance in part, or for limited duration, and may impose such conditions on the granting of a variance which it finds appropriate to accomplish the purposes of this Regulation.

(c) In acting upon any variance, the Board shall be subject to the following limitation: the terms of any variance shall not exceed two years or the length of the term of any applicable compliance period which is the subject of a variance

request, whichever is shorter; a variance shall not be granted which is a continuation of or modification to a variance previously granted.

(d) If a variance is requested from Section 5(a) Part 1 of this Regulation for the purpose of permitting a new entrant airplane operator to commence operations at the Airport with affected Stage 2 airplanes, the variance may be granted only on the condition the prospective new entrant airplane operator conducts operations at the Airport with a percentage of Stage 3 operations at least equal to the quarterly airport fleet-wide percentage of Stage 3 aircraft operations at the Airport at the time of entry. Any air carrier not listed on Exhibit A may only apply to operate at the airport as a "new entrant airplane operator."

(e) In the event the Board denies the variance as requested by an airplane operator, such operator may request within 30 days of said denial a written finding of the Secretary of Transportation that granting a variance will be in the "vital national interest." If the Secretary pursuant to Section 7(a)(vii) issues the requested finding, the Board shall grant a variance provided the finding is specific as to why a variance is in the vital national interest considering (i) competition in the air carrier industry, (ii) essential small community air service, (iii) financial viability and continued existence of the operator, and (iv) new service to a city presently without commercial air service to or from Airport. The Board shall not be required to grant a variance pursuant to Section 7(a)(vii) if it would lead to an increase in affected Stage 2 operations at the airport beyond that percentage of Stage 2 operations which is required by the most recent interim compliance date, or if it would permit Stage 2 operations beyond December 31,

1999. Section 7(a)(vii) shall not be applicable to the Board's denial of any variance from Section 7(d) of this Regulation. The Board shall, however, consider any opinion issued by the Secretary of Transportation on the subject of the Board's denial of a variance.

(f) If pursuant to Section 7(a)(vi) an airplane operator secures the required statement of the Secretary of State regarding the granting of the requested variance, the Board shall be obligated to grant a variance.

SECTION 8. ENFORCEMENT AND PENALTIES: Any airplane operator that fails to comply with any part of this Regulation shall be subject to the loss of its Stage 2 operating rights at the Airport.

Prior to initiating enforcement proceedings, the subject airplane operator shall be notified in writing of the violation and shall be afforded the opportunity to respond thereto at a public hearing.

If carrier-by-carrier Stage 3 rules are imposed pursuant to Section 5(d), an airplane operator shall receive ninety (90) days advance written notice prior to losing its Stage 2 operating rights at the Airport.

SECTION 9. SEVERABILITY OF REGULATION: If any provision of this Regulation or the application thereof is held unconstitutional or otherwise unlawful, the remainder of the Regulation and the application of same shall not be affected thereby.

Sec. 2. The City Clerk shall certify to the passage of this Ordinance and cause the same to be published in some daily newspaper printed and published in the City of Los Angeles.

I hereby certify that the foregoing Ordinance was passed by the Council of the City of Los Angeles, at its meeting of _____.

ELIAS MARTINEZ, City Clerk

By_____
Deputy

Approved_____

_____
Mayor

Approved as to Form and Legality

_____
JAMES K. HAHN, City Attorney

By_____

File No._____

ORD/LAX.1
122992/BKL:sm

-12-

RESO. 18298

EXHIBIT A

LOS ANGELES INTERNATIONAL AIRPORT

The annual number of Stage 2 affected airplane operations permitted to be conducted by airlines commencing on June 1, 1990. This list was promulgated pursuant to the Interim LAX Noise Control Moratorium Policy adopted by the Los Angeles City Board of Airport Commissioners on May 31, 1990 under Resolution No. 17151.

AIRLINE	PERMITTED ANNUAL STAGE 2 OPERATIONS	AIRLINE	PERMITTED ANNUAL STAGE 2 OPERATIONS
Aero Argentinas	0	Japan Airlines	450
Aero California	3650	Kalitta Air	834
Aerocancun	0	Key Airlines	18
Aeromexico	1868	KLM Royal Dutch	100
Air America	0	Korean Airlines	688
Air Canada	766	LACSA Airlines	662
Air France	310	Lan Chile	266
Air Jamaica	26	Lot Polish Air	34
Air New Zealand	6	LTU	0
Air Train	398	Lufthansa	388
Airborne Express	520	Malaysian Air	0
Alaska Airlines	5176	Martinair	10
Alitalia	338	Mexicana	7594
All Nippon Airways	62	MGM Air	1348
Amer Trans Air	18	Midway	0
America West	18512	Northwest Air	9360
American	11164	Pan AM	6864
Amerijet Int'l	1560	Philippine Air	536
Avianca	312	Piedmont Air	132
Aviateca	138	Qantas Airways	764
Balair	0	Rosenbalm	1554
British Airways	0	Royal Jordanian	0
CAAC	78	Scandinavian Air	0
Caledonian Air	86	Singapore Air	24
Canadian Pacific	3188	Southern Air	908
China Airlines	330	Southwest	9125
Condor	0	Sun Country	104
Continental	5974	Swiss Air	0
Delta Airlines	46414	TACA	90
DHL	520	Tap Air Portugal	2
Eastern Airlines	0	Trans Continental	22
Ecuatoriana	124	TWA	1590
Egypt Air	0	United Airlines	37242
El Al Israel	218	United Express	0
Emery Worldwide	80	UPS	4
Evergreen Int'l	128	US Air	5190
Federal Express	4490	UTA French Air	0
Finnair	0	Varig Brazil Air	0
Garuda Indonesia	0	Virgin Atlantic	32
Great American	48	West Air/United	0
Hawaiian Air	286	Yugoslav Air	0
Iberia Airlines	186	Zantop	430
Independent Air	26		

EXH-A.LIS/9-2-92/RMB:rc

EXHIBIT B

LOS ANGELES INTERNATIONAL AIRPORT

Commencing on July 1, 1991, the annual number of Stage 2 affected airplane operations permitted to be conducted by airlines at LAX are listed below for specified dates and time periods. This list was promulgated pursuant to the LAX Stage 2 Airplane Phaseout Regulation adopted by the City of Los Angeles Board of Airport Commissioners on December 21, 1992 under Resolution No. 18298.

AIRLINE	PERMITTED ANNUAL STAGE 2 NIGHTTIME OPERATIONS		
	On and After July 1, 1991 1:00 am-5:59 am	On and After January 1, 1994 12 am-5:59 am	On and After January 1, 1996 12 am-6:29 am
Air France	---	52	52
Airborne Express	208	208	260
Alaska Airlines	52	52	52
America West Airlines, Inc.	520	624	884
Amerijet International	---	260	260
Aviateca S.A.	---	52	52
Connie Kalitta Services, Inc.	260	260	364
Continental Airlines	520	520	520
Delta Airlines, Inc.	208	312	936
Evergreen International Airlines	128	128	128
Federal Express	1456	1872	1872
Japan Airlines	312	312	364
Korean Airlines	260	260	260
Lufthansa German Airlines	---	52	52
Mexicana de Aviacion	728	832	832
MGM Grand Air, Inc.	104	104	104
Northwest Airlines, Inc.	312	572	624
Pan American World Airways	312	312	364
Philippine Airlines	---	52	52
Qantas	104	104	104
Rosenbalm Aviation, Inc.	364	364	468
Southwest Airlines Co., Inc.	208	208	260
Trans Continental Airlines	22	22	22

Notes:

This exhibit is based upon annualized Stage 2 operations from Flight Progress Strips between April 2, 1991 to April 8, 1991. Time periods are local Los Angeles time. Flight Progress Strips list airplanes by family, not family/model. Generally, airplane families determine Stage 2 or 3 designation, but occasionally airplane family/model is required to make the determination. Airlines operating airplane families that contain models that are both Stage 2 and Stage 3 have been allotted operations as if they were all Stage 2.

Summary listings of the Flight Progress Strips were compared against April 1991 Revenue Landing Reports and Airline Quarterly Reports, which contain both airplane family and model number. Airlines operating 100% Stage 3 airplanes by family/model number were not allotted any Stage 2 nighttime operations. All operations were then compared to permitted operations according to Exhibit A and capped at that level. In no event shall Exhibit B operations be greater than Exhibit A operations.

EXH-B.LIS/9-1-92/AS:rc

CITY OF LOS ANGELES
CALIFORNIA

TOM BRADLEY
MAYOR

ELIAS MARTINEZ
City Clerk

J. Michael Carey
Executive Officer

When making inquiries relative to this matter refer to File No.

91-0905
91-0906

Office of
CITY CLERK
Council and Public Services
Room 395, City Hall
Los Angeles, CA 90012
Council File Information - 485-5703
General Information - 485-5705

Pat Letcher
Chief Legislative Assistant

CD 6

June 30, 1993

Department of Airports
Airport Commission
City Attorney
City Administrative Officer
Chief Legislative Analyst

RE: ESTABLISHING STAGE 2 AIRPLANE PHASEOUT (NOISE) REGULATIONS FOR COMMERCIAL AIRCRAFT OPERATING AT THE LOS ANGELES AND ONTARIO INTERNATIONAL AIRPORTS

At the meeting of the Council held June 23, 1993, the following action was taken:

Attached report adopted, as amended	X
See attached motion adopted (Flores - Galanter)	X
Two Ordinances adopted	X
Ordinance Number	168852
Publication date	07-02-93
Effective date	08-02-93
Mayor approved	06-30-93
Ordinance Number	168853
Publication date	07-02-93
Effective date	08-02-93
Mayor approved	06-29-93

Nancy Russell

City Clerk
bem

stcno\910905

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File Nos. 91-0905
91-0906

TO THE COUNCIL OF THE
CITY OF LOS ANGELES

Your COMMERCE, ENERGY AND NATURAL RESOURCES COMMITTEE

reports as follows:

	Yes	No
Public Comments	XX	__

COMMERCE, ENERGY AND NATURAL RESOURCES COMMITTEE REPORT and ORDINANCES relative to establishing Stage 2 airplane phaseout (noise) regulations for commercial aircraft operating at Los Angeles and Ontario International Airports.

Recommendations for Council action, as recommended by the City Administrative Officer:

1. PRESENT and ADOPT accompanying two (2) Ordinances establishing Stage 2 airplane phaseout (noise) regulations for commercial aircraft operating at Los Angeles International Airport and Ontario International Airport.

2. NOT PRESENT and ORDER FILED two (2) draft Ordinances dated May 16, 1991 relative to noise regulations, inasmuch as these are "old" draft Ordinances.

Summary

On June 8, 1993, the Commerce, Energy and Natural Resources Committee considered and approved recommendations of the City Administrative Officer relative to adopting two proposed Ordinances to establish a Stage 2 airplane phaseout (noise) regulations for commercial (air carrier) aircraft operating at Los Angeles and Ontario International Airports.

In 1991, the City Council considered draft Ordinances relative to phasing out the operations of the more noisy Stage 2 commercial aircraft at Los Angeles and Ontario International Airports by the year 2000. The primary differences between the proposed Ordinances and the requirements of the Federal Aviation Administration (FAA) at that time was the City schedule to achieve reductions in the number of operations sooner.

Enactment of these earlier draft Ordinances was successfully frustrated by the FAA under its broad authority to withhold noise mitigation grant funds and approval of applications by a local airport operator to impose the Passenger Facility Charge (PFC) if

locally enacted restrictions on Stage 2 and Stage 3 aircraft operations are believed to be inconsistent with the needs of the national air transport system. The City Council returned the previous draft Ordinances to the Commerce, Energy and Natural Resources Committee and requested the Department of Airports (DOA) to resolve the concerns of the FAA.

The replacement Ordinances are believed by the DOA Executive Director and the City Attorney to resolve the concerns of the FAA. If adopted, the noise regulations should no longer cause difficulty in receiving federal noise grant funds or jeopardize receipt of PFC's in the future. The City Attorney believes that the FAA concurs with this view.

Although not as aggressive in limiting Stage 2 operations as the prior draft Ordinances, the replacement Ordinances will permit regulation of Stage 2 operations at LAX and Ontario, i.e., there is a definable limit on the number of Stage 2 operations and penalties for violations.

The Committee recommended that the Ordinances dated May 16, 1991 be received and thereafter filed, inasmuch as they are old drafts, and further recommended that the currently proposed Ordinances relative to noise restrictions at Los Angeles and Ontario International Airports be adopted by the City Council.

Respectfully submitted,

COMMERCE, ENERGY AND NATURAL RESOURCES COMMITTEE

KC
6/9/93
CD 6 (91-0905)
Enc: Ordinances (4)

#910905

REPORT
ADOPTED
*AS AMENDED
JUN 23 1993

LOS ANGELES CITY COUNCIL
SEE ATTACHED MO.
ORDS ADOPTED

MOTION 40 A

The Commerce, Energy and Natural Resources Committee Report and Ordinances considered Stage 2 airplane phase out (noise regulations) for commercial aircraft operating at Los Angeles Airport and Ontario International airports.

The Committee was advised by the City Attorney and the Executive Director of the Department of Airports, that the Ordinance for commercial aircraft operating at Los Angeles airport does not apply to private aircraft and applies only to federally certificated air carriers, and that a letter had been had issued so stating.

The Committee instructed the Department of Airports to include the letter in the file to clarify this issue.

I THEREFORE MOVE THAT the Committee report be amended to add an instruction to the City Attorney's office to include the letter from the Department of Airports in the file to clarify this issue.

PRESENTED BY: Joan Milke Flores
Joan Milke Flores
Councilwoman, 15th District

SECONDED BY:

mtn105

* MO.

ADOPTED

JUN 23 1993

LOS ANGELES CITY COUNCIL

RESOLUTION NO. 18298

WHEREAS, aircraft noise has been of significant concern at Los Angeles International Airport since the advent of the jet age in 1959; and

WHEREAS, in 1969, the State of California adopted an Airport Noise Law and thereafter approved noise regulations, with amendments thereto, requiring airport operators to reduce the noise impact of jet aircraft in the vicinity of California airports; and

WHEREAS, in Air Transport Association v. Crotti, etc., et al., a case to which the City of Los Angeles was a party, the California Noise Regulations were ruled constitutional on their face with respect to Community Noise Equivalent Levels (CNEL) and it was held that each airport proprietor has certain duties, rights, obligations, and powers in this regard; and

WHEREAS, in Aaron, et al. v. City of Los Angeles, the California Court of Appeal imposed liability upon the City of Los Angeles, as the airport proprietor, for the diminution in property values due to noise emanating from jet aircraft operating to and from Los Angeles International Airport; and

WHEREAS, in Japan Air Lines, et al. v. City of Los Angeles, the California Court of Appeal held, as to property damage under the law of eminent domain, that the City of Los Angeles is not entitled to indemnification from air carriers operating at Los Angeles International Airport; and

WHEREAS, in Baker v. Burbank-Glendale-Pasadena Airport Authority, the California Supreme Court held airport proprietors may be held liable for emotional distress and personal injury damages caused by aircraft noise under the legal theory of nuisance; and

WHEREAS, the management of the Department of Airports has been apprised of the holdings of the United States Supreme Court in Griggs v. Allegheny County and Lockheed Air Terminal, Inc. v. City of Burbank, the Federal Circuit Court of Appeals Opinion in the Concorde 1 and 2 cases with respect to the Port Authority of New York and New

P.O. Box 92216, Los Angeles, California 90009-2216 · (310) 646-5252 · Telex 65-3413 · FAX (310) 646-05

Jersey, and the Federal District Courts' Opinions in National Aviation v. City of Hayward and San Diego Unified Port District v. Gianturco, which relate in various ways to the rights, duties, obligations, and powers inherent in an airport proprietor with regard to the liability for and the control of jet aircraft noise; and

WHEREAS, the Los Angeles City Attorney's Office has reported to the Board of Airport Commissioners on numerous occasions, by virtue of the above-referenced statute, regulations, decisions, and the common law rights vested in the airport proprietor that said Board has the obligation, duty, and right to take affirmative steps to reduce the noise impact of aircraft using the City of Los Angeles' Airports; and

WHEREAS, the Board of Airport Commissioners, by Resolution No. 11650, dated May 7, 1979, adopted the Los Angeles International Airport Noise Control Regulation to limit and reduce the noise from aircraft operations through the phaseout of FAR Part 36 Stage 1 aircraft, said Regulation being adopted on May 29, 1979 by Los Angeles City Council Ordinance No. 152,455; and

WHEREAS, Los Angeles City Council Ordinance No. 152,455, pertaining to the phaseout of Stage 1 aircraft at Los Angeles International Airport, was upheld in 1985 as valid and enforceable by the Ninth Circuit Court of Appeals in Empresa Ecuatoriana de Aviacion v. City of Los Angeles; and

WHEREAS, the Board of Airport Commissioners, by Resolution No. 16854, dated September 27, 1989, directed the Executive Director to investigate and definitively prepare proposed noise and access restrictions ("proposed regulation") regarding the phaseout,

nighttime operations, and non-addition of FAR Part 36 Stage 2 aircraft at Los Angeles International Airport; and

WHEREAS, after submission of the Executive Director's proposed regulation, the Board of Airport Commissioners, by Resolution No. 17150, dated May 31, 1990, directed the Executive Director to circulate for review and comment the proposed regulation to all concerned parties including the air carriers, local governments, the Federal Aviation Administration, the LAX Area and Citywide Advisory Committees, and the Air Transport Association and to simultaneously initiate the appropriate environmental review process; and

WHEREAS, as an interim measure, the Board of Airport Commissioners, by Resolution No. 17151, dated May 31, 1990, adopted an Interim Noise Control Moratorium Policy to prohibit as a policy the introduction of additional new aircraft operations by FAR Part 36 Stage 2 aircraft at Los Angeles International Airport; and

WHEREAS, the Board of Airport Commissioners, by Resolution No. 17601, dated May 15, 1991, adopted a proposed Stage 2 regulation which was forwarded to the Los Angeles City Council for approval by ordinance; and

WHEREAS, the Los Angeles City Council returned the proposed regulation without taking action to adopt it as an ordinance; and

WHEREAS, in accordance with discussions and negotiations with the Federal Aviation Administration, the Board of Airport Commissioners is now amending and readopting the proposed Stage 2 regulation to amend certain provisions to address the concerns expressed by the Federal Aviation Administration; and

WHEREAS, the amending language does not significantly change the general scope and effect of the proposed regulation and retains the object of phasing out all Stage 2 aircraft by the year 2000; however, the amending language will permit the Board of Airport Commissioners to grant variances in additional situations and make the LAX regulation more closely aligned with federal Stage 2/3 regulations;

WHEREAS, this action amends Board of Airport Commissioners Resolution No. 17601 and the provisions of the proposed regulation adopted by said Resolution; and

WHEREAS, the proposed amended regulation ("proposed regulation") is intended to apply only to FAR Part 36 Stage 2 aircraft operations and is not intended to regulate or restrict Stage 3 aircraft operations; and

WHEREAS, in order to comply with the California Environmental Quality Act and to ensure that the proposed regulation is fair, nondiscriminatory, economically sound, and not unduly burdensome in interstate commerce, the Board of Airport Commissioners caused the proposed regulation to be widely distributed and, thereafter, public hearings held with respect to the proposed regulation; and

WHEREAS, pursuant to said process, public meetings and hearings were held on May 31, 1990, August 28, 1990, March 25, 1991, and May 15, 1991 affording the opportunity for comments by governmental agencies, elected officials, industry representatives, airport neighbors, and members of the general public, which meetings and hearings were widely attended by the public; and

WHEREAS, the Federal Aviation Administration received copies of the proposed regulation at the outset of the proposed action which resulted in oral and written presentations by Federal Aviation Administration representatives to the Board of Airport Commissioners

with respect to the provisions of the proposed regulation; and

WHEREAS, the Federal Aviation Administration sent a written request that the Board of Airport Commissioners study and investigate 15 specific items, prior to adopting the proposed regulation, which the Department of Airports accomplished with the aid of a professional consultant study of the economic effect of the proposed regulation both at Los Angeles International Airport and nationally, including an assessment of other economic alternatives; and

WHEREAS, the United States Congress, on November 5, 1990, adopted the "Airport Noise and Capacity Act of 1990" enacting a national Aviation Noise Policy which expressly provides in Section 9304(a)(2)(A) that Stage 2 noise regulations "proposed" by local airports prior to October 1990 are categorically exempt from the provisions of the Act; and

WHEREAS, this proposed regulation qualifies as a Stage 2 regulation proposed prior to October 1, 1990 and, therefore, is expressly grandfathered by the provisions of Section 161.201(a)(1) of the Federal Aviation Regulation and Section 9304(2)(A) of the Airport Noise and Capacity Act of 1990 [49 U.S.C. 2153(a)(2)(A) and 49 U.S.C. 1305]; and

WHEREAS, the Executive Director reviewed the economic and environmental studies, reviewed and considered the comments submitted by all interested parties, analyzed the comments of the Federal Aviation Administration, weighed the practical alternatives, and hereby recommends the Board of Airport Commissioners' adoption of the proposed regulation; and

WHEREAS, the Board of Airport Commissioners has reviewed the economic and environmental studies, reviewed and considered the recommendation of the Executive Director, and has considered other practical alternatives to this proposed regulation, and hereby finds the proposed regulation to be a reasonable, feasible, and legally appropriate method of reducing the impact of jet aircraft engaging in operations at Los Angeles International Airport; and

WHEREAS, pursuant to the powers of the Board of Airport Commissioners contained in the City Charter of the City of Los Angeles, the Board of Airport Commissioners finds that the proposed regulation achieves a balance between the needs of the community impacted by jet aircraft noise, the needs of the City of Los Angeles, and the region served by Los Angeles International Airport as a whole and the requirements of the air carriers operating at this facility; and

WHEREAS, the purpose of the Los Angeles International Airport Stage 2 Airplane Phaseout Regulation, as amended, is to reduce airplane

noise in the communities surrounding the airport by: (a) prohibiting the introduction of any newly affected airplane operations with Stage 2 airplanes; (b) implementing a four-phase program to eliminate operations with Stage 2 airplanes to be completed by January 1, 2000; (c) implementing a program to limit nighttime affected airplane operations with Stage 2 airplanes; and (d) assuring that all affected airplanes operated at the airport on or after January 1, 2000 comply with the Stage 3 Noise Standards of Part 36; and

WHEREAS, the environmental consequences of this action has been previously assessed by the Board of Airport Commissioners by Resolution No. 17600, dated May 15, 1991, with the approval of a final Environmental Impact Report (EIR); and

WHEREAS, this action is in compliance with the California Environmental Quality Act and the City of Los Angeles Guidelines, Article III, 2.(i);

NOW, THEREFORE, BE IT RESOLVED that the Board of Airport Commissioners hereby AMENDS Resolution No. 17601; APPROVES and ADOPTS the Los Angeles International Airport Stage 2 Airplane Phaseout Regulation, a copy of which is attached hereto; DIRECTS the Executive Director to transmit the Regulation to the Los Angeles City Council for consideration and adoption in the form of an ordinance; REQUESTS the Los Angeles City Council to adopt the Resolution as an ordinance upon preparation and approval as to legal form by the City Attorney; DIRECTS the Executive Director, if necessary, to transmit the Regulation to the Los Angeles City Council for adoption in ordinance form; and RESCINDS Resolution No. 11650 upon final adoption of this Resolution No. 18299 by ordinance; and

BE IT FURTHER RESOLVED this Regulation, attached hereto and incorporated herein, shall be applicable in all respects to each and every affected aircraft that now operates, or in the future may operate, at Los Angeles International Airport.

oOo

I hereby certify that the foregoing is a true and correct copy of Resolution No. 18298 adopted by the Board of Airport Commissioners at a regular meeting held Monday, December 21, 1992.

Elaine E. Staniec

Elaine E. Staniec - Secretary
BOARD OF AIRPORT COMMISSIONERS

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APPENDIX F CALIFORNIA DIVISION OF AERONAUTICS NOISE STANDARDS

For noise assessment, CEQA requires the determination of exposure of persons to noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies. For airport noise studies, the California Division of Aeronautics has adopted noise standards that state, in part:

The following rules and regulations are promulgated in accordance with Article 3, Chapter 4, Part 1, Division 9, Public Utilities Code (Regulation of Airports) to provide noise standards governing the operation of aircraft and aircraft engines for all airports operating under a valid permit issued by the Department of Transportation. These standards are based upon two separate legal grounds: (1) the power of airport proprietors to impose noise ceilings and other limitations on the use of the airport, and (2) the power of the state to act to an extent not prohibited by federal law. The regulations are designed to cause the airport proprietor, aircraft operator, local governments, pilots, and the department to work cooperatively to diminish noise problems. The regulations accomplish these ends by controlling and reducing the noise impact area in communities in the vicinity of airports.[1]

The level of noise acceptable to a reasonable person residing in the vicinity of an airport is established as a CNEL value of 65 dB for purposes of these regulations. This criterion level has been chosen for reasonable persons residing in urban residential areas where houses are of typical California construction and may have windows partially open. It has been selected with reference to speech, sleep, and community reaction.[2]

The Division of Aeronautics noise standards further define land uses that are incompatible with aircraft noise as follows:[3]

Residences, including but not limited to, detached single-family dwellings, multi-family dwellings, high-rise apartments, condominiums and mobile homes, unless:

An avigation easement for aircraft noise has been acquired by the airport proprietor;

The dwelling unit was in existence at the same location prior to January 1, 1989, and has adequate acoustic insulation to ensure an interior CNEL of 45 dB or less due to aircraft noise in all habitable rooms. However, acoustic treatment alone does not convert residences having an exterior CNEL of 75 dB or greater due to aircraft noise to a compatible land use if the residence has an exterior normally occupiable private habitable area such as a backyard, patio or balcony;

The residence is a high rise apartment or condominium having an interior CNEL of 45 dB or less in all habitable rooms due to aircraft noise, and an air circulation or air conditioning system, as appropriate;

The airport proprietor has made a genuine effort as determined by the department in accordance with adopted land use compatibility plans and appropriate laws and regulations to acoustically treat residences exposed to an exterior CNEL less than 80 dB (75 dB if the residence has an exterior normally occupiable private habitable area such as a backyard, patio, or balcony) or acquire

[1] California Code of Regulations (CCR). 1990. Title 21, Subchapter 6, Noise Standards. Register 90. No. 10, 3/10/90. California Division of Aeronautics, Department of Transportation. Sacramento, CA. Article 1, General, Section 5001, p. 219.
[2] Ibid., Article 1, General, Section 5006, p. 224.
[3] Ibid., Article 1, General, Section 5014, pp. 225–226.

avigation easements, or both, for the residences involved, but the property owners have refused to take part in the program; or

The residence is owned by the airport proprietor;

Public and private schools of standard construction for which an avigation easement for noise has not been acquired by the airport proprietor, or that do not have adequate acoustic performance to ensure an interior CNEL of 45 dB or less in all classrooms due to aircraft noise;

Hospitals and convalescent homes for which an avigation easement for noise has not been acquired by the airport proprietor, or that do not have adequate acoustic performance to provide an interior CNEL of 45 dB or less due to aircraft noise in all rooms used for patient care; and

Churches, synagogues, temples, and other places of worship for which an avigation easement for noise has not been acquired by the airport proprietor or that do not have adequate acoustic performance to ensure an interior CNEL of 45 dB or less due to aircraft noise.

APPENDIX G NOISE TERMINOLOGY

Introduction

To assist reviewers in interpreting the complex noise metrics used in evaluating airport noise, this appendix introduces eight acoustical descriptors of noise, roughly in increasing degree of complexity:

Decibel, dB
A-Weighted Decibel, dB
Maximum A-Weighted Sound Level, Lmax
Sound Exposure Level, SEL
Single Event Noise Exposure Level, SENEL
Equivalent A-Weighted Sound Level, Leq
Day-Night Average Sound Level, DNL
Community Noise Equivalent Level, CNEL

These noise metrics form the basis for the majority of noise analysis conducted at airports in California and the U.S. as a whole.

Decibel, dB

All sounds come from a sound source -- a musical instrument, a voice speaking, an airplane passing overhead. It takes energy to produce sound. The sound energy produced by any sound source is transmitted through the air in sound waves -- tiny, quick oscillations of pressure just above and just below atmospheric pressure. These oscillations, or sound pressures, impinge on the ear, creating the sound we hear.

Our ears are sensitive to a wide range of sound pressures. Although the loudest sounds that we hear without pain have about one million times more energy than the quietest sounds we hear, our ears are incapable of detecting small differences in these pressures. Thus, to better match how we hear this sound energy, we compress the total range of sound pressures to a more meaningful range by introducing the concept of sound pressure level.

Sound pressure levels are measured in decibels (or dB). Decibels are logarithmic quantities reflecting the ratio of the two pressures, the numerator being the pressure of the sound source of interest, and the denominator being a reference pressure (the quietest sound we can hear).

The logarithmic conversion of sound pressure to sound pressure level (SPL) means that the quietest sound that we can hear (the reference pressure) has a sound pressure level of about 0 dB, while the loudest sounds that we hear without pain have sound pressure levels of about 120 dB. Most sounds in our day-to-day environment have sound pressure levels on the order of 30 to 100 dB.

Because decibels are logarithmic quantities, combining decibels is unlike common arithmetic. For example, if two sound sources each produce 100 dB operating individually and they are then operated together, they produce 103 dB -- not the 200 decibels we might expect. Four equal sources operating simultaneously produce another three decibels of noise, resulting in a total sound pressure level of 106 dB. For every doubling of the number of equal sources, the sound pressure level goes up another three decibels. A tenfold increase in the number of sources makes the sound pressure level go up 10 dB. A hundredfold increase makes the level go up 20 dB, and it takes a thousand equal sources to increase the level 30 dB.

If one noise source is much louder than another, the two sources operating together will produce virtually the same sound pressure level (and sound to our ears) that the louder source would produce alone. For example, a 100 dB source plus an 80 dB source produce approximately 100 dB of noise when operating together (actually, 100.04 dB). The louder source "masks" the quieter one. But if the quieter source gets louder, it will have an increasing effect on the total sound pressure level such that, when the two sources are equal, as described above, they produce a level three decibels above the sound of either one by itself.

Conveniently, people also hear in a logarithmic fashion, which affects the manner in which we interpret, or perceive, Two useful rules of thumb to remember when comparing sound levels are: (1) a 6 to 10 dB increase in the sound pressure level is sometime described to be about a doubling of loudness, and (2) changes in sound pressure level of less than about three decibels are not readily detectable outside of a laboratory environment.

A-Weighted Decibel

An important characteristic of sound is its frequency, or "pitch". This is the per-second rate of repetition of the sound pressure oscillations as they reach our ear, expressed in units known as Hertz (Hz), formerly called cycles per second.

When analyzing the total noise of any source, acousticians often break the noise into frequency components (or bands) to determine how much is low-frequency noise, how much is middle-frequency noise, and how much is high-frequency noise. This breakdown is important for two reasons:

Our ear is better equipped to hear mid and high frequencies and is less sensitive to lower frequencies. Thus, we find mid- and high-frequency noise more annoying.
Engineering solutions to a noise problem are different for different frequency ranges. Low-frequency noise is generally harder to control.

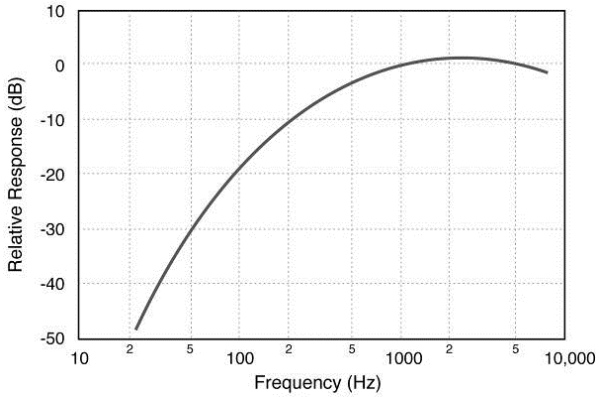
The normal frequency range of hearing for most people extends from a low of about 20 Hz to a high of about 10,000 to 15,000 Hz. People respond to sound most readily when the predominant frequency is in the range of normal conversation, typically around 1,000 to 2,000 Hz. The acoustical community has defined several “filters,” which approximate this sensitivity of our ear and thus, help us to judge the relative loudness of various sounds made up of many different frequencies.

The "A" filter (or “A weighting”) does this best for most environmental noise sources. A-weighted sound levels are measured in decibels, just like unweighted. To avoid ambiguity, A-weighted sound levels should be identified as such (e.g. "an A-weighted sound level of 85 dB") or stated up front that all noise levels presented in this document are A-weighted unless otherwise specified.

Government agencies in the U.S (and most governments worldwide) recommend or require the use of A-weighted sound levels for measuring, modeling, describing, and assessing aircraft sound levels (and sound levels from most other transportation and environmental sources).

Figure G-1 depicts A-weighting adjustments to sound from approximately 20 Hz to 10,000 Hz.

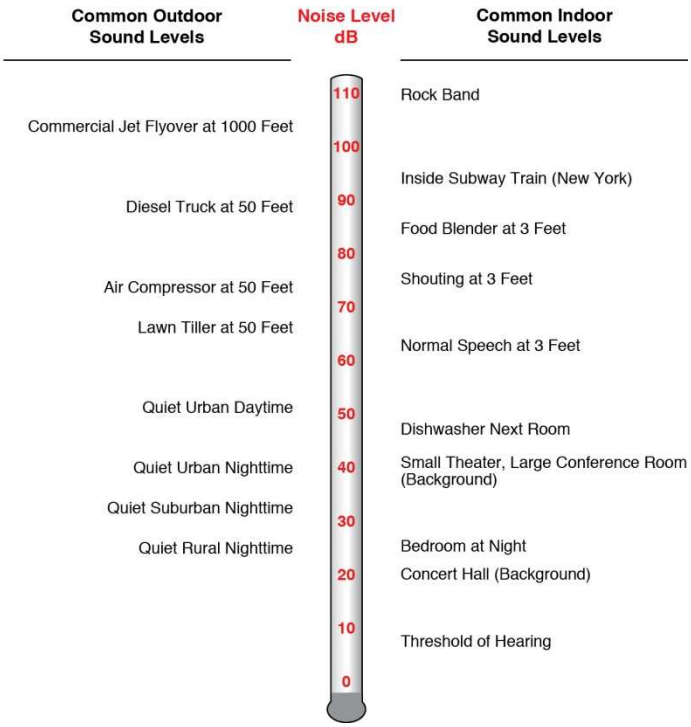
Figure G-1 A-Weighting Frequency Response
Source: HMMH



The A-weighted filter significantly de-emphasizes those parts of the total noise at lower and higher frequencies (below about 500 Hz and above about 10,000 Hz) where we do not hear as well. The filter has very little effect, or is nearly "flat", in the middle range of frequencies between 500 and 10,000 Hz where we hear quite easily. Because this filter generally matches our ears' sensitivity, sounds having higher A-weighted sound levels are usually judged to be louder than those with lower A-weighted sound levels, a relationship which otherwise might not be true. It is for this reason that acousticians normally use A-weighted sound levels to evaluate environmental noise sources.

Figure G-2 depicts representative A-weighted sound levels for a variety of common sounds.

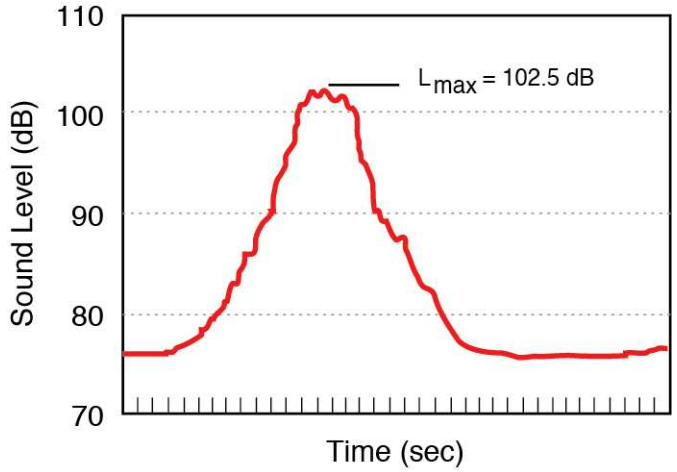
Figure G-2 Representative A-Weighted Sound Levels
Source: HMMH



Maximum A-Weighted Sound Level, Lmax

An additional dimension to environmental noise is that A-weighted levels vary with time. For example, the sound level increases as an aircraft approaches, then falls and blends into the background as the aircraft recedes into the distance (though even the background varies as birds chirp, the wind blows, or a vehicle passes by). This is illustrated in Figure G-3.

Figure G-3 Variation in the A-Weighted Sound Level over Time
Source: HMMH



Because of this variation, it is often convenient to describe a particular noise "event" by its maximum sound level, abbreviated as Lmax. In Figure G-3 the Lmax is approximately 102.5 dB.

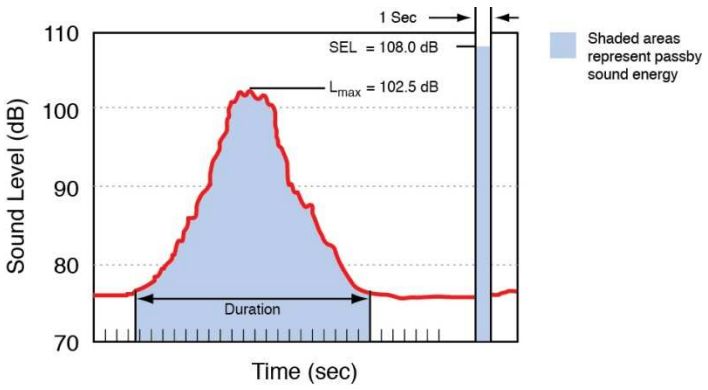
While the maximum level is easy to understand, it suffers from a serious drawback when used to describe the relative “noisiness” of an event such as an aircraft flyover; i.e., it describes only one dimension of the event and provides no information on the event’s overall, or cumulative, noise exposure. In fact, two events with identical maximum levels may produce very different total exposures. One may be of very short duration, while the other may continue for an extended period and be judged much more annoying. The next sections introduce two closely related measures that account for this concept of a noise "dose," or the cumulative exposure associated with an individual “noise event” such as an aircraft flyover.

Sound Exposure Level, SEL

The most commonly used measure of cumulative noise exposure for an individual noise event, such as an aircraft flyover, is the Sound Exposure Level, or SEL. SEL is a summation of the A-weighted sound energy over the entire duration of a noise event. SEL expresses the accumulated energy in terms of the one-second-long steady-state sound level that would contain the same amount of energy as the actual time-varying level. In simple terms, SEL “compresses” the energy into a single second.

Figure G-4 depicts this compression.

Figure G-4 Graphical Depiction of Sound Exposure Level
Source: HMMH



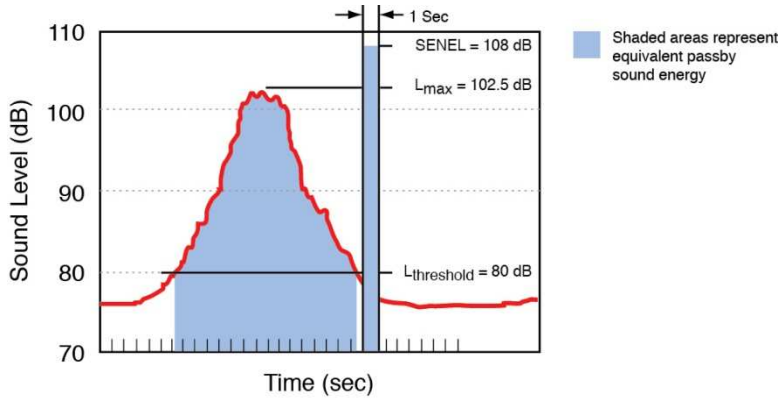
Note that because SEL is normalized to one second, it almost always will be a higher value than the event's Lmax. In fact, for most aircraft flyovers, SEL is on the order of five to 12 dB higher than Lmax.

Single Event Noise Exposure Level, SENEL

Caltrans Division of Aeronautics noise standards regulations (discussed in Appendix F) require use of a measure called the Single Event Noise Exposure Level, or SENEL, to describe the cumulative noise exposure for an individual noise event, such as an aircraft flyover. SENEL is a very slight variation on SEL. Just like SEL, it is the one-second-long steady-state level that contains the same amount of energy as the actual time-varying level. However, unlike SEL, it is calculated only over the period when the level exceeds a selected threshold.

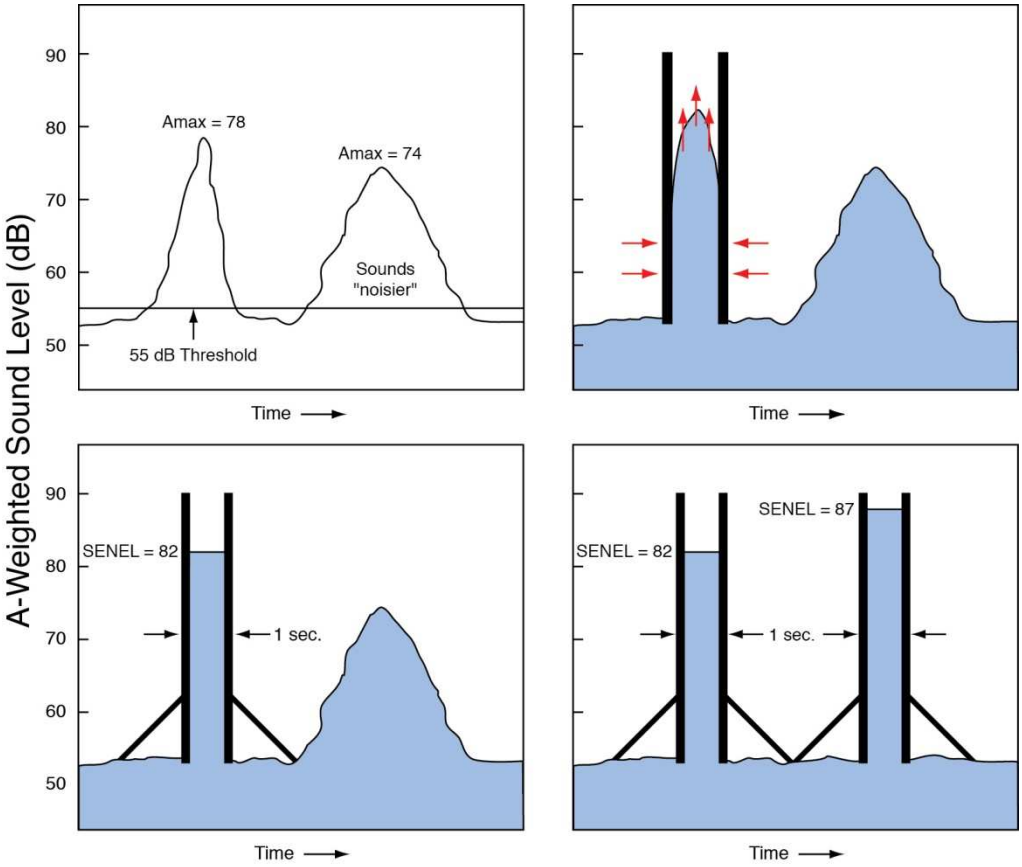
Figure G-5 depicts the SENEL concept for the noise event used in the Figure G-4 SEL example, but with an 80 dB SENEL threshold value. Note that even though the SENEL is calculated over a shorter duration, both metrics have the value of 108 dB. This situation is typical for most noise events; for all but very unusual noise events, as long as the threshold is at least 10 dB below the maximum level, the SEL and SENEL values will be within 0.1 dB.

Figure G-5 Graphical Depiction of Single Event Noise Exposure Level
Source: HMMH



Because SENEL is a cumulative measure, a higher SENEL can result from either a louder or longer event, or some combination. Figure G-6 provides a representative example: The longer duration noise event on the right results in a higher SENEL than the event on the left, even though it has a lower Lmax.

Figure G-6 Graphical Depiction of Single Event Noise Exposure Level for Two Noise Events with Different Maximums and Durations
Source: HMMH



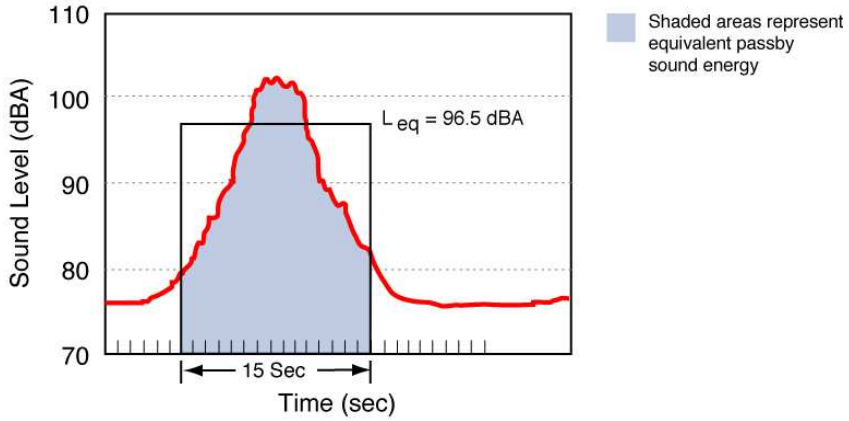
SEL and SENEL provide bases for comparing noise events that generally match our impression of their overall "noisiness," including the effects of both duration and level; the higher the SEL or SENEL, the more annoying a noise event is likely to be.

Equivalent A-Weighted Sound Level, Leq

The Equivalent Sound Level, abbreviated Leq, is a measure of the exposure resulting from the accumulation of sound levels over a particular period of interest; e.g., an hour, an eight-hour school day, nighttime, or a full 24-hour day. The applicable period should always be identified or clearly understood when discussing the metric.

Leq may be thought of as a constant sound level over the period of interest that contains as much sound energy as the actual varying level. It is a way of assigning a single number to a time-varying sound level. This is illustrated in Figure G-7.

Figure G-7 Example of a One-Minute Equivalent Sound Level
Source: HMMH



In airport noise applications, Leq is often presented for consecutive one-hour periods to illustrate how the hourly noise dose rises and falls throughout a 24-hour period as well as how certain hours are significantly affected by a few loud aircraft.

Day-Night Average Sound Level, DNL or Ldn

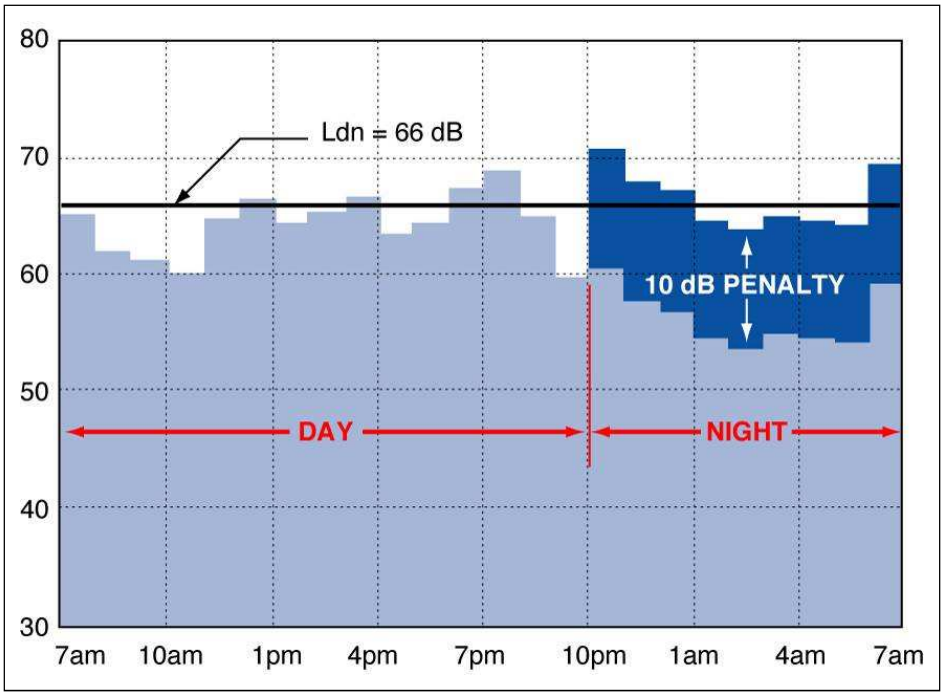
The previous sections address noise measures that account for short term fluctuations in A-weighted levels as sound sources come and go affecting the overall noise environment. The Day-Night Average Sound Level (DNL or Ldn) represents a 24-hour A-weighted noise dose. DNL is essentially equal to the 24-hour A-weighted Leq, with one important adjustment: noise occurring at night – from 10 pm through 7 am – is "factored up." The factoring up can be made in one of two ways:

Weighting, by counting each nighttime noise contribution 10 times; e.g., if DNL is calculated by summing the SEL of aircraft operations over a 24-hour period, each nighttime operation is represented by 10 identical daytime operations.
Penalizing, by adding 10 dB to all nighttime noise contributions; e.g., if DNL is calculated from the SEL of aircraft operations occurring over a 24-hour period, 10 dB are added to the SEL values for nighttime operations.

The 10 dB adjustment accounts for our greater sensitivity to nighttime noise and the fact lower ambient levels at night tend to make noise events, such as aircraft flyovers, more intrusive.

Figure G-8 depicts this adjustment graphically.

Figure G-8 Example of a Day-Night Average Sound Level Calculation
Source: HMMH



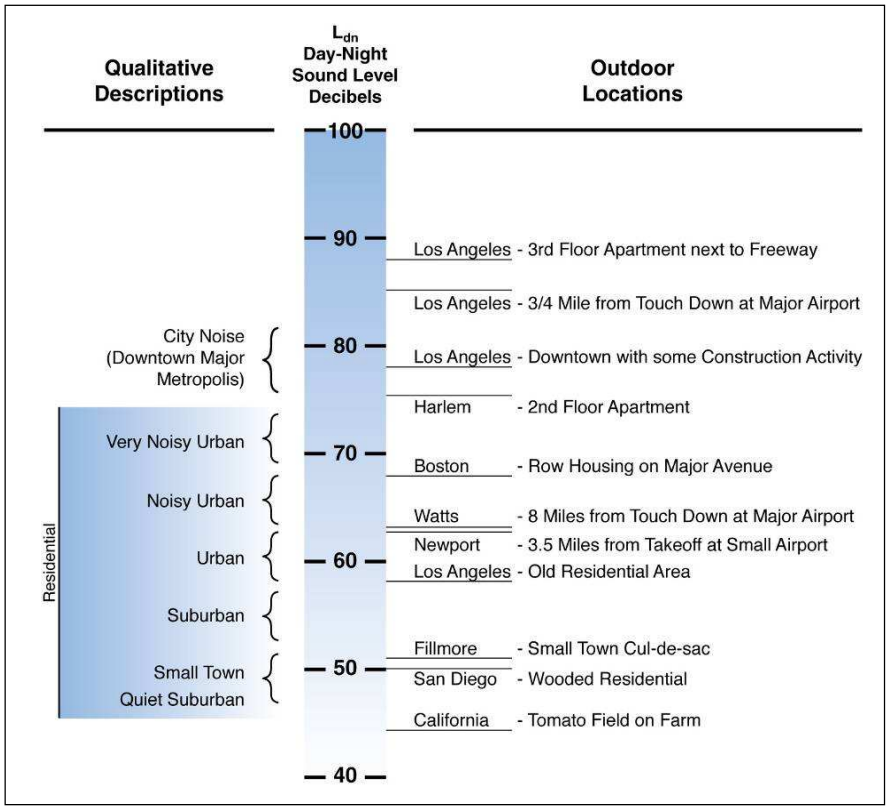
Most aircraft noise studies utilize computer-generated estimates of DNL, determined by adding up the energy from the SELs from each event, with the 10 dB penalty / weighting applied to night operations. Computed values of DNL are often depicted as noise contours reflecting lines of equal exposure around an airport (much as topographic maps indicate contours of equal elevation). The contours usually reflect long-term (annual average) operating conditions, taking into account the average flights per day, how often each runway is used throughout the year, and where over the surrounding communities the aircraft normally fly. Alternative time frames may also be helpful in understanding shorter term aspects of a noise environment.

Why is DNL used to describe noise around airports? The U.S. Environmental Protection Agency identified DNL as the most appropriate measure of evaluating airport noise based on the following considerations:

It is applicable to the evaluation of pervasive long-term noise in various defined areas and under various conditions over long periods of time.
It correlates well with known effects of noise on individuals and the public.
It is simple, practical, and accurate. In principal, it is useful for planning as well as for enforcement or monitoring purposes.
The required measurement equipment, with standard characteristics is commercially available.
It was closely related to existing methods currently in use.

Representative values of DNL in our environment range from a low of 40 to 45 dB in extremely quiet, isolated locations, to highs of 80 or 85 dB immediately adjacent to a busy truck route. DNL would typically be in the range of 50 to 55 dB in a quiet residential community and 60 to 65 dB in an urban residential neighborhood. Figure G-9 presents representative outdoor DNL values measured at various U.S. locations.

Figure G-9 Examples of Measured Day-Night Average Sound Levels
Source: USEPA 1974, p.14.



When preparing environmental noise analyses, the FAA considers a change of 1.5 dB within the DNL 65 dB contour to be "significant". If a change of 1.5 dB is observed, analysts should look between the 60 and 65 dB contours to see if there are areas of change of 3 dB or more; this is also considered "significant impact".

The previous discussion in this appendix provided rules of thumb for interpreting moment-to-moment changes in sound level; the following guidelines address interpreting changes in cumulative exposure:

Table G-1 Guidelines for Interpreting Changes in Cumulative Exposure
Source: HMMH

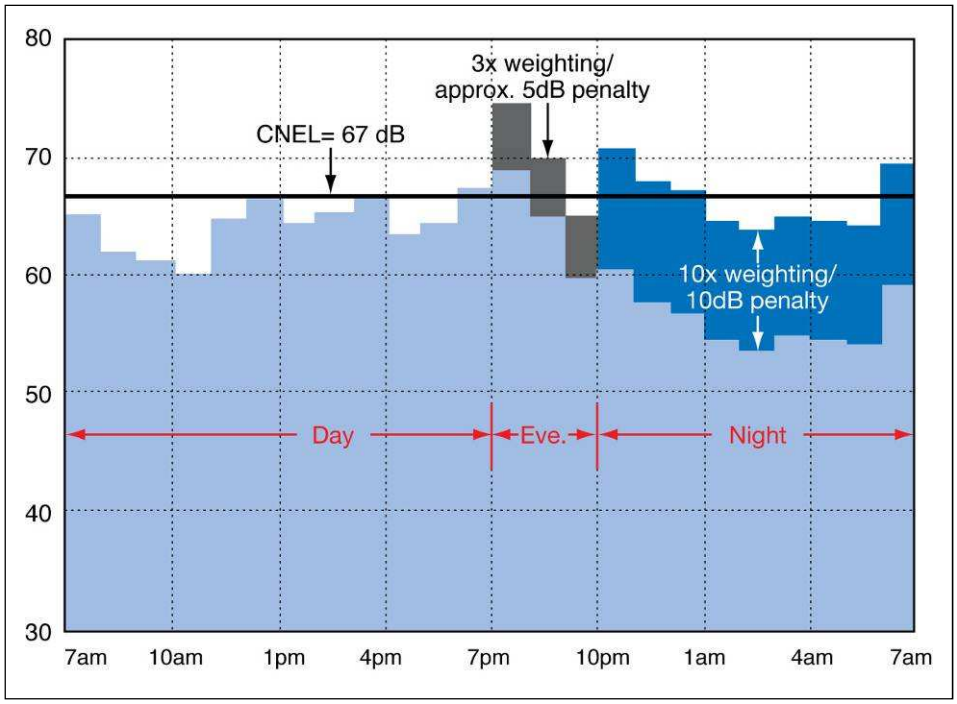
DNL Change	Community Response	Mitigation
0 – 2 dB	May be noticeable	Abatement may be beneficial
2 – 5 dB	Generally noticeable	Abatement should be beneficial
Over 5 dB	A change in community reaction is likely	Abatement definitely beneficial

Most public agencies dealing with noise exposure, including the Federal Aviation Administration (FAA), Department of Defense, and Department of Housing and Urban Development (HUD), have adopted DNL in their guidelines and regulations. As noted in the following section, the state of California requires the use of a variant of DNL for use in airport noise assessments.

Community Noise Equivalent Level, CNEL

California Division of Aeronautics noise standards regulations (discussed in Appendix F) require use of a slight variation of DNL to express cumulative A-weighted noise exposure over any number of days – the Community Noise Equivalent Level (CNEL). CNEL differs from DNL in one way: It adds an "evening" (7 pm – 10 pm) period during which noise events are weighted by a factor of three, which is mathematically equivalent to adding approximately a 4.77 dB penalty. Figure G-10 depicts this adjustment graphically.

Figure G-10 Example of a Community Noise Equivalent Level Calculation
Source: HMMH



Unless noise exposure is calculated for an unlikely situation where there is no noise-producing activity during the evening period (an unlikely situation) CNEL will always be greater than DNL. However, from a practical standpoint this difference is rarely more than one decibel. For this reason, the DNL values shown in Figure G-9 are reasonably representative of CNEL values for the same environments, as are guidelines for interpreting changes in exposure discussed in the previous section. FAA applies the same criteria for thresholds of significant change in CNEL that they have set for DNL.

APPENDIX H AIRCRAFT NOISE ANALYSIS

This appendix presents the noise exposure analysis of aircraft operations at LAX. This includes the baseline year and forecast year for the proposed restriction and alternatives. The existing FAA Air Traffic Control Tower (ATCT) and Southern California Terminal Radar Approach Control (SOCAL TRACON or SCT) procedures and LAX noise abatement or operational procedures are assumed to remain in effect with the only changes made in reference to the proposed restriction.

Noise Analysis Methodology

§Part 161.9 requires airports to conduct noise analyses in accordance with Part 150 "specifications, methods, and criteria." Consistent with that requirement, all noise modeling conducted for this study followed Part 150 "best practices." Part 150 requires use of the FAA's Integrated Noise Model (INM) to prepare Community Noise Equivalent Level (CNEL) contours for civilian airports. Part 150 Appendix A provides standards to be followed in applying the INM. Those standards were followed in preparing contours for this analysis, using the most recent release of the INM available at the time (version 7.0b).

The INM contains the necessary algorithms to compute the necessary aircraft flight profiles and noise metrics; however, there are various airport-specific details that must be determined to make the model results specific to the desired airport. Therefore, various INM input parameters were researched, collected, and derived through close communications with the FAA and airport staffs. The following sections describe the required inputs to the INM, except for details on the aircraft fleet mix and operations, which are described in Section 6 of the report.

LAX Physical Parameters
LAX Runway Utilization
LAX Flight Track Geometry and Utilization
LAX Meteorological Data
Aircraft Noise and Performance Characteristics

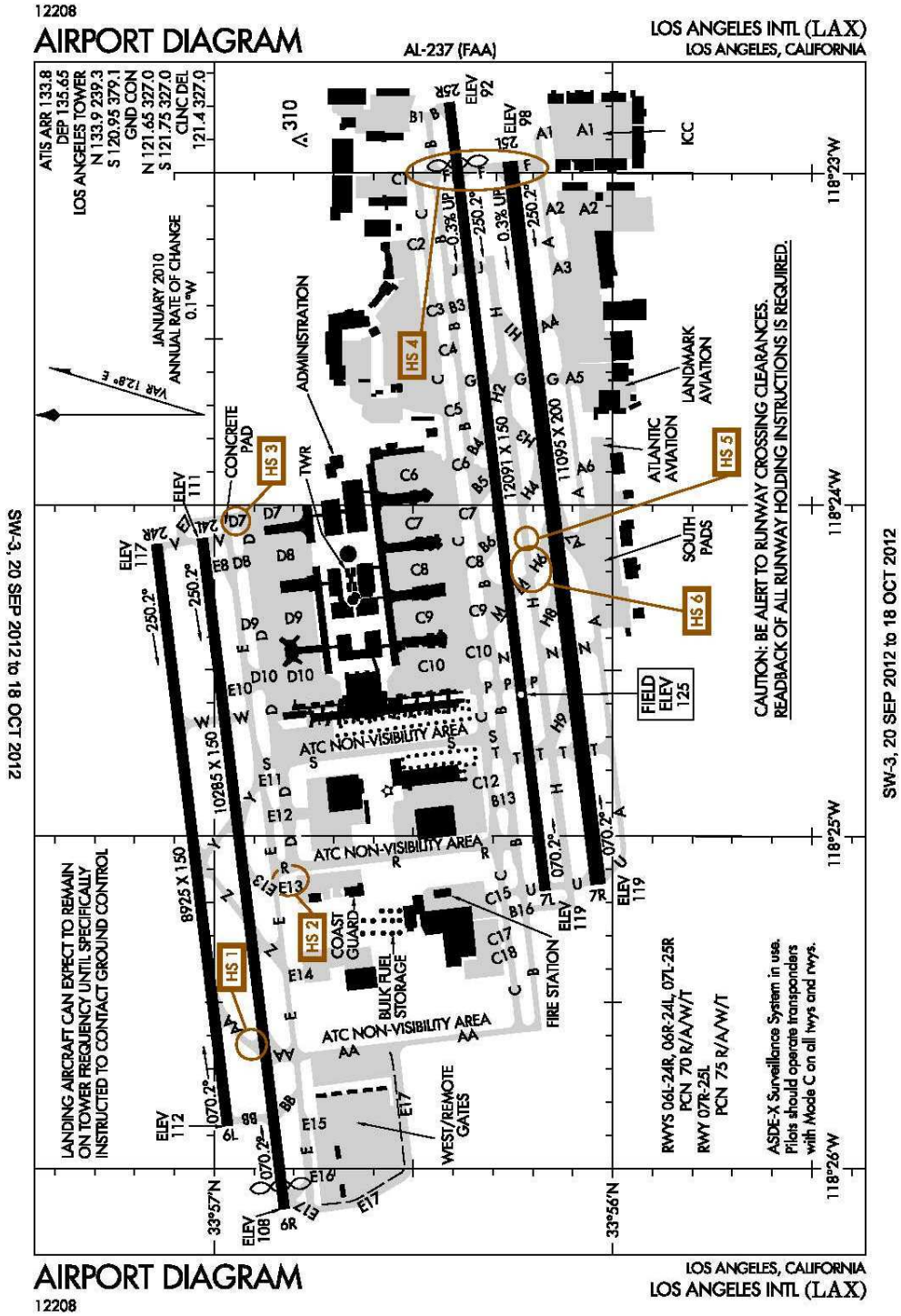
LAX Physical Parameters

LAX is located in west Los Angeles next to the Pacific Ocean approximately fifteen miles southwest of Downtown Los Angles. The airport is contained within the jurisdictional boundaries of the City of Los Angeles and is surrounded by heavily populated areas to the north, south, and east, with the Pacific Ocean to the west. Table H-1 presents the LAX airport layout. The INM includes an internal database on the airport layout, including runway locations, orientation, runway end elevations, landing thresholds, approach angles, etc. These data were verified with LAX sources and the FAA-approved LAX September 2010 Airport Layout Plan. The airport has four parallel runways grouped in pairs. The parallel runways are distinguished from each other with letter endings "L", meaning left, and "R", meaning right, as seen by the pilot. Each end of the runways is designated by a different number that, with the addition of a trailing "0," reflects the magnetic heading of the runway to the nearest 10 degrees, as seen by the pilot. Thus, the runway, 7L/25R, has the designation "7" at the west end of the pavement looking eastward, indicating that it is aligned on a magnetic heading of approximately 70 degrees, while the opposite end of the same piece of pavement has the designation "25" indicating its orientation on a heading of approximately 250 degrees.

Table H-1 Runway/Helipad Details
Source: FAA-approved LAX ALP, 2010

Runway	Latitude Longitude	Elev. (feet MSL)	Width (feet)	Length (feet)	Displaced Threshold (feet)	Descent Angle (degrees)	Effective Runway Gradient
6L	N33.949108 W118.431153	112.0	150	8,925	0	3.0	0.100%
24R	N33.952097 W118.401942	117.2	150	8,925	0	3.0	-0.100%
6R	N33.946742 W118.435319	107.3	150	10,285	331	3.0	0.119%
24L	N33.950189 W118.401661	111.1	150	10,285	0	3.0	-0.119%
7L	N33.935822 W118.419375	118.5	150	12,091	0	3.0	-0.278%
25R	N33.939872 W118.379769	91.9	150	12,091	957	3.0	0.278%
7R	N33.933644 W118.419014	121.8	200	11,095	0	3.0	-0.269%
25L	N33.937358 W118.382711	97.9	200	11,095	0	3.0	0.269%
Pad 1	N33.943998 W118.418709	112.0	-	-	-	-	-
Pad 2	N33.933926 W118.393979	102.0	-	-	-	-	-

Figure H-1 LAX Airport Diagram
Source: FAA SW-3, 20 Sep 2012 to 18 Oct 2012



LAX Runway Utilization

Twelve months of LAX ANOMS data, April 1, 2010 through March 31, 2011, were used to define the baseline runway use, flight track geometry, and the aircraft fleet distribution. Slight variations in the runway use were made for the proposed restriction scenario for both 2013 and 2018.

Table H-2 presents the modeled runway use for arrival and departure operations for 2013 status quo and 2013 with the proposed restriction split into day (7:00 a.m.–7:00 p.m.), evening (7:00 p.m.–10:00 p.m.), and night (10:00 p.m.–7:00 a.m.).

Table H-2 Runway Utilization for 2013 Status Quo and with Proposed Restriction
Source: LAWA ANOMS, HMMH

	Arrivals			Departures		
Runway	**Day**	**Evening**	**Night**	**Day**	**Evening**	**Night**
06L	0.8%	0.7%	1.8%	0.0%	0.0%	0.0%
06R	0.1%	0.0%	8.7%	0.8%	0.8%	0.5%
07L	0.0%	0.0%	11.0%	1.0%	1.0%	1.3%
07R	0.9%	0.8%	2.5%	0.1%	0.0%	0.1%
24L	0.9%	1.7%	0.8%	42.7%	50.3%	24.3%
24R	47.5%	46.2%	28.8%	1.0%	0.5%	1.1%
25L	48.3%	47.7%	44.6%	3.2%	3.5%	3.0%
25R	1.4%	2.9%	1.7%	51.2%	43.9%	69.8%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
PAD1	68.0%	36.0%	100.0%	64.0%	100.0%	100.0%
PAD2	32.0%	64.0%	0.0%	36.0%	0.0%	0.0%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

These runway utilization rates were then applied to the aircraft flight operations detailed in Section 5 and assumed to apply to both 2013 scenarios. The runway utilization for 2018 status quo differed very slightly from that in 2013 due to a forecast change in aircraft types and operations as detailed in **Error! Reference source not found.**. These runway utilization rates are shown in Table H-3 and Table H-4.

Table H-3 Runway Utilization for 2018 Status Quo
Source: LAWA ANOMS, HMMH

	Arrivals			Departures		
Runway	Day	Evening	Night	Day	Evening	Night
06L	0.8%	0.7%	1.8%	0.0%	0.0%	0.0%
06R	0.1%	0.0%	8.7%	0.8%	0.8%	0.5%
07L	0.0%	0.0%	11.0%	1.0%	1.0%	1.3%
07R	0.9%	0.8%	2.5%	0.1%	0.0%	0.1%
24L	1.0%	1.7%	0.8%	44.6%	50.4%	24.5%
24R	48.5%	47.0%	29.2%	1.0%	0.5%	1.1%
25L	47.3%	46.9%	44.2%	3.0%	3.6%	2.9%
25R	1.4%	2.8%	1.7%	49.5%	43.6%	69.7%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
PAD1	68.0%	41.0%	100.0%	68.0%	56.0%	100.0%
PAD2	32.0%	59.0%	0.0%	32.0%	44.0%	0.0%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Table H-4 Runway Utilization for 2018 with Proposed Restriction
Source: LAWA ANOMS, HMMH

	Arrivals			Departures		
Runway	Day	Evening	Night	Day	Evening	Night
06L	0.8%	0.7%	1.8%	0.0%	0.0%	0.0%
06R	0.1%	0.0%	8.7%	0.8%	0.8%	0.5%
07L	0.0%	0.0%	11.0%	1.0%	1.0%	1.2%
07R	0.9%	0.8%	2.5%	0.1%	0.0%	0.1%
24L	1.0%	1.7%	0.8%	44.6%	50.4%	24.5%
24R	48.5%	47.0%	29.2%	1.0%	0.5%	1.1%
25L	47.3%	46.9%	44.2%	3.0%	3.6%	3.0%
25R	1.4%	2.8%	1.7%	49.5%	43.6%	69.8%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
PAD1	68.0%	41.0%	100.0%	68.0%	56.0%	100.0%
PAD2	32.0%	59.0%	0.0%	32.0%	44.0%	0.0%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

LAX Flight Track Geometry

ANOMS data from April 10, 2010 through March 31, 2011 were used to develop aircraft flight tracks for use in developing model flight tracks. The flight tracks and operations were input into a modeling preprocessor known as RealContours™ that provides greater detail to the modeling process by improving the precision of modeling each individual aircraft flight track. This provides the advantage of modeling each aircraft operation on the specific runway it actually used and at the actual time of day of arrival or departure.

Meteorological Data

The INM requires average values of temperature in degrees Fahrenheit, sea level pressure in inches of mercury (Hg), relative humidity in percent, and headwind in knots (kts.). Average daily values of temperature, wet bulb temperature, and pressure for LAX were acquired from the National Climatic

Data Center for years 2001 through March 2011. HMMH then developed annual average values for temperature (63.0°F), relative humidity (70.3%), and pressure (29.98 in. Hg) and used the default headwind value of 8 kts. These values were then input into the INM as the meteorological annual averages.

Figure H-2 Modeled Arrival Flight Tracks for Fixed-Wing Aircraft
Source: HMMH

Figure H-3 Modeled Departure Flight Tracks for Fixed-Wing Aircraft
Source: HMMH

Figure H-4 Modeled Arrival and Departure Flight Tracks for Helicopters
Source: HMMH

Figure H-5 Modeled Non-conforming Over-Ocean East Departure Flight Tracks to be affected by the Proposed Restriction
Source: HMMH

Aircraft Noise and Performance

Specific noise and performance data must be entered for each aircraft type operating at the airport. Noise data are included in the form of sound exposure level (SEL) at a range of distances (from 200 feet to 25,000 feet) with engines at a specific thrust levels. Performance data include thrust, speed, and altitude for takeoffs and landings. The INM database contains standard noise and performance data for over 100 types of fixed-wing aircraft and helicopters. The program automatically accesses the applicable noise and performance data for departure and arrival operations by those aircraft.

To model operations at LAX as accurately as feasible, it was necessary to obtain FAA approval for use of "substitute" aircraft types for aircraft not included in the INM database

To model the effects of sleep disturbance, it was initially intended to develop and use "extended aircraft profiles" for the nighttime departures to the east when in Over-Ocean or Westerly Flow Operations. After initially requesting FAA review, additional technical review determined that the extended profiles were not necessary and therefore were not modeled.

Substitute Aircraft

The INM database does not include data for every aircraft type. The database includes a lookup table that identifies approved "substitutes" for many types. However, that lookup table does not include some aircraft types modeled at LAX. For these aircraft types, recommendations for INM substitute aircraft were forwarded to the FAA for approval or identification of an alternate approved substitution.

Copies of related correspondence from LAWA to the FAA on September 7, 2011 and FAA's letter of approval to LAWA on December 9, 2011 are presented at the end of this section.

Los Angeles
World Airports

September 7, 2011

Mr. Victor Globa
Federal Aviation Administration
Western Pacific Region Airports Division, LAX-600.3
P.O. Box 92007
Los Angeles, CA 90009

Re: INM 7.0b Aircraft Type Substitutions and Aircraft Profile Extensions for both the LAX Part 161 Noise and Access Restriction Study and the LAX Specific Plan Amendment Study

Dear Mr. Globa:

Los Angeles World Airports (LAWA), as owner and operator of Los Angeles International Airport (LAX), has embarked on a 14 CFR Part 161 Noise and Access Restriction Study at LAX to restrict non-conforming late night departures over the City during periods and weather conditions when the airport is operating under our current voluntary Over Ocean Operations noise abatement procedure. Concurrently, LAWA is also undergoing a Specific Plan Amendment Study at LAX, which requires additional noise modeling for our assessment of any environmental impacts that may be associated with those airport improvement projects.

Both of these studies require non-standard inputs to version 7.0b of the Integrated Noise Model, and because they are being conducted in parallel, for credibility it is essential that the two projects maintain fully consistent approaches to their baseline and forecast noise modeling and impact analyses. In that regard, we are requesting that FAA approve INM 7.0b substitutions and extended profiles for each of the aircraft types identified in the attachment to this letter so they may be used on these parallel studies.

We are always pleased to answer any questions you may have regarding this request. Thank you very much for your prompt assistance on this matter.

Sincerely,

Scott Tatro
Environmental Affairs Officer

SMT:eb

Enclosures

cc: M. Feldman w/o enclosures
R. Miller w/o enclosures

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1 World Way Los Angeles California 90045-5803 Mailing Address: P.O. Box 92216 Los Angeles California 90009-2216 Telephone (310) 646-5252 Internet www.lawa.aero

Request for INM 7.0b Aircraft Type Substitutions and Aircraft Profile Extensions for both the LAX Part 161 Noise Study and the LAX Specific Plan Amendment Study
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Appendix A

INM Aircraft Substitution Requests and Suggestions

Los Angeles World Airports (LAWA) has identified the following aircraft types included in the fleet mixes for the currently on-going LAX 14 CFR Part 161 Noise and Access Restriction Study as well as the LAX Specific Plan Amendment Study (SPAS) for which FAA approved substitutes are required. In each case, we have proposed a substitute from the INM 7.0b database. The bases for our proposed substitutions are discussed following Table 1. The bases for some recommendations refer to recent guidance FAA provided HMMH for the VNY Part 150 Noise Exposure Map Update (VNY NEM)[1]. Our recommendations for other substitutions are based on similar requests approved for other facilities, including Nashville International Airport (BNA)[2], Cleveland Hopkins International Airport (CLE)[3], Louisville International Airport (SDF)[4] Naples Municipal Airport (APF)[5] and Jackson-Evers International Airport (JAN).[6]

Table 1 Aircraft Types and Recommended INM Substitutions

#	Group	Aircraft Code	Represented Aircraft Models	Recommended INM Substitution
1	Commercial Jet	B77L B77W	Boeing 777 Freighter,777-200LR 777-300ER	777300 with addition of maximum takeoff weight profile
2	Commercial Jet	B788/787-8 B789/787-9	Boeing 787-8 and 787-9	A310-304
3	Commercial Jet	A320neo	Airbus A320neo	A320-232
4	Commercial Jet	A350	Airbus 350	A330-343
	Commercial Jet	A350-900		
5	Commercial Jet	B739	Boeing 737-900	737800
6	Commercial Jet	B748	Boeing 747-8 Freighter 747-8 Intercontinental	A340-642
7	Commercial Jet	BOMBC	Bombardier C Series	A319-131
8	Commercial Jet	E190	Embraer 190	A319-131
	Commercial Jet	E90		
	Commercial Jet	EMJ		
9	Jet	C56X	Cessna 560XL Citation Excel	CNA55B
10	Jet	C680	Cessna 680 Citation Sovereign	LEAR35

[1] Van Nuys Airport Part 150 Study, HMMH Project No. 304380.000, FAA approval issued March 14, 2011.
[2] Nashville International Airport Part 150 Noise Exposure Map Update; HMMH Project No. 304350; FAA approval issued March 7, 2011.
[3] Cleveland Hopkins International Airport Part 150 Noise Exposure Map Update; HMMH Project No. 303000; FAA approval issued January 3, 2011.
[4] Louisville International Airport Part 150 Noise Exposure Map Update; HMMH Project No. 304060; FAA approval issued July 13, 2010.
[5] Naples Municipal Airport Part 150 Noise Exposure Map and Noise Compatibility Program Updates; HMMH Project No. 302720.001.002; FAA approval issued September 12, 2009.
[6] Jackson-Evers International Airport Part 150 Noise Exposure Map and Noise Compatibility Program Updates; HMMH Project No. 304140.001(002); FAA approval issued May 13, 2010.

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#	Group	Aircraft Code	Represented Aircraft Models	Recommended INM Substitution
11	Jet	CL30	Bombardier BD-100 Challenger 300	CL600
12	Jet	DA7X	Dassault Falcon 7X	F10062
13	Jet	E50P	Embraer EMP-500 Phenom 100	CNA510
14	Jet	E55P	Embraer EMP505 Phenom 300	IA1125
15	Jet	FA50 / FAL50	Dassault Falcon 50/900	LEAR35 + 1.8 dB
	Jet	F900 / FAL900		
16	Jet	G150	Gulfstream 150	IA1125
17	Jet	GL5T	Bombardier BD-700 Global 5000	GV
	Jet	GLEX	Bombardier Global Express BD-700	
18	Jet	H25C	Raytheon Hawker BAe HS 125-1000	LEAR35
19	Jet	HA4T	Hawker Beechcraft Hawker 4000	CL600
20	Jet	LJ40	Learjet 40	LEAR35
21	Jet	PRIM/PRM1	Hawker Beechcraft Premier 1, 390	CNA500
22	Turbo Prop	P180	Piaggio P-180 Avanti	DHC6
23	Turbo Prop	P46T	Piper Malibu Meridian	SD330
24	Turbo Prop	PC12	Pilatus PC-12, Eagle	CNA208
	Turbo Prop	TBM7	Socata TBM-700	
	Turbo Prop	TBM8	Socata TBM-850	
25	Piston Prop	AA1	AA-1 series (Grumman American)	GASEPF
26	Piston Prop	DA40	DA-40 Katana, Diamond Star	GASEPV
27	Piston Prop	PA32	Piper Saratoga	GASEPV
28	Kit	SR20	Cirrus SR-20	GASEPV
	Kit	SR22	Cirrus SR-22	
29	Propeller	-	Various Propeller Aircraft with relatively few annual operations	See Section 29

1. Boeing 777 Freighter/777-200LR (B77L) and 777-300ER (B77W)

We propose to represent B77L and B77W operations with INM type 777300. We propose to model stage length 8 and 9 destinations (greater than 5,500 nm) with 777300 user-defined profiles (ICAO A, ICAO B and STANDARD) at the INM's 777300 maximum takeoff weight of 660,000 lb.

The Boeing 777 family includes several variants. The INM includes two aircraft, INM type 777200 and 777300, with maximum takeoff weights of 656,000 lb. and 660,000 lb. respectively. The INM lists the maximum static engine thrust of these aircraft as 90,000 lb. and 77,000 lb. respectively.[7]

[7] Boeing's website indicates that the maximum thrust for the 777-300's Rolls-Royce Trent 892 is 90,000 lb. (reference: http://www.boeing.com/commercial/777family/pf/pf_300product.html as viewed July 25, 2011). However INM's aircraft dbf lists the static thrust as 77,000 lb.

Boeing has added three additional variants to the 777 family: the 777-200LR, 777-Frieghter and the 777-300ER. The 777-Frieghter is a dedicated cargo variant of the 777-200LR. All three of these variants have maximum takeoff weights between 766,000 lb. and 775,000 lb. and engine options ranging from 110,100 lb. to 115,300 lb. thrust. ICAO Document 8643, "Aircraft Type Designators" differentiates these variants separately from the 777-200 (designator B772) and 777-300 (B773), using designators B77L for the 777-200LR, 777-Frieghter and B77W for the 777-300ER.[8] Table 2 presents a comparison of the Boeing 777 variants compiled from the Boeing Company's website referenced above.

The noise certification data for the 777 variants that are included in INM and that represent the B77L and B77W variants included in the LAX operations are included in Table 3. The maximum takeoff weights for the B77L and B77W variants are 14 to 17 percent greater than what is offered in INM. The noise certification data for INM type 777300, presented in Table 3 as B-777-300, is closer to B77L and B77W variants, especially for the approach and the full-power sideline certification points. The B77L and B77W variants have takeoff certification levels, which may include a thrust cut-back, in between those associated with INM type 777200 and 777300.[9] INM type 77300 appears to be the better match. Our tests in INM indicate that 777300 is louder than 777200 in most cases.

[8] ICAO Document 8643 corresponds to FAA Order 7340.2B, Change 2 (effective 6/30/2011), Chapter 5. Although FAA Order 7340.2B does not list the B77L or B77W, these aircraft type designators have been used in flight plan data within the United States.
http://www.icao.int/anb/ais/8643/index.cfm
http://www.faa.gov/air_traffic/publications/atpubs/CNT/CNTHME.htm
http://flightaware.com/live/aircrafttype/B77L
http://flightaware.com/live/aircrafttype/B77W

[9] Thrust requirements for the take-off/flyover measurement and the sideline/lateral measurement are described in ICAO Annex 16 Vol. , Chapter 3 and 14 CFR Part 36.

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Table 2 Comparison of 777 Variants

Description	777-200	777-200ER	777-300	777-200LR	777-Freighter (777-F)	777-300ER
Passengers (Cargo)*	305 pax	301 pax	368 pax	301 pax	(112 tons)	365 pax
Engines; Max Thrust	Pratt & Whitney 4077 77,000 lb Rolls-Royce Trent 887 76,000 lb General Electric GE90-77B 77,000 lb	Pratt & Whitney 4090 90,000 lb Rolls-Royce Trent 895 93,400 lb General Electric GE90-94B 93,700 lb	Pratt & Whitney 4098 98,000 lb Rolls-Royce Trent 892 90,000 lb General Electric 90-94B 93,700 lb	General Electric GE90-110B1 110,100 lb General Electric GE90-115BL 115,300 lb	General Electric GE90-110B1L 110,100 lb General Electric GE90-115BL 115,300 lb	General Electric GE90-115B 115,300 lb
Max Range	5,240 nm	7,725 nm	6,005 nm	9,395 nm	4,900 nm**	7,930 nm
Wing Span	199 ft 11in	199 ft 11in	199 ft 11 in	212 ft 7in	212 ft 7 in	212 ft 7 in
Overall Length	209 ft 1in	209 ft 1in	242 ft 4 in	209 ft 1 in	209 ft 1 in	242 ft 4 in

Sources:
http://www.boeing.com/commercial/777family/pf/pf_200product.html
http://www.boeing.com/commercial/777family/pf/pf_300product.html
http://www.boeing.com/commercial/777family/pf/pf_lrproduct.html
http://www.boeing.com/commercial/777family/pf/pf_freighter_product.html
As viewed July 25, 2011
*Does not include cargo for passenger variants.
**This appears to be the maximum range with maximum payload of 112 tons and therefore may not be directly comparable to the other entries.

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Table 3 Noise Certification Data for Boeing 777 Variants

Manufacturer	Type Designation	MTOW (lb)	MLW (lb)	Engine Manufacturer / Type Designator	Effective Perceived Noise Level (EPNdB)		
					Takeoff	Sideline	Approach
Boeing	B-777-200	656,000	470,000	GE90-90B (BLK IV)	91.5	95.7	98.3
Boeing	B-777-300	660,000	524,000	Rolls Royce Trent 892	94.2	96.9	100.4
Boeing Company	777-F	766,000	575,000	GE90-110B1	92.6	97.9	100.3
Boeing Company	777-200LR	750,010	492,070	GE90-110B1	91.9	97.9	99.7
Boeing Company	777-200LR	757,070	492,070	GE90-110B1	92.2	97.9	99.7
Boeing Company	777-200LR	763,020	492,070	GE90-110B1	92.5	97.9	99.7
Boeing Company	777-300ER	750,010	554,000	GE90-115B	91.9	98.9	100.5
Boeing Company	777-300ER	759,600	554,000	GE90-115B	92.3	98.8	100.5
Boeing Company	777-300ER	774,930	554,000	GE90-115B	92.8	98.7	100.5

Sources:
Data for B-777-200 and B-777-300, corresponding to INM types 777200 and 777300, respectively, from FAA AC 36-1H, Appendix 1 (March 2, 2010), at
http://www.faa.gov/about/office_org/headquarters_offices/apl/noise_emissions/aircraft_noise_levels/
Data for 777-F, 777-200LR, and 777-300ER from TCDSN database for Jets Issue 12 as posted in "TCDSN Jets.xls" on http://easa.europa.eu/certification/type-certificates/noise.php July 22,2011
777-F from TCDSN record A10078
777-200LR from TCDSN records A4924, A4925 and A4926
777-300ER from TCDSN records A5603, A10649 and A5609
Weights converted from EASA reported units of kg and rounded to tens of lb.
FAA AC-36-1H reported values of Takeoff and Sideline are the same as EASA/ICAO reported values of Flyover and Lateral, respectively.

Approximately 3,000 annual departures of B77Ls and B77Ws at LAX head for destinations greater than 5,500 nautical miles (nm)[10], corresponding to stage length 8 or 9[11]. INM type 777300 includes profile weights representing up to stage length 7 (4,501 to 5,500 nm) at 636,100 lb.[12] This weight represents 96.4% of the 660,000 lb. maximum takeoff weight reported in INM. However, most long-haul aircraft in INM have a profile that represents maximum takeoff weight[13]. In the case of the 747400 and the 777200, there are profiles that represent approximately 96% of maximum takeoff weight in addition to the maximum weight profile.

[10] From an analysis of flight track data from March 2010 through April 2011. Some of the more common destinations included Sydney (~6,500 nm), Hong Kong (~6,250 nm) and Dubai (~7,200 nm)
[11] Stage lengths used by INM are defined in the INM 7.0 User's Guide, Section 9.6.3
[12] INM \sys\data\profile.dbf.
[13] These include, but are not limited to, 747700(Profile 9), 777200(9), A330-343(7) and A380-841(8)

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The following sections describe the proposed profile according to the FAA Profile Review Checklist.[14]

1.1 Statement of Benefit

We propose to represent B77L and B77W operations to stage length 8 and 9 destinations (greater than 5,500 nm) with 777300 user-defined profiles (ICAO A, ICAO B and STANDARD) at the INM's 777300 maximum takeoff weight of 660,000 lb. This will provide the option of modeling stage length 8 and 9 777300 operations with the assumptions consistent with other long-haul aircraft in INM.[15] The basis of these profiles are the 777300 ICAO A, ICAO B and STANDARD for stage length/PROF_ID2 =7 at 636,100 lb. We only propose to change the weight and do not propose any changes to flap, speed or altitude settings compared to the respective INM stage length/PROF_ID2 =7 profile. No new coefficient data were developed for these adjusted profiles.

1.2 Analysis Demonstrating Benefit

Table 4, Table 5 and Table 6 compare the Sound Exposure Level (SEL) for the Standard, ICAO A and ICAO B performance profiles for the two different weights. The locations are based on 0.5 nm spacing directly under the flight path. All values are based on a LAX Runway 7L departure with temperature, pressure and humidity set to 63.0 Fahrenheit, 29.98 inches of Mercury and 70.3 % respectively.

Noise values from the three proposed profiles (STD-M, ICAOAA-M and ICAOBB-M) are louder than the respective INM included profile (STANDARD-7, ICAO A-7 and ICAO B-7 respectively) in most areas. The differences range from 0.3 dB to 2.8 dB (across all three profiles) when the aircraft is airborne (1.5 nm and greater). Most of the changes at 3 nm and greater, which represents noise sensitive locations for Runway 7L departures, range from 0.3 to 2.7 dB, with most values on the order of 0.5 to 1.0 dB. Most of the 1.0 dB and greater increases appear to be related to delayed thrust-cut back, because the proposed maximum weight profile takes longer to reach the thrust cut back altitude criteria. These changes are on the order expected for adjacent profile weights.

[14] INM 7.0 User's Guide, Appendix B
[15] Since the INM's options of 777 variants are lighter than the B77L and B77W, a comparison with actual or estimated take-off weights would not provide a relevant comparison. Instead we are proposing consistency with modeling assumptions for other INM types.

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Table 4 Comparison of Sound Exposure Level (SEL) for 777300 Standard-7 versus Proposed Maximum Weight Profile

Grid Points (nm)	INM Standard Profile STANDARD-7 636,100 lb. (SEL dB)	User Defined Profile STD-M 660,000 lb. (SEL dB)	Difference (dB)
0.5	126.5*	126.4*	-0.1
1.0	123.1*	123.1*	0.0
1.5	109.1	111.9	2.8
2.0	102.7	103.8	1.1
2.5	99.2	100.1	0.9
3.0	94.3	94.8	0.5
3.5	93.3	93.6	0.3
4.0	92.3	92.8	0.5
4.5	91.3	91.6	0.3
5.0	90.6	90.9	0.3
5.5	89.6	90.1	0.5
6.0	88.9	89.3	0.4
6.5	88.2	88.6	0.4
7.0	87.2	88.0	0.8
7.5	86.2	87.0	0.8
8.0	85.4	86.1	0.7
8.5	84.8	85.4	0.6
9.0	84.0	84.8	0.8
9.5	83.3	84.0	0.7
10.0	82.8	83.4	0.6

Sources: INM 7.0b
Notes: *Aircraft is on the runway at this location

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Table 5 Comparison of Sound Exposure Level (SEL) for 777300 ICAO A-7 versus Proposed Maximum Weight Profile

Grid Points (nm)	INM Standard Profile ICAO_A-7 636,100 lb. (SEL dB)	User Defined Profile ICAOAA-M 660,000 lb. (SEL dB)	Difference (dB)
0.5	126.5*	126.4*	-0.1
1.0	123.1*	123.1*	0.0
1.5	109.2	112.0	2.8
2.0	102.8	103.9	1.1
2.5	99.3	100.2	0.9
3.0	96.9	97.6	0.7
3.5	92.0	94.0	2.0
4.0	90.6	91.1	0.5
4.5	89.7	90.2	0.5
5.0	88.8	89.3	0.5
5.5	88.0	88.5	0.5
6.0	87.4	87.8	0.4
6.5	86.7	87.2	0.5
7.0	85.9	86.6	0.7
7.5	85.3	85.9	0.6
8.0	84.6	85.3	0.7
8.5	84.1	84.7	0.6
9.0	83.5	84.2	0.7
9.5	83.1	83.6	0.5
10.0	82.5	83.1	0.6

Sources: INM 7.0b
Notes: *Aircraft is on the runway at this location

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Table 6 Comparison of Sound Exposure Level (SEL) for 777300 ICAO B-7 versus Proposed Maximum Weight Profile

Grid Points (nm)	INM Standard Profile ICAO_B-7 636,100 lb. (SEL dB)	User Defined Profile ICAOBB-M 660,000 lb. (SEL dB)	Difference (dB)
0.5	126.5*	126.4*	-0.1
1.0	123.1*	123.1*	0.0
1.5	109.1	111.9	2.8
2.0	102.6	103.8	1.2
2.5	99.4	100.1	0.7
3.0	97.5	97.9	0.4
3.5	95.8	96.4	0.6
4.0	94.3	94.8	0.5
4.5	92.9	93.5	0.6
5.0	91.7	92.3	0.6
5.5	88.3	91.0	2.7
6.0	86.2	87.4	1.2
6.5	85.4	85.8	0.4
7.0	84.7	85.1	0.4
7.5	84.0	84.5	0.5
8.0	83.3	83.8	0.5
8.5	82.7	83.2	0.5
9.0	82.2	82.6	0.4
9.5	81.6	82.1	0.5
10.0	81.1	81.6	0.5
Sources: INM 7.0b Notes: *Aircraft is on the runway at this location			

1.3 Concurrence on Aircraft Performance

The proposed performance profiles do not modify the INM 7.0b included 777300 PROF_ID2 =7 profiles, with the exception of weight. As we discussed above, we modified the weight to be consistent with modeling assumptions with other long-haul aircraft in INM.

1.4 Certification of New Parameters

No new parameters were created for these profiles.

1.5 Graphical and Tabular Comparisons

The following figures provide comparisons of the 777300 PROF_ID7 profiles and the proposed maximum weight profiles. Figure 1 shows the altitude versus distance plot for the proposed profiles

compared to the INM included profiles. Figure 2 shows the speed versus distance plot and Figure 3 shows the thrust versus distance. All plots were developed from INM 7.0b for a LAX Runway 7L

departure with temperature, pressure and humidity set to 63.0 Fahrenheit, 29.98 inches of Mercury and 70.3 % respectively.[16]

Table 7 through Table 9 present the data used to create Figure 1 through Figure 3. Data for these tables are from the INM calc_prof_pts.dbf file.

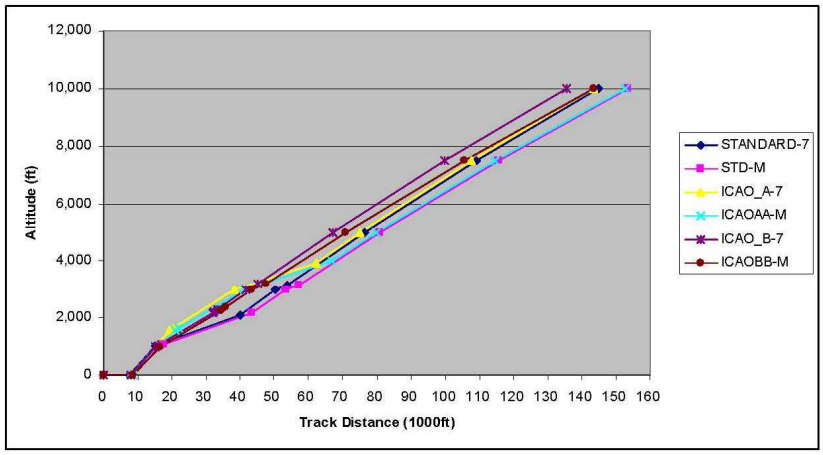

Figure 1 Altitude versus Distance for 777300 Stage Length 7 and Proposed Maximum Weight Profiles

[16] Historic conditions for LAX from National Climatic Data Center (NCDC)

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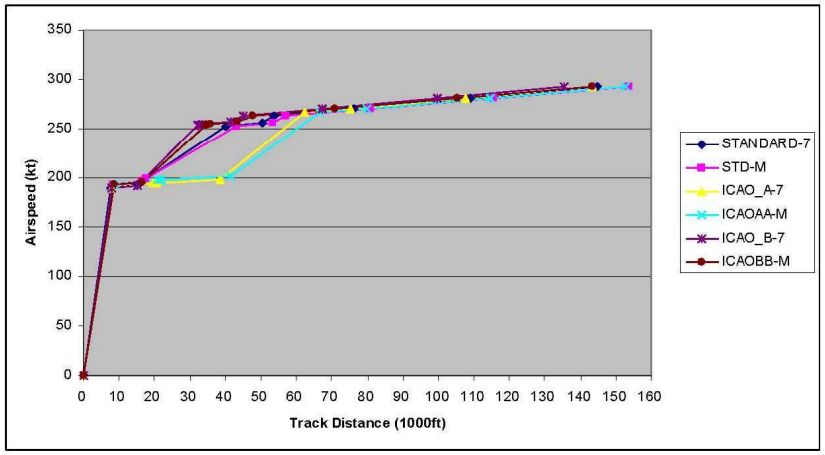

Figure 2 Airspeed versus Distance for 777300 Stage Length 7 and Proposed Maximum Weight Profiles

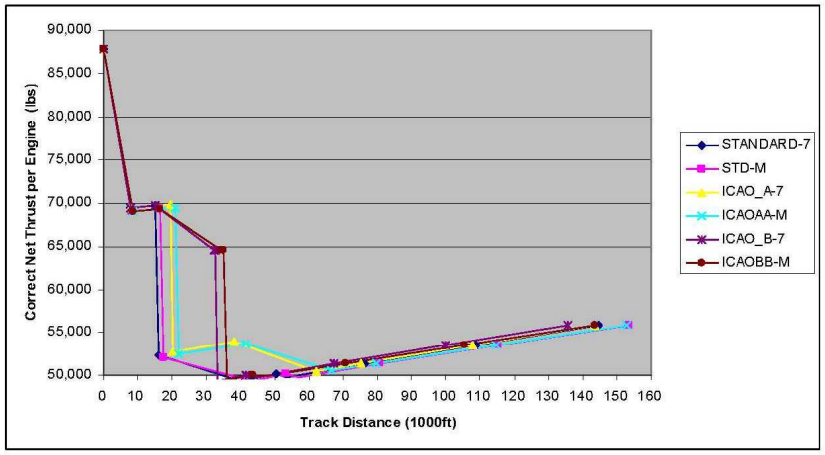

Figure 3 Thrust versus Distance for 777300 Stage Length 7 and Proposed Maximum Weight Profiles

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Table 7 777300 Standard Graphical Comparison Data

ACFT ID	OP TYPE	RWY ID	PROF ID1	PROF ID2	PT NUM	DISTANCE	ALTITUDE	SPEED	THR_SET
777300	D	7L	STANDARD	7	1	0.0	0.0	0.0	87852.96
777300	D	7L	STANDARD	7	2	7726.3	0.0	189.4	69423.25
777300	D	7L	STANDARD	7	3	15251.5	1042.0	192.4	69710.25
777300	D	7L	STANDARD	7	4	16251.5	1084.6	195.1	52265.03
777300	D	7L	STANDARD	7	5	39929.4	2093.7	252.3	49299.23
777300	D	7L	STANDARD	7	6	50300.7	3000.0	255.8	50096.87
777300	D	7L	STANDARD	7	7	53623.9	3141.2	263.3	49753.63
777300	D	7L	STANDARD	7	8	76243.1	5000.0	270.7	51389.52
777300	D	7L	STANDARD	7	9	108931.2	7500.0	281.3	53589.71
777300	D	7L	STANDARD	7	10	144710.0	10000.0	292.5	55789.89
777300	D	7L	STD	M	1	0.0	0.0	0.0	87852.96
777300	D	7L	STD	M	2	8348.2	0.0	193.0	69080.22
777300	D	7L	STD	M	3	16402.6	1042.0	195.9	69367.22
777300	D	7L	STD	M	4	17402.6	1084.2	198.3	52016.56
777300	D	7L	STD	M	5	43219.5	2174.9	252.6	49370.70
777300	D	7L	STD	M	6	53239.5	3000.0	255.8	50096.87
777300	D	7L	STD	M	7	56980.9	3158.9	263.3	49769.24
777300	D	7L	STD	M	8	80763.7	5000.0	270.7	51389.52
777300	D	7L	STD	M	9	115511.0	7500.0	281.3	53589.71
777300	D	7L	STD	M	10	153628.6	10000.0	292.5	55789.89

Note: All OP_MODE set to D
Sources: INM 7.0b

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Table 8 777300 ICAO A Graphical Comparison Data

ACFT ID	OP TYPE	RWY ID	PROF ID1	PROF ID2	PT NUM	DISTANCE	ALTITUDE	SPEED	THR_SET	OP MODE
777300	D	7L	ICAO_A	7	1	0.0	0.0	0.0	87852.96	D
777300	D	7L	ICAO_A	7	2	8035.8	0.0	189.4	69423.25	D
777300	D	7L	ICAO_A	7	3	19401.7	1553.0	193.8	69851.00	D
777300	D	7L	ICAO_A	7	4	20401.7	1629.7	194.0	52714.75	D
777300	D	7L	ICAO_A	7	5	38271.0	3000.0	198.0	53988.22	D
777300	D	7L	ICAO_A	7	6	62130.4	3949.3	266.5	50464.80	D
777300	D	7L	ICAO_A	7	7	75081.9	5000.0	270.7	51389.52	D
777300	D	7L	ICAO_A	7	8	107769.9	7500.0	281.3	53589.71	D
777300	D	7L	ICAO_A	7	9	143548.7	10000.0	292.5	55789.89	D
777300	D	7L	ICAOAA	M	1	0.0	0.0	0.0	87852.96	D
777300	D	7L	ICAOAA	M	2	8697.1	0.0	193.0	69080.22	D
777300	D	7L	ICAOAA	M	3	20865.9	1553.0	197.4	69507.96	D
777300	D	7L	ICAOAA	M	4	21865.9	1623.3	197.6	52466.28	D
777300	D	7L	ICAOAA	M	5	41448.1	3000.0	201.7	53739.74	D
777300	D	7L	ICAOAA	M	6	66661.8	3994.8	266.7	50504.91	D
777300	D	7L	ICAOAA	M	7	79824.1	5000.0	270.7	51389.52	D
777300	D	7L	ICAOAA	M	8	114571.4	7500.0	281.3	53589.71	D
777300	D	7L	ICAOAA	M	9	152689.0	10000.0	292.5	55789.89	D
Sources: INM 7.0b										

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Table 9 777300 ICAO B Graphical Comparison Data

ACFT ID	OP TYPE	RWY ID	PROF ID1	PROF ID2	PT NUM	DISTANCE	ALTITUDE	SPEED	THR_SET	OP MODE
777300	D	7L	ICAO_B	7	1	0.0	0.0	0.0	87852.96	D
777300	D	7L	ICAO_B	7	2	8035.8	0.0	189.4	69423.25	D
777300	D	7L	ICAO_B	7	3	15249.8	1000.0	192.2	69698.68	D
777300	D	7L	ICAO_B	7	4	32150.2	2174.8	253.7	64552.22	D
777300	D	7L	ICAO_B	7	5	32465.4	2216.0	253.8	64563.57	D
777300	D	7L	ICAO_B	7	6	33465.4	2303.0	254.2	49336.06	D
777300	D	7L	ICAO_B	7	7	41473.2	3000.0	256.8	50026.04	D
777300	D	7L	ICAO_B	7	8	44976.8	3178.1	263.4	49786.14	D
777300	D	7L	ICAO_B	7	9	67159.3	5000.0	270.7	51389.52	D
777300	D	7L	ICAO_B	7	10	99847.4	7500.0	281.3	53589.71	D
777300	D	7L	ICAO_B	7	11	135626.2	10000.0	292.5	55789.89	D
777300	D	7L	ICAOBB	M	1	0.0	0.0	0.0	87852.96	D
777300	D	7L	ICAOBB	M	2	8697.1	0.0	193.0	69080.22	D
777300	D	7L	ICAOBB	M	3	16418.2	1000.0	195.8	69355.65	D
777300	D	7L	ICAOBB	M	4	34491.4	2245.5	253.9	64571.71	D
777300	D	7L	ICAOBB	M	5	34895.4	2295.5	254.1	64585.48	D
777300	D	7L	ICAOBB	M	6	35895.4	2377.6	254.4	49406.07	D
777300	D	7L	ICAOBB	M	7	43485.2	3000.0	256.8	50026.04	D
777300	D	7L	ICAOBB	M	8	47553.0	3206.7	263.5	49811.32	D
777300	D	7L	ICAOBB	M	9	70736.1	5000.0	270.7	51389.52	D
777300	D	7L	ICAOBB	M	10	105483.3	7500.0	281.3	53589.71	D
777300	D	7L	ICAOBB	M	11	143601.0	10000.0	292.5	55789.89	D
Sources: INM 7.0b										

2. Boeing 787-8 (B788) Boeing 787-9 (B789)

We propose to model B788 and B789 operations with INM type A310-304.

The Boeing 787 is a new twin-engine, wide-body aircraft. The 787-8 is the first variant and was recently certified.[17] Recently released noise certification data indicates that this aircraft has noise levels comparable on approach to many twin-engine, wide-body aircraft in INM 7.0b. However the 787-8 take-off and sideline noise values are quieter than aircraft currently available in INM. The 787-9 will be a heavier variant of the 787-8.[18]

[17] http://boeing.mediaroom.com/index.php?s=43&item=1903
[18] http://www.boeing.com/commercial/787family/787-9prod.html

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Table 10 presents the certification data for the 787-8 and various twin-engine wide-body aircraft represented in INM. The Airbus A310-304 appears to be the best match overall, over predicting takeoff and sideline noise by 3 to 6 dB and approach noise by 1.5 dB.

Table 10 Noise Certification Data for Boeing 787-8 and Various Wide-body Aircraft

Manufacturer	Type Designation	MTOW (lb)	MLW (lb)	Engine Manufacturer / Type Designator	Effective Perceived Noise Level (EPNdB)		
					Takeoff	Sideline	Approach
Boeing Company	787-8	484,000	370,000	Rolls Royce Trent 1000-A	86.5	89.9	96.9
Boeing Company	787-8	467,500	370,000	Rolls Royce Trent 1000-A	85.5	90.0	96.9
Boeing Company	787-8	462,900	355,000	Rolls Royce Trent 1000-A	85.2	90.0	96.9
Boeing Company	787-8	440,000	345,000	Rolls Royce Trent 1000-A	84.0	90.1	96.8
Boeing Company	777-200	656,010	470,000	GE90-90B	91.7	95.7	98.8
Boeing	B-777-200	656,000	470,000	GE90-90B (BLK IV)	91.5	95.7	98.3
Boeing	B-777-300	660,000	524,000	Rolls Royce Trent 892	94.2	96.9	100.4
Airbus	A330-343	513,680	412,260	Trent 772B-60	90.7	97.4	97.0
Airbus	A330-301	467,380	383,600	CF6-80E1A2	91.0	97.7	98.8
Boeing Company	767-400ER	450,000	350,000	CF6-80C2B8F	91.2	96.8	98.7
Boeing Company	767-300	407,000	320,000	PW4060	93.2	97.0	100.2
Airbus	A300-B4-622R	378,530	308,650	PW4158	92.4	97.7	101.7
Airbus	A300-B4-203	363,760	295,420	CF6-50C2	93.9	97.9	102.9
Airbus	A310-304	346,130	273,370	CF6-80C2A2	89.4	94.5	98.4

Sources:
Data for all 787-8 entries from http://easa.europa.eu/certification/type-certificates/noise.php file EASA-TCDS-A.115_(IM)_Boeing_787-01-26082011.pdf, EASA Record Numbers A16692, A16618, A16619 and A16620.
Weights converted from EASA reported units of kg and rounded to tens of lb.
FAA AC-36-1H reported values of Takeoff and Sideline are the same as EASA/ICAO reported values of Flyover and Lateral, respectively.
Data for B-777-200 and B-777-300, corresponding to INM types 777200 and 777300, respectively, from FAA AC 36-1H, Appendix 1 (March 2, 2010), at
http://www.faa.gov/about/office_org/headquarters_offices/apl/noise_emissions/aircraft_noise_levels/
Data for all aircraft from entries from TCDSN database for Jets Issue 12 as posted in "TCDSN Jets.xls" on http://easa.europa.eu/certification/type-certificates/noise.php July 22,2011
A330-343 from Record Number A15071, which corresponds to INM 7.0b type "A330-343"
A330-301 from Record Number A2894, which corresponds to INM 7.0b type "A330-301"
767-400ER from Record Number A1852, which corresponds to INM 7.0b type "767400"
767-300 from Record Number A3578, which corresponds to INM 7.0b type "767300"
A300-B4-622R from Record Number A216, which corresponds to INM 7.0b type "A300-622R"
A300-B4-203 from Record Number A124, which corresponds to INM 7.0b type "A300B4-203"
A310-304 from Record Number A283, which corresponds to INM 7.0b type "A310-304"

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3. Airbus 320 New Engine Option -A320neo

We propose to mode A320neo operation with INM type A320-232.

Airbus describes the A320neo has an "…efficiency improvement package which Airbus is offering as options for the A319, A320, and A321 models of the A320 Family." The Airbus A320 new engine option will be offered with two engines: Pratt & Whitney's PurePower PW1100G geared turbofan or CFM International's LEAP-X. Airbus expects that the A320neo will be 15 dB below Chapter 4. The Airbus A320 variant is expected to start service in October 2015.[19]

We assume that the reported "15 dB below Chapter 4" translates to 25 dB cumulatively below ICAO Annex 16 Chapter 3 with the EPNdB metric (Chapter 4 is defined as 10 dB cumulatively, at the three certification points, below Chapter 3) and applies to both engine choices. Since the A320neo is a variant of the existing A320, we believe using an existing INM A320 type would be appropriate.

Table 11 presents the noise certification data and cumulative below Chapter 3 as reported by European Aviation Safety Agency (EASA)[20] for the A320 variants in INM. INM type A320-211 is 12.1 dB below Chapter 3 limits while INM type A320-232 is 19.0 dB below Chapter 3 limits. Therefore, INM type A320-232 should be closer (in terms of noise) to the A320neo than INM type A320-211, based on available certification data and the statements made by Airbus.

Table 11 Noise Certification Data from A320 Variants in INM

Manufacturer	Type Designation	MTOW (lb)	MLW (lb)	Engine Manufacturer / Type Designator	Effective Perceived Noise Level (EPNdB)			
					Fly Over	Lateral	Approach	Cumulative below Chapter 3
Airbus	A320-211	169,760	142,200	CFM56-5A1	87.4	93.7	96.1	12.1
Airbus	A320-232	169,760	145,510	V2527-A5	86.4	91.3	94.4	19.0

Source: TCDSN database for Jets Issue 12 as posted in "TCDSN Jets.xls" on http://easa.europa.eu/certification/type-certificates/noise.php July 22,2011
A320-211 from Record Number A2458, which corresponds to INM 7.0b type "A320-211"
A320-211 from Record Number A616, which corresponds to INM 7.0b type "A320-232"
Weights converted from EASA reported units of kg and rounded to tens of lb.
FAA AC-36-1H reported values of Takeoff and Sideline are the same as EASA/ICAO reported values of Flyover and Lateral, respectively.

4. Airbus 350 -A350/A350-900

We propose to model the A350 operations with INM type A330-343.

[19] http://www.airbus.com/aircraftfamilies/passengeraircraft/a320family/spotlight-on-a320neo/July_2011_A320neo_Facts__Figures.pdf
[20] EASA data is used because it reports Chapter 3 noise limits and for Chapter 4 aircraft, the cumulative below.

The two wing-mounted engines are either Genx or Trent 1700 engines with rated thrusts in the 63,000-75,000 lb. range. The maximum takeoff weight is approximately 540,000 lb. This puts the A350 in nearly the same class as the A330-300.

5. Boeing 737-900 -737900

We propose to model 737900 operations with INM type 737800 as approved by the FAA for SDF and CLE.

This aircraft is nearly identical to the Boeing 737-800 (INM type 737800) in terms of maximum takeoff weight (174,200 lb.), engines (CFM 56-7B), and dimensions . Certification noise values for these two aircraft, as reported by Advisory Circular AC36-1 H, are within 1.0 dB for similar weight, flap and engine configurations. The primary difference is that the 737-900 is designed to carry more passengers in a two-class configuration and the operating empty weight is greater for the 737-900.

Table 12 presents a comparison of the 737-800 and 737-900 certification levels.

Table 12 Comparison of 737-800 and 737-900

Manufacturer	Type Designation	MTOW (lb)	MLW (lb)	Engine Manufacturer / Type Designator	Effective Perceived Noise Level (EPNdB)		
					Takeoff	Sideline	Approach
BOEING	B-737-800/BBJ 2	174,200	146,300	CFM56-7B26; -7B26/B1	87.4	93.8	96.5
BOEING	B-737-900	174,200	147,300	CFM56-7B26	87.2	93.5	96.4
Source: FAA AC 36-1H, Appendix 1 (March 2, 2010), at http://www.faa.gov/about/office_org/headquarters_offices/apl/noise_emissions/aircraft_noise_levels/							

6. Boeing 747-8 Freighter and 747-8 Intercontinental - B748

We propose to model B748 operations with INM type 747400.

The Boeing 747-8 is a new variant of the Being 747 family that is heavier and larger than prior iterations. The aircraft is available in freighter and passenger (Boeing's name "Intercontinental") configurations. Both configurations are expected to have a maximum takeoff weight of 975,000 lb. and GE GEnx-2B67 engines with 66,500 lb. thrust.[21] The aircraft recently completed certification and the first delivery expected this September.[22]

Table 13 presents the noise certification data for the 747-8 along aircraft types747400 and Airbus A380 and A340-642 which are represented in the INM. INM type A340-642 appears to be a reasonable match based on certification data. The A340-642 approach certification is within the

[21] http://www.boeing.com/commercial/747family/747-8_facts.html
[22] http://boeing.mediaroom.com/index.php?s=43&item=1867
http://boeing.mediaroom.com/index.php?s=43&item=1889

range of the 747-8 entries while the A340-642 takeoff certification levels and sideline values are slightly higher than the 747-8 entries. The 747-400 is several decibels louder than 747-8 while the A380 entries are quieter on approach and louder on takeoff.

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Table 13 Noise Certification Data for Boeing 747-8, 747-400, Airbus A340-642 and A380

Manufacturer	Type Designation	MTOW (lb)	MLW (lb)	Engine Manufacturer / Type Designator	Effective Perceived Noise Level (EPNdB)		
					Takeoff	Sideline	Approach
Boeing	747-8F	700,000	600,000	GEnx-2B67	85.3	94.8	99.6
Boeing	747-8F	750,000	630,000	GEnx-2B67	86.9	94.6	99.9
Boeing	747-8F	800,000	651,000	GEnx-2B67	88.5	94.4	100.1
Boeing	747-8F	850,000	682,000	GEnx-2B67	90.0	94.3	100.4
Boeing	747-8F	875,000	700,000	GEnx-2B67	90.8	94.2	100.5
Boeing	747-8F	910,000	749,000	GEnx-2B67	91.9	94.1	100.9
Boeing	747-8F	950,000	759,000	GEnx-2B67	93.2	94.0	100.9
Boeing	747-8F	975,000	761,000	GEnx-2B67	94.0	94.0	100.9
BOEING	B-747-400	875,000	652,000	PW4056	101.6	99.7	104.7
BOEING	B-747-400	875,000	652,000	PW4056 PH3 (FB2B)	99.7	98.6	103.6
BOEING	B-747-400	875,000	652,000	PW4056 PH3 (FB2C)	98.6	98.4	103.0
BOEING	B-747-400	875,000	652,000	PW4056 PH3 (FB2C) NR	97.4	98.1	102.1
BOEING	B-747-400	875,000	652,000	PW4056 PKG B/PHASE I	99.3	98.5	103.4
Airbus	A340-642	804,690	564,380	Trent 556-61	94.2	95.9	99.9
Airbus	A380-841	1,254,430	862,010	Rolls-Royce Trent 970	95.6	94.2	98.0
Airbus	A380-861	1,254,430	862,010	Engine Alliance GP7270	95.4	94.4	97.2

Sources:
Data for all 747-8F entries from http://easa.europa.eu/certification/type-certificates/noise.php file EASA-TCDS-A.196_(IM)_Boeing_747-06-19082011.pdf, EASA Record Numbers A16591 through A16598, respectively
Weights converted from EASA reported units of kg and rounded to tens of lb.
FAA AC-36-1H reported values of Takeoff and Sideline are the same as EASA/ICAO reported values of Flyover and Lateral, respectively.
Data for all B-747-400 entries, corresponding to INM type 747400, from FAA AC 36-1H, Appendix 1 (March 2, 2010), at http://www.faa.gov/about/office_org/headquarters_offices/apl/noise_emissions/aircraft_noise_levels/
Data for all A340s and A380s from entries from TCDSN database for Jets Issue 12 as posted in "TCDSN Jets.xls" on http://easa.europa.eu/certification/type-certificates/noise.php July 22,2011
A340-642 from Record Number A5242, which corresponds to INM 7.0b type "A340-642"
A380-841 from Record Number A10955, which corresponds to INM 7.0b type "A380-841"
A380-861 from Record Number A6642, which corresponds to INM 7.0b type "A380-861"

7. Bombardier CSeries - BOMBC

We propose to model BOMBC operations with INM type A319-131.

The Bombardier C Series is a new passenger aircraft that is expected to enter service with Republic airlines in 2015.[23] These aircraft are passenger aircraft with seating for 100 to 145 passengers and maximum takeoff weights in the range of 128,200.lb to 139,600 lb. The C Series will be powered by Pratt & Whitney's new PW1500 geared turbofan with a thrust range of 18,900 l. to 23,200 lb.[24] Engines of this type have recently started flight testing and therefore are yet in service with any aircraft type.[25] The aircraft configuration is with engines under the wing, similar to the Boeing 737 and Airbus A319. Bombardier's website indicates that the C Series will be "4-times quieter" than current production 110 to 130 seat aircraft.[26] INM type A319-131 appears to be a reasonable match. Although the A319-131 is heavier than other current production aircraft in the INM such as the 737-700, the A319-131 is quieter.[27]

8. Embraer 190 - E190/E190/E90/EMJ

We propose to model Embraer 190 operations with INM type A319-131 as approved by the FAA for BNA.

The Embraer 190 is similar to the Embraer 170, although slightly larger and heavier and is listed as INM 7.0b standard EMB190, mapped to the GV.

Table 14presents noise certification data for the Embraer 190, Airbus A319-131 and several other aircraft. Although the A319-131 is almost 40% heavier than the Embraer 190, the certification noise levels are close, especially for Takeoff/Fly Over and Sideline/Lateral. The Bombardier CRJ-900 (INM type CRJ9-LR) and Gulfstream V (INM type GV) are at least 2 EPNdB quieter at the same two locations.

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[23] http://www.flightglobal.com/articles/2010/02/25/338823/republic-orders-40-cseries-and-options-40-more.html

[24] http://cseries.com/en/medias/gallery/literature/factsheetcs100_en.pdf
http://cseries.com/en/medias/gallery/literature/factsheetcs300_en.pdf

[25] http://www.pratt-whitney.com/media_center/press_releases/2011/06_jun/6-21-2011_00002.asp

[26] http://cseries.com/en/#/cseries/environment/noisereduction/noisereductioncs100/
http://cseries.com/en/#/cseries/environment/noisereduction/noisereductioncs300/

[27] Single point comparison of an aircraft flying directly overhead with SEL metric. Departure grid point set to 15,000 ft from the start-of-take-off roll using profile STANDARD-1 and an arrivals point 5,000 ft from the landing threshold. INM standard weather conditions at sea level, 0 gradient runway. The A319-131 SEL values for are 87.8 dB for departure and 90.8 for arrival. The 737700 SEL values for are 88.7 dB for departure and 95.7 for arrival.

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Table 14 Noise Certification Data from Embraer 190, Airbus A319 and Gulfstream GV

Manufacturer	Type Designation	MTOW (lb)	MLW (lb)	Engine Manufacturer / Type Designator	Effective Perceived Noise Level (EPNdB)		
					Fly Over	Lateral	Approach
EMBRAER	ERJ-190-100 IGW	114,200	97,000	CF34-10E6	86.9	91.9	92.8
EMBRAER	ERJ 170-100 (SE)	82,012	73,414	CF34-8E5	83.2	92.0	94.9
EMBRAER	ERJ 170-100 (SE)	82,012	72,312	CF34-8E5	84.1	92.3	94.9
EMBRAER	ERJ 170-200 (LR)	85,517	74,957	CF34-8E5	84.4	91.9	95.0
BOMBARDIER	CL-600-2D24 (CRJ-900)	84,500	73,500	CF34-8C5 & CF34-8C5A1	84.6	89.1	93.2
AIRBUS	A319-131	158,730	149,910	V2522-A5	85.3	91.4	94.5
GULFSTREAM	G-V	90,500	75,300	BR700-710A1-10	80.3	89.1	90.8

Source: FAA AC 36-1H, Appendix 1 (March 2, 2010), at
http://www.faa.gov/about/office_org/headquarters_offices/apl/noise_emissions/aircraft_noise_levels/
Source for the Embraer 170: file "TCDSN Jets (080711).xls", as posted on
http://easa.europa.eu/ws_prod/c/c_tc_noise.php on November 12, 2008
Note:
The certification data for the Airbus A319-131 with V2522-A5 engines indicate weights that do not match INM exactly. However the maximum takeoff weight in INM does correspond to another A319 variant.
Weights converted from EASA reported units of kg and rounded to tens of lb.
FAA AC-36-1H reported values of Takeoff and Sideline are the same as EASA/ICAO reported values of Flyover and Lateral, respectively.

9. Cessna 560XL Citation Excel C56X

We propose to model the C56X operations with INM type CNA55B as recommended for JAN.

In the JAN Part 150 the FAA approved the Cessna Citation Bravo (CNA55B) as the substitution aircraft for the Cessna Citation Excel (Cessna model 560XL). Both aircraft have the PW500 series power plants with similar certification noise levels shown in Table 15.

Table 15 Noise Certification Data from Cessna 560XL and Cessna 550 Bravo

Manufacturer	Type Designation	MTOW (lb)	MLW (lb)	Engine Manufacturer / Type Designator	Effective Perceived Noise Level (EPNdB)		
					Takeoff	Sideline	Approach
Cessna	Cessna 560XL	20,000	18,700	PW545A	72.4	85.3	93.1
Cessna	Cessna 550 Bravo	14,800	13,500	PW530A	73.7	85.2	91.2

Source: FAA AC 36-1H, Appendix 1 (March 2, 2010), at
http://www.faa.gov/about/office_org/headquarters_offices/apl/noise_emissions/aircraft_noise_levels/

10. Cessna Citation Sovereign - C680

We propose to model C680 operations with INM type LEAR35 as approved for BNA.

For BNA, the FAA approved the LEAR35 as the substitution aircraft for the Cessna Citation Sovereign (Cessna model 680). This aircraft is relatively new (certification completed in 2004) with a maximum takeoff weight (MTOW) of 30,300 lb., maximum landing weight (MLW) of 27,100 lb. and is powered by two Pratt & Whitney Canada PW306C turbofans rated at 5,770 pounds (lb.) These weights are similar to INM types CL600 and CL601. Table 16 provides certification values for these three aircraft and the LEAR35.

Table 16 Noise Certification Data from Cessna 680, Bombardier CL-601, Bombardier CL-600 and Learjet LEAR35

Manufacturer	Type Designation	MTOW (lb)	MLW (lb)	Engine Manufacturer / Type Designator	Effective Perceived Noise Level (EPNdB)		
					Fly Over	Lateral	Approach
Cessna	Cessna 680	30,298	27,099	PW 306C	71.8	87.5	91.3
Bombardier	CL-601-3R	45,100	36,000	CF-34-3A1	79.8	85.7	90.1
Bombardier	CI-600	36,000	33,000	ALF-502	81.6	89.3	91.2
Learjet	LEAR 35 A	18,000	14,300	TFE731-2-2B	83.6	87.4	91.3

Source for Cessna 680: EASA Record No. A2489, file "TCDSN Jets (080711).xls", as posted on http://easa.europa.eu/ws_prod/c/c_tc_noise.php on November 12, 2008
Source for Bombardier CL-601, CL-600 and LEAR35: FAA AC 36-1H, Appendix 1 (March 2, 2010), at http://www.faa.gov/about/office_org/headquarters_offices/apl/noise_emissions/aircraft_noise_levels/
Weights converted from EASA reported units of kg and rounded to tens of lb.
FAA AC-36-1H reported values of Takeoff and Sideline are the same as EASA/ICAO reported values of Flyover and Lateral, respectively.

11. Bombardier Challenger 300 - CL30

We propose to model CL30 operations with INM type CL600 as approved for BNA.

The CL30 (Bombardier engineering designation BD-100-1A10) is a relatively new twin-engine corporate jet with a MTOW of 38,500 lb. and MLW of 33,750 lb. The aircraft's Honeywell HTF700 (formerly AS907) engines are thrust rated between 6,500 lb. to 8,050 lb. This is comparable to the INM type CL600 (MTOW 36,000 lb., MLW of 33,000 lb. and max. static thrust 7,500 lb. according to INM 7.0b). Table 17 presents the noise certification data from the CL30 and CL600.

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Table 17 Noise Certification Data from Bombardier Challenger 300 and Bombardier CL-600

Manufacturer	Type Designation	MTOW (lb)	MLW (lb)	Engine Manufacturer / Type Designator	Effective Perceived Noise Level (EPNdB)		
					Takeoff	Sideline	Approach
Bombardier	BD-100-1A10 (CL300)	38,500	33,750	AS907-1-1A	75.3	87.6	89.6
Bombardier	CL-600	36,000	33,000	ALF-502	81.6	89.3	91.2
Source: FAA AC 36-1H, Appendix 1 (March 2, 2010), at http://www.faa.gov/about/office_org/headquarters_offices/apl/noise_emissions/aircraft_noise_levels/							

12. Dassault Falcon 7X - FA7X

We propose to model FA7X operations with INM type F10062 as recommended by FAA for SDF.

The Dassault Falcon 7X is a relatively new three-engine (two are fuselage mounted, one tail mounted) corporate jet and does not have an FAA-approved INM substitution. The FA7X is powered by three Pratt & Whitney Canada PW 307A engines and is heavier than previous three-engine Dassault corporate aircraft that are powered by Allied Signal/Garrett TFE731 series engines (i.e. Falcon 50 and Falcon 900). Certification from EASA indicates that the INM F10062 would be an appropriate substitution. The Dassault Falcon 7X has a certified MTOW of 31,298 kg (69,000 lb.) and a certified MLW of 28,304 kg (62,400 lb.). For comparison, the Fokker 100 has a MTOW of 43,090 kg and a MLW of 38,780 kg. Since the FA7X has three-engines and the Fokker 100 has two engines (along with most other candidate INM 7.0b types), thrust to weight comparisons would not be effective because three-engine and two-engine aircraft have different certification requirements regarding available thrust for engine-out conditions. Table 18 presents a comparison of the Dassault Falcon 7X and Fokker 100 certification data.

Table 18 Noise Certification Data from Dassault Falcon 7X and Fokker 100

Manufacturer	Type Designation	MTOW (lb)	MLW (lb)	Engine Manufacturer / Type Designator	Effective Perceived Noise Level (EPNdB)		
					Fly Over	Lateral	Approach
Dassault Aviation	Falcon 7X	31,298	28,304	Pratt & Whitney Canada PW 307 A	83.7	90.4	92.6
Fokker Services	F28 Mark 0100	43,090	38,780	Rolls-Royce Tay 620-15	83.4	89.3	93.1
Source: EASA file "TCDSN Jets (080711).xls", as posted on http://easa.europa.eu/ws_prod/c/c_tc_noise.php on November 12, 2008 Notes Weights converted from EASA reported units of kg and rounded to tens of lb.							

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13. Embraer EMB-500 Phenom 100 – E50P

We propose to model EMB-500 Phenom 100 operations with INM type CNA510 as approved for BNA.

Table 19 presents certification data for the EMB-500 and similar types that are available in INM. The Cessna Mustang, identified in INM 7.0b as CNA510, has the same series of engines as the EMB-500 and provides the closest match in certification levels.

Table 19 Noise Certification Data for Embraer EMB 500 Phenom 100, Cessna Citation Mustang, Eclipse 500 and Cessna Bravo

Manufacturer	Type Designation	MTOW (lb)	MLW (lb)	Engine Manufacturer / Type Designator	Effective Perceived Noise Level (EPNdB)		
					Fly Over	Lateral	Approach
Embraer	EMB 500	10,472	9,766	Pratt & Whitney Canada / PW617F-E	70.4	81.4	86.1
Cessna Aircraft Company	Cessna 510 / Citation Mustang	8,644	8,001	Pratt & Whitney Canada / PW615F-A	73.9	85.0	86.0
Eclipse Aerospace, Inc.	EA500	6,001	5,600	Pratt & Whitney Canada / PW610F-A	69.2	78.9	81.9
Cessna Aircraft Company	Model 550 / Bravo	14,800	13,499	Pratt & Whitney Canada / PW530A	73.7	85.2	91.2

Source:
"TCDSN Jets (080711).xls", at http://easa.europa.eu/ws_prod/c/c_tc_noise.php on January 4, 2010.
Notes:
Weights converted from EASA reported units of kg and rounded to tens of lb.
FAA AC-36-1H reported values of Takeoff and Sideline are the same as EASA/ICAO reported values of Flyover and Lateral, respectively.

14. Embraer EMB-505 Phenom 300 – E55P

We propose to model EMB-505 Phenom 300 operations with INM type IA1125.

Table 20 presents certification data for the EMB-505 and similar types that are available in INM. The Israel Aircraft 1125 ASTRA, identified in INM 7.0b as IA1125, could arguably have the best match, especially in the lateral and approach levels.

Table 20 Noise Certification Data for Embraer EMB 505 Phenom 300, Learjet 35, Israel Aircraft 1125, Cessna 650 Citation III and Cessna Bravo

Manufacturer	Type Designation	MTOW (lb)	MLW (lb)	Engine Manufacturer / Type Designator	Effective Perceived Noise Level (EPNdB)		
					Fly Over	Lateral	Approach
Embraer	EMB 505 / Phenom 300	17,968	16,865	Pratt & Whitney Canada / PW535E	69.9	88.8	88.5
Learjet	LEAR 35 A	18,000	14,300	TFE731-2-2B	83.6	87.4	91.3
Israel Aircraft	1125 ASTRA	23,500	20,700	TFE731-3A-200G	82.3	89.8	89.8
Cessna	650 Citation III	21,000	17,000	TFE731-3B-100S	84.9	92.5	92.4
Cessna Aircraft Company	Model 550 / Bravo	14,800	13,499	Pratt & Whitney Canada / PW530A	73.7	85.2	91.2

Source for Embraer EMB 505 and Cessna Model 550 Bravo (CNA55B):
http://easa.europa.eu/ws_prod/c/c_tc_noise.php on January 4, 2010.
Source for Learjet 35 (LEAR35), 1125 ASTRA (IA1125) and Citation III (CIT3): FAA AC 36-1H, Appendix 1 (March 2, 2010), at http://www.faa.gov/about/office_org/headquarters_offices/apl/noise_emissions/aircraft_noise_levels/
Notes:
Weights converted from EASA reported units of kg and rounded to tens of lb.
FAA AC-36-1H reported values of Takeoff and Sideline are the same as EASA/ICAO reported values of Flyover and Lateral, respectively.

15. Dassault Falcon 50 and Falcon 900 – FAL50, FAL900

We propose to model the FAL50 and FAL900 with a USER Defined type, which is a copy of the LEAR35 aircraft and associated noise-power-distance (NPD) curves and adds 1.8 dB to the NPD curves as described in the INM 5.1 User Guide, pg. 8-9.

The FAL50 and FAL900 are similar to the LEAR35 model in the INM except they have a third TFE731 engine. The aircraft type designator's for these aircraft include FA50 for the Falcon 50 and F900 and FA90 for the Falcon 900.

16. Gulfstream 150 - G150

We propose to model G150 operations with INM type IA1125 as approved for BNA.

The Gulfstream 150 is a relatively new aircraft and is sometimes described as a wide body variant of the Galaxy Aerospace Astra (INM Type IA1125 with TFE731-3A engines). However the wing and engine have changed. The G150 has a MTOW of 26,100 lb., a MLW of 21,700 lb. and Honeywell TFE731-40 AR-200G rated at 4,420 lb.

Table 21 presents the certification data for the aforementioned aircraft types based on certification levels. The IA1125 is similar to the G150 in terms of both weight and certification data points.

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Table 21 Noise Certification Data from Gulfstream G150, Hawker 800 and Israel Aircraft 1125 Astra

Manufacturer	Type Designation	MTOW (lb)	MLW (lb)	Engine Manufacturer / Type Designator	Effective Perceived Noise Level (EPNdB)		
					Fly Over	Lateral	Approach
Gulfstream Aerospace	Gulfstream G150	26,101	21,700	Honeywell TFE731-40AR-200G	80.7	91.2	91.9
ISRAEL AIRCRAFT	1125 ASTRA	23,500	20,700	TFE731-3A-200G	82.3	89.8	89.8

Notes: Source for Gulfstream G150: file "TCDSN Jets (080711).xls", at http://easa.europa.eu/ws_prod/c/c_tc_noise.php on November 12, 2008. Source for 1125 ASTRA: FAA AC 36-1H, Appendix 1 (March 2, 2010), at http://www.faa.gov/about/office_org/headquarters_offices/apl/noise_emissions/aircraft_noise_levels/
Notes:
Weights converted from EASA reported units of kg and rounded to tens of lb.
FAA AC-36-1H reported values of Takeoff and Sideline are the same as EASA/ICAO reported values of Flyover and Lateral, respectively.

17. Bombardier BD-700 Global Express/Global 5000 – GL5T and GLEX

We propose to model GL5T and GLEX operations with INM type GV as approved for BNA.

The GLEX, Bombardier BD-700 Global Express, is similar to the Gulfstream V (INM 7.0b type GV). Both aircraft use variants of the Rolls-Royce BR710 engine and both have similar maximum takeoff weights, landing weights and noise levels. Table 22 provides a comparison of the noise certification data for these aircraft.

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Table 22 Noise Certification Data from Bombardier Global Express and Gulfstream GV

Manufacturer	Type Designation	MTOW (lb)	MLW (lb)	Engine Manufacturer / Type Designator	Effective Perceived Noise Level (EPNdB)		
					Fly Over	Lateral	Approach
Bombardier	BD-700-1A10 (Global Express)	96,000	78,500	BR700-710-A2-20	82.7	88.6	89.8
Bombardier	BD-700-1A10 (Global Express)	93,500	78,500	BR700-710-A2-20	82.1	88.7	89.8
Bombardier	BD-700-1A10 (Global Express) (Learjet STC: SA8184nm-D)	75,000	75,000	Rolls Royce/ BR700-710-A2-20	75.6	89.3	89.7
Bombardier	BD700-1A11 (Global 5000)	92,500	78,600	Rolls Royce/ BR700-710A2-20	81.3	88.9	89.7
Gulfstream	G-V	90,500	75,300	BR700-710-A1-10	80.3	89.1	90.8

Source: FAA AC 36-1H, Appendix 1 (March 2, 2010), at
http://www.faa.gov/about/office_org/headquarters_offices/apl/noise_emissions/aircraft_noise_levels/
Source for Global 5000 from EASA TCDSN database for Jets Issue 12 as posted in "TCDSN Jets.xls" on
http://easa.europa.eu/certification/type-certificates/noise.php July 22,2011
Notes:
Weights converted from EASA reported units of kg and rounded to tens of lb.
FAA AC-36-1H reported values of Takeoff and Sideline are the same as EASA/ICAO reported values of Flyover and Lateral, respectively.

18. Raytheon Hawker-125-1000 – H25C

We propose to model H25C operations with INM type LEAR35 as approved for VNY.

We compared the Hawker 125-1000 with the Hawker 800 and LEAR35 aircraft shown in Table 23. Based on the comparison, the LEAR35 appears to be a good match.

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Table 23 Noise Certification Data from BAe-125-1000 and -800 and LEAR35

Manufacturer	Type Designation	MTOW (lb)	MLW (lb)	Engine Manufacturer / Type Designator	Effective Perceived Noise Level (EPNdB)		
					Takeoff	Sideline	Approach
Raytheon	Hawker 125-1000	31,000	25,000	PW305	81.8	85.9	91.6
Raytheon	Hawker 125-800	27,400	23,350	TFE731-5R-1H	80.9	87.2	96.5
Learjet	LEAR 35 A	18,000	14,300	TFE731-2-2B	83.6	87.4	91.3

Source: FAA AC 36-1H, Appendix 1 (March 2, 2010), at
http://www.faa.gov/about/office_org/headquarters_offices/apl/noise_emissions/aircraft_noise_levels/

19. Hawker Beechcraft Hawker 4000 - HA4T

We propose to model Hawker 4000 operations with INM type CL600 as approved for BNA

The Hawker 4000 is a relatively new aircraft in operational service, although the aircraft was certified in 2006 when the program was then owned by Raytheon. Previously this aircraft had been marketed as the Horizon 1000 (note – this aircraft is different than the Hawker 125-1000). This aircraft has Pratt & Whitney Canada PW308A engines, which are not used by any standard INM aircraft. However, the PW308C engines are used by the newer Falcon 2000EX variants. Both of these aircraft have relatively high Lateral/Sideline certification levels compared to other aircraft with similar weights. The Falcon 2000 is an INM standard substitution (FAL20A) and maps to the CL600.

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Table 24 Noise Certification Data for Hawker 4000 and Various Similar Aircraft

Manufacturer	Type Designation	MTOW (lb)	MLW (lb)	Engine Manufacturer / Type Designator	Effective Perceived Noise Level (EPNdB)		
					Fly Over	Lateral	Approach
Hawker Beechcraft Corporation	Model 4000	39,498	33,499	Pratt & Whitney Canada / PW308A	75.1	91.6	91.6
Dassault	Falcon 2000EX	40,999	39300	Pratt & Whitney Canada / PW308C	76.7	91.7	91.0
Dassault	Falcon 2000	36,500	33,000	CFE738-1-1B	79.4	86.4	93.1
Bombardier	CL-600	36,000	33,000	ALF-502	81.6	89.3	91.2

Notes:
Source for Hawker 4000: http://easa.europa.eu/ws_prod/c/c_tc_noise.php on January 4, 2010.
Source for Dassault Falcon 2000 (INM Substitution FAL20A), Gulfstream (G-IV): FAA AC 36-1H, Appendix 1 (March 2, 2010), at http://www.faa.gov/about/office_org/headquarters_offices/apl/noise_emissions/aircraft_noise_levels/
Weights converted from EASA reported units of kg and rounded to tens of lb.
FAA AC-36-1H reported values of Takeoff and Sideline are the same as EASA/ICAO reported values of Flyover and Lateral, respectively.

20. Learjet 40 – LJ40

We propose to model LJ40 operations with INM type LEAR35 as approved for BNA.

The LJ40 is a derivative of the Learjet 45 (LJ45) with a shorter fuselage. The LJ40 and LJ45 engines are both versions of the Honeywell TFE731-20AR. In INM 7.0b the LJ45 is mapped to the substitution aircraft, LEAR35.

21. Hawker Beechcraft Premier 1 390 - PRM1

We propose to model PRM1 operations with INM type CNA500 as approved for BNA.

The PRM1 is a relatively new light twin-engine corporate jet. The maximum takeoff weight is 12,500 lb. and maximum landing weight is 11,600 lb. The aircraft is powered by two William FJ44-2A turbo fans, each rated at 2,300 lb. The PRM1 is similar in weight and engines as the Cessna 525A (max takeoff weight of 12,375 lb., max landing weight of 11,500 lb., powered by William FJ44-2C turbofans with max thrust of 2,400 lb.) , which has an INM standard substitution of CNA525 and is mapped to the CNA500. In addition, the Cessna 525A and the PRM1 have similar noise certification data as summarized in Table 25.

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Table 25 Noise Certification Data from Cessna 525A and Bombardier Beechcraft 390 Premier I

Manufacturer	Type Designation	MTOW (lb)	MLW (lb)	Engine Manufacturer / Type Designator	Effective Perceived Noise Level (EPNdB)		
					Takeoff	Sideline	Approach
Cessna	525A Citation Jet II (CJ-2)	12,370	11,500	FJ44-2C	74.5	88.8	91.4
Raytheon	390 Premier	12,500	11,600	FJ44-2A	76.6	87.9	92.0

Source: FAA AC 36-1H, Appendix 1 (March 2, 2010), at
http://www.faa.gov/about/office_org/headquarters_offices/apl/noise_emissions/aircraft_noise_levels/

22. Piaggio P-180 Avanti – P180

We propose to model the P180 as INM type DHC6 as approved by the FAA for VNY.

The Piaggio P-180 Avanti has two PT6A-66 turboprops which appear to be similar to the DHC6 turboprops, PT6A-27.

23. Piper Malibu Meridian – P46T

We propose to model the P46T as INM type SD330 as approved by the FAA for VNY.

The SD330 INM type was recommended by the FAA for the Piper Malibu Meridian for the Van Nuys Airport Part 161 study and approved for the VNY NEM and the APF Part 150 study.

24. Pilatus PC-12 – PC12, Socata TBM-700 – TBM7 and Socata TBM-850 – TBM8

We propose to model PC12 and TBM7 operations with INM type CNA208 as approved by FAA for VNY. We also propose to model TBM8 operations with INM type CNA208.

The FAA recommended the INM aircraft type CNA208 for the PC12 and TBM7 turboprop aircraft in prior studies. The TBM8 is an updated version of the TBM7 (Socata's engineering designation for the TBM8 is "TBM 700N).

25. Grumman AA-1 – AA1

We propose to model AA1 operations with INM type GASEPF as approved for APF.

This aircraft is a small single-engine aircraft that would probably be best modeled as GASEPF.

26. Diamond Aircraft Katana, Diamond Star - DA40

We propose to model DA-40 operations with INM type GASEPV as approved for BNA.

These aircraft are all small single-engine aircraft with either a two or three-blade, constant-speed, variable pitch propeller that would probably be best modeled as GASEPV.[28]

[28] Information on the options for the DA40 can be found on the Diamond Aircraft Industries Inc.'s website.
http://www.diamondaircraft.com/aircraft/da40_xls/specs.php
http://www.diamondaircraft.com/aircraft/da40_cs/specs.php

27. Piper Saratoga – PA32

We propose to model PA32 operations with INM type GASEPV as approved for SDF.

This aircraft has single-engine piston power plants with constant-speed variable pitch propeller that would probably be best modeled as GASEPV.

28. Kit Aircraft -Cirrus SR-22 and SR-20 - SR22, SR20

We propose to model the kit aircraft operations with INM type GASEPV as approved for BNA.

These aircraft types have a variety of different engine options and, as such, are difficult to characterize without having detailed specifications of the actual aircraft flying into LAX. Therefore, a conservative grouping of these types with the GASEPV INM aircraft type is made.

29. Various Propeller Aircraft

We propose to model the following aircraft operations, which account for less than 365 annual ops each, with INM type as listed in Table 26 below.

These aircraft types have a variety of different engine options and, as such, are difficult to characterize without having detailed specifications of the actual aircraft flying into LAX.

Table 26 Non-Standard Propeller Aircraft

Aircraft Code	Represented Aircraft Models	Recommended INM Substitution	Project Last Approved
B350	Beechcraft King Air 350	DHC6	VNY P150 NEM
B36T	Turboprop Bonanza 36	CNA206	BNA NEM
BE36	36 Bonanza	CNA206	BNA NEM
C10T	Cessna P210 (turbine)	CNA208	VNY P150 NEM
COL4	Lancair 400, Columbia 300/350/400	GASEPV	BNA NEM
P28A	Piper Cherokee Archer	GASEPF	SDF NEM
DA42	Diamond Twinstar	BEC58P	CLE NEM

Appendix B

INM Profile Extension Request

1. Statement of Benefit

The study area for this project has not yet been formally defined. However, the analysis will include sleep disturbance, which requires analysis to levels of 50 dB SEL indoors. At 50 dB SEL, most sleep disturbance methods predict approximately two percent of the population will be awakened,[1] while other methods indicate that values below 50 dB SEL should be ignored.[2] The proposed profile extensions are designed to prevent aircraft profiles ending (and associated noise) within the likely study area and thus affecting the sleep disturbance calculation. It should be noted that at LAX, many aircraft fly abeam the airport on the downwind leg, then 30 to 50 nautical miles (nm) total track distance before landing, while most INM standard arrival profiles are approximately 20 nm or less.

A similar profile extension for INM 6.1, for the Philadelphia International Airport (PHL) Runway 17-35 Extension EIS and PHL Capacity Enhancement Program was approved.

1.1 Methodology

We propose to extend profiles for aircraft using both procedure steps and fixed point profiles. Profiles will be extended in 1,000 ft. altitude increments for arrivals and 2,000 ft. altitude increments for departures. By extending in these increments, INM is able to compute aircraft performance data in a manner consistent with the standard profiles. The proposed extensions will only be developed for fixed-wing aircraft; standard INM profiles are used for helicopters.

The following is a list of the assumptions proposed for the extensions:

- Only INM standard profiles are to be extended.[3] To the greatest extent possible, the extended profiles should not modify aircraft performance and noise calculations or results in the region of the standard profiles (i.e. the departures below 10,000 ft. Above Field Elevation (AFE) and arrivals below 6,000 ft. AFE). Therefore we expect that the extensions will have no effect on the 65 dB Community Noise Equivalent Level (CNEL).
- Extended profiles will be developed only for aircraft with nighttime operations.
- All extended profiles will start/end at a cardinal Mean Sea Level (MSL) altitude.[4] There will be one extended segment with an altitude increment less than noted above to convert from AFE to MSL.[5]

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[1] Effects of Aviation Noise on Awakenings from Sleep, Federal Interagency Committee on Aviation Noise (FICAN), June 1997. That documented recommended the relationship: Awakenings = 0.0087 x (SEL-30)^1.79

[2] Quantities and Procedures for Description and Measurement of Environmental Sound — Part 6: Methods for Estimation of Awakenings Associated with Outdoor Noise Events Heard in Homes, ANSI S12.9-2008/Part 6. Section 4.1.

[3] In this section, "INM standard profile" refers to all INM-provided profiles such as STANDARD, ICAO A, and ICAO B.

[4] Even 1,000 ft. levels such as 12,000 ft. MSL instead of 12,100 ft. MSL.

[5] LAX as an airfield elevation of 125 ft. MSL. Therefore one departure extension segment will be 1,875 ft. instead of 2,000 ft. and one arrival extension segment will be 875 ft. instead of 1,000 ft.

- The departure profiles will be extended by adding a new segment at the end of the standard profile to reflect a climb to 24,000 feet (ft.) Mean Sea Level (MSL) using MaxClimb Thrust and zero flaps.
- The arrival profiles will be extended by adding a new segment at the beginning of the standard profile to reflect a descent from level flight and using extrapolated speed and thrust values. All level flight segments are above 6,000 ft. AFE and therefore are an extension of the INM standard profile and not a modification.
- Level flight altitudes for arrivals have been derived through radar data analysis and associated to respective ground tracks (which has been compared to published procedures). Hold downs below 6,000 ft. AFE that are already included in the INM standard profile will not be modified. Level flight altitudes that we propose to model are listed below
    - 6,125 ft. MSL / 6,000 ft. AFE (to represent aircraft at 6,000 ft. MSL)
    - 7,000 ft. MSL / 6,875 ft. AFE
    - 8,000 ft. MSL / 7,875 ft. AFE
    - 9,000 ft. MSL / 8,875 ft. AFE
    - 10,000 ft. MSL / 9,875 ft. AFE
    - 11,000 ft. MSL / 10,875 ft. AFE
    - 12,000 ft. MSL / 11,875 ft. AFE

INM aircraft profiles are available in the model in two formats: procedure steps and profile points. Procedure steps use the INM modules to compute the aircraft performance based on manufacturers' supplied data for different states of flight and conditions. Profile points are fixed profiles with supplied data for each location that are static and not modified by INM modules based on changes to INM study or case conditions. The following sections describe the development of departure and arrival extended profiles for aircraft with either type of INM standard profile.

1.2 Departures

We propose to extend all INM standard departure profiles to 24,000 ft. MSL altitude.[6] Our testing indicates that this should be sufficient given resulting ground track profiles to cover the likely study area extents. The following steps will be followed:

- Begin with the INM standard (STANDARD, ICAO A, ICAO B) profiles.
- Aircraft will climb from 10,000 ft. AFE to 24,000 ft. MSL altitude in 2,000 ft., or less, increments. The first extension segment is at a reduced altitude increment to put all future extensions at cardinal MSL increments.

[6] INM does not allow adequate thrust for certain aircraft-profile-stage length combinations to reach 24,000ft. MSL. Therefore, departure profiles maximum altitudes for such aircraft have been set to the following MSL elevations:
1900D-STANDARD-1: 12,000ft; 777200-ICAOAA-9: 22,000ft; 777200-ICAOBB-9: 22,000ft; CNA208-STANDARD-1: 18,000ft; CNA510-FLAPS_0-1: 22,000ft; CNA55B-FLAPS_0-1: 18,000ft; CNA750-FLAP_15-1: 20,000ft; GASEPF-STANDARD-1: 22,000ft; IA1125-STANDARD-1: 20,000ft

- Procedure steps aircraft will repeat the last climb profile step found in the standard profile in the noted increments. Table 1 provides an example of the 747400 extension. The 747400 is one of the most common INM types modeled for nighttime departures at LAX.
- The three fixed-point profile aircraft (CNA206, PA28, PA31) will climb at the same rate as the last INM standard climb segment (i.e. linear extrapolation distance based on altitude). The true airspeed above 10,000 ft. AFE will be computed for each point using a constant calibrated airspeed equal to the calibrated speed in the final INM standard point.[7] The thrust (THR_SET) will be computed using an analogous equation from the INM 7.0 Technical Manual.[8]

Table 1 747400 Extended Departure Profile

Procedure Profile Departure for 747400 (PROF_ID1 =STANDARD, PROF_ID2 = 7)							
STEP_NUM	STEP_TYPE	FLAP_ID	THR_TYPE	PARAM1	PARAM2	PARAM3	TYPE
1	T	10	T	0.0	0.0	0.0	INM STD
2	C	T_10H	T	1000.0	0.0	0.0	INM STD
3	A	10	C	963.6	216.4	0.0	INM STD
4	A	5	C	1114.2	259.6	0.0	INM STD
5	C	T_01	C	2544.0	0.0	0.0	INM STD
6	A	T_05	C	1329.4	270.0	0.0	INM STD
7	C	T_00H	C	5500.0	0.0	0.0	INM STD
8	C	T_00H	C	7500.0	0.0	0.0	INM STD
9	C	T_00H	C	10000.0	0.0	0.0	INM STD
10	C	T_00H	C	11875.0	0.0	0.0	LAX EXT
11	C	T_00H	C	13875.0	0.0	0.0	LAX EXT
12	C	T_00H	C	15875.0	0.0	0.0	LAX EXT
13	C	T_00H	C	17875.0	0.0	0.0	LAX EXT
14	C	T_00H	C	19875.0	0.0	0.0	LAX EXT
15	C	T_00H	C	21875.0	0.0	0.0	LAX EXT
16	C	T_00H	C	23875.0	0.0	0.0	LAX EXT

1.3 Arrivals

We propose to extend all INM standard arrival profiles up to the desired level flight altitude. The profile will be extended such that the aircraft will be modeled throughout the study area without ending prematurely within the study area.

The following steps will be followed:

[7] INM 7.0 Technical Manual, FAA-AEE_08-01, January 2008, Equation 2-42. The final true airspeed in the INM standard departure profile is converted to calibrated airspeed solving Equation 2-42 and using the density ratio at 10,000 ft. Mean Sea Level (assumption based on the development of INM standard profiles). For each altitude extension, the true airspeed is calculated using the extension altitude's density ratio and calibrated airspeed at the final point of the INM standard profile.

[8] INM 7.0 Technical Manual, FAA-AEE_08-01, January 2008, Equation 2-6, correct net thrust definition on page 5. The new corrected net thrust is computed by multiplying the ratio of the pressure ratio at the last point of the INM standard profile to the pressure ratio at the desired altitude.

- Start with INM standard profiles and extrapolate from 6,000 ft. in 1,000 ft. increments to the desired altitude. The last extension segment is at a reduced altitude increment to put all prior extensions at cardinal MSL increments. Hold downs below 6,000 ft. AFE that are already included in the INM standard profile will not be modified.
    - For aircraft with procedure steps, the first INM standard procedure step will be repeated in the noted increments from the desired altitude. A level flight segment will be added at the desired altitude. Small transition steps will be used to control the thrust transition from the level flight segment to the descent. Table 2 provides an example of the 747400 extension with a level flight segment at 10,000 ft. MSL. The 747400 is one of the most common INM types modeled for nighttime arrivals at LAX.
    - For profile-points aircraft,[9] the profile will be extended to the desired level flight altitude in the noted increments, by extrapolating the first two (i.e. highest points) in the INM standard profile and maintaining the descent angle of the first segment in the INM standard profile.[10] The true airspeed above 6,000 ft. AFE will be computed for each point using a constant calibrated airspeed equal to the calibrated speed in the initial INM standard arrival point.[11] The thrust (THR_SET) will be computed using an analogous equation from the INM 7.0 Technical Manual.[12] The level flight segment is developed with one of the two methodologies
        - For aircraft with procedure departure profiles. The level flight segment thrust is developed by creating a test departure with the appropriate standard arrival profile weight, level flight altitude and calibrated airspeed as explained in the departure section. This will be modeled to obtain profile points for the level flight segment from the flight.txt output file. Small transition steps will be used to control the thrust transition from the level flight segment to the descent.[13] Table 3 provides an example of the 777300 arrival extension with a level flight segment at 10,000 ft. MSL. The 777300 is one of the most common INM types modeled for nighttime arrivals at LAX.
        - For aircraft without procedure departure profiles. There are only three INM aircraft types in the LAX night time fleet mix that fit this description: CNA206; PA28; and PA31). The operations for all three aircraft types combined are less than .03 operations or less than twelve annual operations, across all three aircraft types. Since we do not have an efficient way to develop the level flight thrust for these types and these types represent so few operations, we propose to extend the profiles to higher altitudes, as discussed above, but will not place the aircraft in level flight.

[9] Aircraft defined with INM standard profile-point arrival profiles include 737800, 757300, 777200, 777300, CNA206, MD11GE, MD11PW, PA28, PA31

[10] We found several aircraft profiles defined with arrival profile-points have descent angles that differ from the standard 3-degree.

[11] See footnote7. This process is the same as for the departures except that the calibrated airspeed is computed from the initial INM standard arrival point at 6,000 ft. Mean Sea Level (assumption based on the development of INM standard profiles).

[12] See footnote8.

[13] The transition steps may also be used to make small adjustments in the true airspeed from the level flight segment to the descents segments. However, since the level flight segments are developed using the speeds in the arrival profile, this should be unlikely.

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Table 2 747400 Extended Arrival Profile with Level Flight Segment at 10,000 ft. MSL

Procedure Profile Arrival for 747400 to 10,000 ft.							
STEP_NUM	STEP_TYPE	FLAP_ID	THR_TYPE	PARAM1	PARAM2	PARAM3	TYPE
1	V	5		9875.0	250.0	250000.0	LAX EXT
2	V	5		9875.0	250.0	500.0	LAX EXT
3	D	5		9875.0	250.0	3.0	LAX EXT
4	D	5		8875.0	250.0	3.0	LAX EXT
5	D	5		7875.0	250.0	3.0	LAX EXT
6	D	5		6875.0	250.0	3.0	LAX EXT
7	D	5		6000.0	250.0	3.0	INM STD
8	D	10		3000.0	175.4	3.0	INM STD
9	D	D-25		1500.0	161.4	3.0	INM STD
10	D	D-30		1000.0	155.4	3.0	INM STD
11	L	D-30		533.6	0.0	0.0	INM STD
12	B		V	4802.4	147.5	10.0	INM STD
13	B		L	0.0	30.0	10.0	INM STD

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Table 3 777300 Extended Arrival Profile with Level Flight Segment at 10,000 ft. MSL

Profile Point Profile Arrival for 777300 to 10,000 ft.						
PT_NUM	DISTANCE	ALTITUDE	SPEED	THR_SET	OP_MODE	TYPE
1	-477221.2	9750.0	298.7	17243.90	A	LAX EXT
2	-227221.2	9750.0	298.7	17243.90	A	LAX EXT
3	-226721.2	9875.0	289.4	1.20	A	LAX EXT
4	-206309.5	8875.0	284.9	1.10	A	LAX EXT
5	-185897.9	7875.0	280.5	1.10	A	LAX EXT
6	-165486.2	6875.0	276.2	1.00	A	LAX EXT
7	-147626.0	6000.0	272.0	1.00	A	INM STD
8	-86391.0	3000.0	261.0	1.00	A	INM STD
9	-70159.0	3000.0	220.0	42.50	A	INM STD
10	-61102.0	3000.0	192.0	2231.00	A	INM STD
11	-56765.0	3000.0	179.0	5883.50	A	INM STD
12	-54191.0	3000.0	169.0	6413.00	A	INM STD
13	-54091.0	3000.0	169.0	2151.00	A	INM STD
14	-52237.0	2892.0	165.0	2077.50	A	INM STD
15	-48787.0	2702.0	150.0	2203.50	A	INM STD
16	-48454.0	2683.0	148.0	2224.50	A	INM STD
17	-48354.0	2683.0	148.0	20314.00	A	INM STD
18	-47301.0	2620.0	148.0	20266.00	A	INM STD
19	-42598.0	2359.0	147.0	20073.50	A	INM STD
20	-37914.0	2099.0	147.0	19883.50	A	INM STD
21	-33249.0	1841.0	146.0	19696.00	A	INM STD
22	-28603.0	1583.0	146.0	19512.00	A	INM STD
23	-23974.0	1326.0	145.0	19330.00	A	INM STD
24	-19364.0	1071.0	145.0	19151.00	A	INM STD
25	-14772.0	816.0	144.0	18974.50	A	INM STD
26	-10198.0	562.0	143.0	18800.00	A	INM STD
27	-5642.0	309.0	143.0	18629.00	A	INM STD
28	-1103.0	57.0	142.0	18460.00	A	INM STD
29	-979.0	50.0	142.0	18460.00	A	INM STD
30	0	0	141	18455	A	INM STD
31	445.7	0	134	7700	D	INM STD
32	4456.8	0	30	7700	A	INM STD

2. Analysis Demonstrating Benefit

Since we are making these modifications to all of the aircraft profiles and all profiles are developed using the same method, two representative aircraft types were selected to demonstrate the results. The selected types are discussed above and summarized below.

- 747400 representing departure procedure profiles
- 747400 representing arrival procedure profiles starting with a level flight segment at 10,000 ft. MSL
- 777300 representing arrival profile point profiles starting with a level flight segment at 10,000 ft. MSL

A grid point analysis is presented below in addition to SEL contour comparisons.

Table 4 presents a comparison of the noise modeling results for a 747400 aircraft using a STANDARD departure profile (up to 10,000 ft. AFE) and an extended departure profile (to 24,000 ft. MSL). Grid points under the flight path were modeled at every 0.5 nm from the start of takeoff out to 50 nm.

Figure 4 demonstrates the additional noise levels produced by extending the departure profiles for the 747400. The SEL contours for the INM standard profile are in thin black from 60 dB SEL to 75 dB SEL. The bold black contour lines are the SEL contours produced from the extended profiles from 60 dB SEL to 75 dB SEL. As seen in the figures the standard profiles end well before the end of the flight paths.

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Table 4 Comparison of Sound Exposure Level (SEL) for 747400 STANDARD-7 Profile versus Proposed Extended Profile

Grid Points (nm)	INM Standard Profile STANDARD-7 776,600 lb. (SEL dB)	User Defined Profile STD_XT24 776,600 lb. (SEL dB)	Difference (dB)
0.0	146.4	146.4	0.0
0.5	136.4	136.4	0.0
1.0	132.3	132.3	0.0
1.5	109.2	109.2	0.0
2.0	103.6	103.6	0.0
2.5	100.8	100.8	0.0
3.0	96.4	96.4	0.0
3.5	95.3	95.3	0.0
4.0	94.2	94.2	0.0
4.5	93.3	93.3	0.0
5.0	92.4	92.4	0.0
5.5	91.6	91.6	0.0
6.0	90.9	90.9	0.0
6.5	90.1	90.1	0.0
7.0	89.4	89.4	0.0
7.5	88.7	88.7	0.0
8.0	87.9	87.9	0.0
8.5	87.3	87.3	0.0
9.0	86.7	86.7	0.0
9.5	86.0	86.0	0.0
10.0	85.4	85.4	0.0
10.5	84.8	84.8	0.0
11.0	84.3	84.3	0.0
11.5	83.7	83.7	0.0
12.0	83.3	83.3	0.0
12.5	82.8	82.8	0.0
13.0	82.4	82.4	0.0
13.5	82.0	82.0	0.0
14.0	81.6	81.6	0.0
14.5	81.3	81.3	0.0
15.0	80.9	80.9	0.0
15.5	80.6	80.6	0.0
16.0	80.3	80.3	0.0
16.5	80.0	80.0	0.0
17.0	79.7	79.7	0.0

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Grid Points (nm)	INM Standard Profile STANDARD-7 776,600 lb. (SEL dB)	User Defined Profile STD_XT24 776,600 lb. (SEL dB)	Difference (dB)
17.5	79.4	79.4	0.0
18.0	79.1	79.2	0.1
18.5	78.9	78.9	0.0
19.0	78.6	78.7	0.1
19.5	78.4	78.5	0.1
20.0	78.0	78.3	0.3
20.5	77.6	78.1	0.5
21.0	76.7	77.9	1.2
21.5	75.3	77.8	2.5
22.0	73.0	77.6	4.6
22.5	70.2	77.4	7.2
23.0	67.2	77.3	10.1
23.5	64.3	77.2	12.9
24.0	61.6	77.0	15.4
24.5	59.2	76.9	17.7
25.0	57.0	76.8	19.8
25.5	55.1	76.7	21.6
26.0	53.3	76.5	23.2
26.5	51.7	76.4	24.7
27.0	50.2	76.3	26.1
27.5	48.8	76.2	27.4
28.0	47.5	76.1	28.6
28.5	46.3	76.0	29.7
29.0	45.2	75.9	30.7
29.5	44.1	75.8	31.7
30.0	43.1	75.8	32.7
30.5	42.2	75.7	33.5
31.0	41.3	75.6	34.3
31.5	40.4	75.5	35.1
32.0	39.6	75.4	35.8
32.5	38.8	75.4	36.6
33.0	38.1	75.3	37.2
33.5	37.4	75.2	37.8
34.0	36.7	75.2	38.5
34.5	36.1	75.1	39.0
35.0	35.4	75.0	39.6
35.5	34.8	75.0	40.2

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Grid Points (nm)	INM Standard Profile STANDARD-7 776,600 lb. (SEL dB)	User Defined Profile STD_XT24 776,600 lb. (SEL dB)	Difference (dB)
36.0	34.2	74.9	40.7
36.5	33.7	74.9	41.2
37.0	33.1	74.8	41.7
37.5	32.6	74.7	42.1
38.0	32.1	74.7	42.6
38.5	31.6	74.7	43.1
39.0	31.2	74.6	43.4
39.5	30.7	74.6	43.9
40.0	30.3	74.5	44.2
40.5	29.8	74.5	44.7
41.0	29.4	74.5	45.1
41.5	29.0	74.4	45.4
42.0	28.6	74.4	45.8
42.5	28.3	74.4	46.1
43.0	27.9	74.4	46.5
43.5	27.5	74.4	46.9
44.0	27.2	74.4	47.2
44.5	26.8	74.4	47.6
45.0	26.5	74.3	47.8
45.5	26.2	74.3	48.1
46.0	25.8	74.3	48.5
46.5	25.5	74.3	48.8
47.0	25.2	74.3	49.1
47.5	24.9	74.3	49.4
48.0	24.6	74.3	49.7
48.5	24.4	74.3	49.9
49.0	24.1	74.3	50.2
49.5	23.8	74.3	50.5
50.0	23.5	74.3	50.8
Sources: INM 7.0b			

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Figure 4 747400 Stage length 7 Departure, Standard vs. Proposed Extended Profile SEL contours

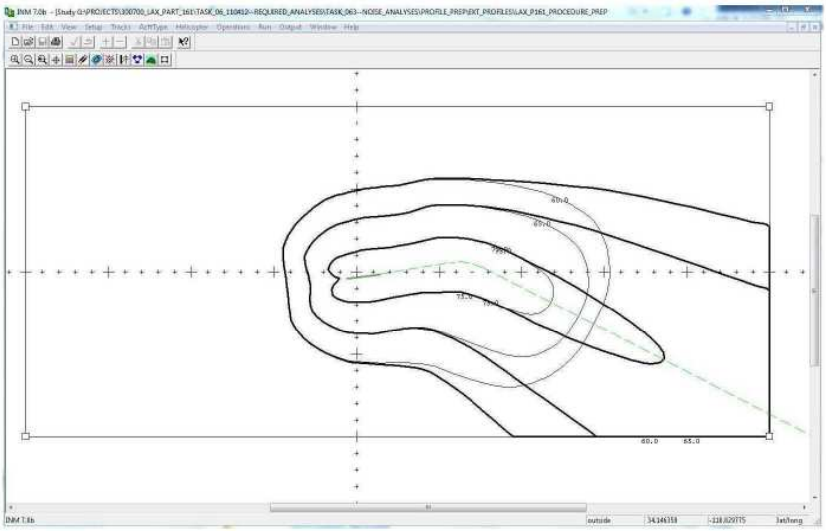

Table 5 compares the noise modeling results for a 747400 arrival using a STANDARD arrival profile (from 6,000 ft. AFE) and an extended arrival profile. The extended profile begins in level flight at 10,000 ft. MSL and then descends to the airport runway. Grid points under the flight path were modeled every 0.5 nm from 50 nm to landing on the runway.

Figure 5 demonstrates the additional noise levels produced by extending the 757PW arrival profiles. The SEL contours for the INM standard profile are in thin black from 60 dB SEL to 75 dB SEL. The bold black contour lines are the SEL contours produced from the extended profiles from 60 dB SEL to 75 dB SEL. As seen in the figures the standard profiles end well before the end of the flight paths.

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Table 5 Comparison of Sound Exposure Level (SEL) for 747400 Standard Arrival versus Proposed Extended Profile with 10,000 ft. MSL Level Flight Segment

Grid Points (nm)	INM Standard Profile STANDARD 567,000 lb. (SEL dB)	User Defined Profile STD_VX10 567,000 lb. (SEL dB)	Difference (dB)
50.0	14.4	70.1	55.7
49.5	14.7	70.1	55.4
49.0	14.9	70.2	55.3
48.5	15.1	70.2	55.1
48.0	15.4	70.1	54.7
47.5	15.6	70.1	54.5
47.0	15.9	70.1	54.2
46.5	16.1	70.1	54.0
46.0	16.4	70.1	53.7
45.5	16.6	70.1	53.5
45.0	16.9	70.1	53.2
44.5	17.2	70.1	52.9
44.0	17.4	70.1	52.7
43.5	17.7	70.1	52.4
43.0	18.0	70.1	52.1
42.5	18.3	70.1	51.8
42.0	18.6	70.1	51.5
41.5	18.9	70.1	51.2
41.0	19.2	70.1	50.9
40.5	19.5	70.1	50.6
40.0	19.9	70.1	50.2
39.5	20.2	70.1	49.9
39.0	20.6	70.1	49.5
38.5	20.9	70.1	49.2
38.0	21.3	70.1	48.8
37.5	21.7	70.1	48.4
37.0	22.0	70.1	48.1
36.5	22.4	70.1	47.7
36.0	22.9	70.1	47.2
35.5	23.3	70.1	46.8
35.0	23.7	70.1	46.4
34.5	24.2	70.1	45.9
34.0	24.7	70.1	45.4
33.5	25.2	70.1	44.9
33.0	25.7	70.1	44.4

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Grid Points (nm)	INM Standard Profile STANDARD 567,000 lb. (SEL dB)	User Defined Profile STD_VX10 567,000 lb. (SEL dB)	Difference (dB)
32.5	26.2	70.0	43.8
32.0	26.7	70.0	43.3
31.5	27.3	70.0	42.7
31.0	27.9	69.9	42.0
30.5	28.6	69.9	41.3
30.0	29.2	69.9	40.7
29.5	29.9	70.0	40.1
29.0	30.7	70.1	39.4
28.5	31.5	70.2	38.7
28.0	32.3	70.4	38.1
27.5	33.2	70.6	37.4
27.0	34.1	70.8	36.7
26.5	35.1	71.0	35.9
26.0	36.2	71.2	35.0
25.5	37.3	71.4	34.1
25.0	38.6	71.6	33.0
24.5	39.9	71.8	31.9
24.0	41.4	72.0	30.6
23.5	42.9	72.2	29.3
23.0	44.7	72.4	27.7
22.5	46.6	72.7	26.1
22.0	48.8	72.9	24.1
21.5	51.2	73.2	22.0
21.0	53.9	73.4	19.5
20.5	57.0	73.7	16.7
20.0	60.6	73.9	13.3
19.5	64.8	74.2	9.4
19.0	68.9	74.4	5.5
18.5	72.1	74.7	2.6
18.0	74.1	75.0	0.9
17.5	75.0	75.4	0.4
17.0	75.6	75.7	0.1
16.5	76.0	76.1	0.1
16.0	76.4	76.5	0.1
15.5	76.8	76.8	0.0
15.0	77.2	77.2	0.0
14.5	77.6	77.6	0.0

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Grid Points (nm)	INM Standard Profile STANDARD 567,000 lb. (SEL dB)	User Defined Profile STD_VX10 567,000 lb. (SEL dB)	Difference (dB)
14.0	78.1	78.1	0.0
13.5	78.5	78.5	0.0
13.0	79.0	79.0	0.0
12.5	79.4	79.4	0.0
12.0	79.9	79.9	0.0
11.5	80.4	80.4	0.0
11.0	80.9	80.9	0.0
10.5	81.4	81.4	0.0
10.0	82.0	82.0	0.0
9.5	82.6	82.6	0.0
9.0	83.1	83.1	0.0
8.5	83.7	83.7	0.0
8.0	84.3	84.3	0.0
7.5	84.9	84.9	0.0
7.0	85.6	85.6	0.0
6.5	86.3	86.3	0.0
6.0	87.1	87.1	0.0
5.5	87.8	87.8	0.0
5.0	88.6	88.6	0.0
4.5	89.5	89.5	0.0
4.0	90.4	90.4	0.0
3.5	91.6	91.6	0.0
3.0	93.0	93.0	0.0
2.5	94.2	94.2	0.0
2.0	95.7	95.7	0.0
1.5	97.5	97.5	0.0
1.0	99.7	99.7	0.0
0.5	102.9	102.9	0.0
0.0	107.6	107.6	0.0
Sources: INM 7.0b			

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Figure 5 747400 Arrival, Standard vs. Proposed Extended Profile with 10,000 ft. MSL Level Flight Segment SEL contours

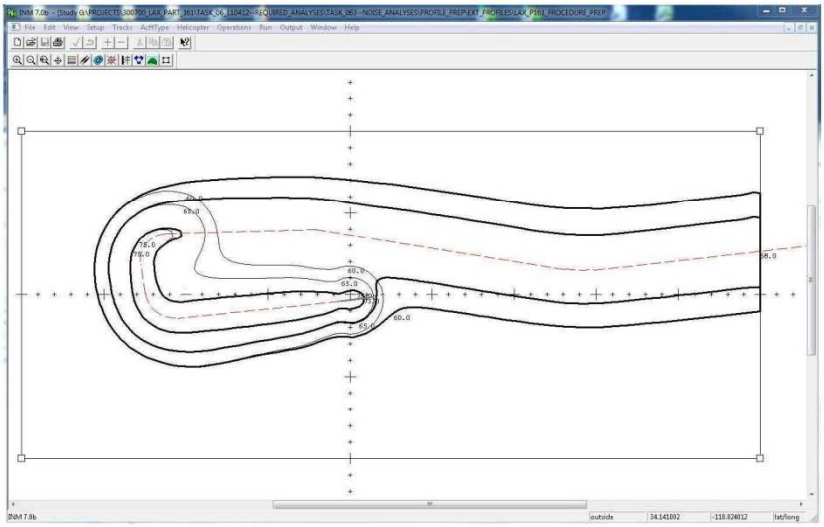

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Table 6 compares the noise modeling results for a 777300 arrival using a Standard Arrival profile (from 6,000 ft. AFE) and an extended arrival profile. The extended profile begins in level flight at 10,000 ft. MSL and then descends to the airport runway. Under the flight path, Grid points under the flight path were modeled every 0.5 nm from 50 nm to landing on the runway.

Figure 6 demonstrates the additional noise levels produced by extending the 777300 arrival profiles. The SEL contours for the INM standard profile are in thin black from 60 dB SEL to 75 dB SEL. The bold black contour lines are the SEL contours produced from the extended profiles from 60 dB SEL to 75 dB SEL. As seen in the figures the standard profiles end well before the end of the flight paths.

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Table 6 Comparison of Sound Exposure Level (SEL) for 777300 Standard Arrival versus Proposed Extended Profile with 10,000 ft. MSL Level Flight Segment

Grid Points (nm)	INM Standard Profile STANDARD 471,600 lb. (SEL dB)	User Defined Profile STD_VX10 471,600 lb. (SEL dB)	Difference (dB)
50.0	11.7	65.6	53.9
49.5	11.9	65.6	53.7
49.0	12.2	65.7	53.5
48.5	12.5	65.6	53.1
48.0	12.8	65.6	52.8
47.5	13.0	65.6	52.6
47.0	13.3	65.6	52.3
46.5	13.6	65.6	52.0
46.0	13.9	65.6	51.7
45.5	14.3	65.6	51.3
45.0	14.6	65.6	51.0
44.5	14.9	65.6	50.7
44.0	15.3	65.6	50.3
43.5	15.6	65.6	50.0
43.0	16.0	65.6	49.6
42.5	16.3	65.6	49.3
42.0	16.7	65.6	48.9
41.5	17.1	65.6	48.5
41.0	17.5	65.6	48.1
40.5	18.0	65.6	47.6
40.0	18.4	65.5	47.1
39.5	18.9	65.5	46.6
39.0	19.3	65.5	46.2
38.5	19.8	65.4	45.6
38.0	20.3	65.2	44.9
37.5	20.9	64.8	43.9
37.0	21.4	64.3	42.9
36.5	22.0	63.7	41.7
36.0	22.6	63.3	40.7
35.5	23.3	63.1	39.8
35.0	24.0	63.1	39.1
34.5	24.7	63.1	38.4
34.0	25.4	63.2	37.8
33.5	26.3	63.4	37.1
33.0	27.1	63.5	36.4

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Grid Points (nm)	INM Standard Profile STANDARD 471,600 lb. (SEL dB)	User Defined Profile STD_VX10 471,600 lb. (SEL dB)	Difference (dB)
32.5	28.0	63.7	35.7
32.0	29.0	63.9	34.9
31.5	30.0	64.0	34.0
31.0	31.1	64.2	33.1
30.5	32.4	64.4	32.0
30.0	33.7	64.6	30.9
29.5	35.1	64.8	29.7
29.0	36.6	65.0	28.4
28.5	38.3	65.2	26.9
28.0	40.2	65.4	25.2
27.5	42.3	65.6	23.3
27.0	44.6	65.8	21.2
26.5	47.2	66.0	18.8
26.0	50.2	66.2	16.0
25.5	53.6	66.5	12.9
25.0	57.4	66.7	9.3
24.5	61.2	66.9	5.7
24.0	64.2	67.1	2.9
23.5	66.2	67.4	1.2
23.0	67.2	67.6	0.4
22.5	67.7	67.8	0.1
22.0	68.0	68.1	0.1
21.5	68.3	68.3	0.0
21.0	68.6	68.6	0.0
20.5	68.9	68.9	0.0
20.0	69.2	69.2	0.0
19.5	69.4	69.4	0.0
19.0	69.7	69.7	0.0
18.5	70.0	70.0	0.0
18.0	70.4	70.4	0.0
17.5	70.7	70.7	0.0
17.0	71.0	71.0	0.0
16.5	71.3	71.3	0.0
16.0	71.7	71.7	0.0
15.5	72.0	72.0	0.0
15.0	72.4	72.4	0.0
14.5	72.8	72.8	0.0

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Grid Points (nm)	INM Standard Profile STANDARD 471,600 lb. (SEL dB)	User Defined Profile STD_VX10 471,600 lb. (SEL dB)	Difference (dB)
14.0	73.2	73.2	0.0
13.5	73.4	73.4	0.0
13.0	73.5	73.5	0.0
12.5	73.6	73.6	0.0
12.0	73.8	73.8	0.0
11.5	74.0	74.0	0.0
11.0	74.4	74.4	0.0
10.5	74.7	74.7	0.0
10.0	75.2	75.2	0.0
9.5	75.8	75.8	0.0
9.0	76.4	76.4	0.0
8.5	76.8	76.8	0.0
8.0	78.3	78.3	0.0
7.5	81.2	81.2	0.0
7.0	82.7	82.7	0.0
6.5	83.5	83.5	0.0
6.0	84.2	84.2	0.0
5.5	84.9	84.9	0.0
5.0	85.7	85.7	0.0
4.5	86.5	86.5	0.0
4.0	87.3	87.3	0.0
3.5	88.4	88.4	0.0
3.0	89.5	89.5	0.0
2.5	90.7	90.7	0.0
2.0	92.3	92.3	0.0
1.5	94.0	94.0	0.0
1.0	96.2	96.2	0.0
0.5	99.5	99.5	0.0
0.0	104.5	104.5	0.0
Sources: INM 7.0b			

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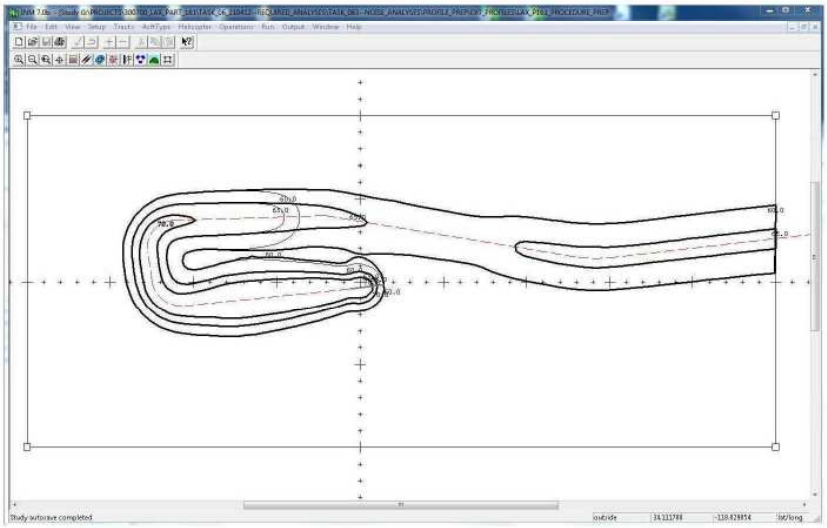
Figure 6 777300 Arrival, Standard vs. Proposed Extended Profile with 10,000 ft. MSL Level Flight Segment SEL contours



3. Concurrence on Aircraft Performance

This project began with the existing INM standard performance profiles and extended them to various cruise altitudes provided by the simulation model. Existing profiles were not modified (i.e. below 6,000 ft. AFE for arrivals and 10,000 ft. AFE for departures). Wherever possible, INM itself was used to aide in the generation of the extended profiles.

Actual input from airlines and or the manufacturer were not obtained to verify these procedures.

4. Certification of New Parameters

There were no new parameters developed. All profiles were copied and extended from existing profiles. For profiles using fixed-point profiles:

- Altitude is above field elevation in feet
- Speed is true airspeed in knots
- The thrust setting used match the units of the thrust setting parameter used in the aircraft's associated NPD curves.

For profiles using procedure steps:

- No new performance coefficient data were developed. Existing coefficients were used.

- The added steps conform to the rules given in the INM User's Guide.
- The thrust setting used match the units of the thrust setting parameter used in the aircraft's associated NPD curves.

5. Graphical and Tabular Comparison

The figures shown below provide comparisons of the standard vs. proposed modified profiles by altitude, speed and thrust All plots were developed from INM 7.0b for a LAX Runway 7L departure or arrival with temperature, pressure and humidity set to 63.0 Fahrenheit, 29.98 inches of Mercury and 70.3 % respectively.

Figures 7 through 9 show the altitude, speed and thrust plots respectively, for 747400 Stage Length 7 Departures. Table 7 and Table 8 present the same data in tabular from for the proposed extended profile and the INM standard profile. Note that all data for the proposed modified profile departures are identical below the 10,000 ft. AFE standard profile maximum altitude.

Figures 10 through 12 show the altitude, speed and thrust plots respectively, for 747400 Arrivals where the proposed modified profile descends from a 10,000 ft. MSL level flight segment. Table 9 and Table 10 present the same data in tabular from for the proposed extended profile and the INM standard profile. Note that all data for the proposed modified profile arrivals is identical below the 6,000 ft. AFE standard profile maximum altitude.

Figures 13 through 15 show the altitude, speed and thrust plots, respectively, for 777300 Arrivals where the proposed modified profile descends from a 10,000 ft. MSL level flight segment. Table 11 and Table 12 present the same data in tabular from for the proposed extended profile and the INM standard profile. Note that all data for the proposed modified profile arrivals is identical below the 6,000 ft. AFE standard profile maximum altitude.

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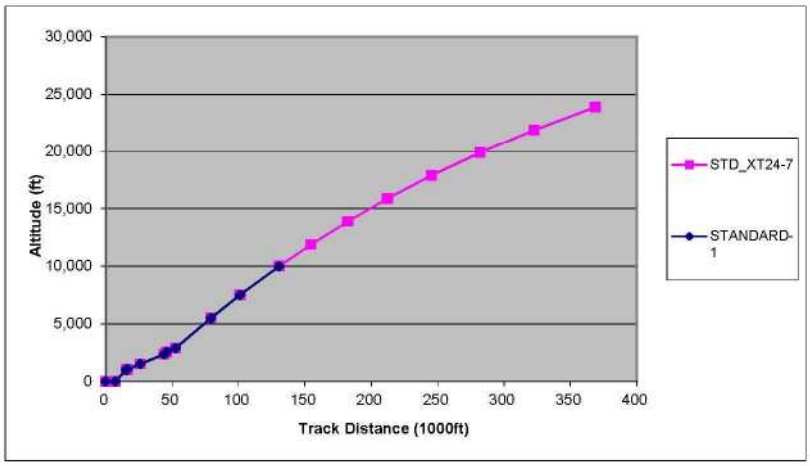

Figure 7 Altitude vs. Distance for 747400 Stage length 7 Departure, Standard vs. Modified profiles

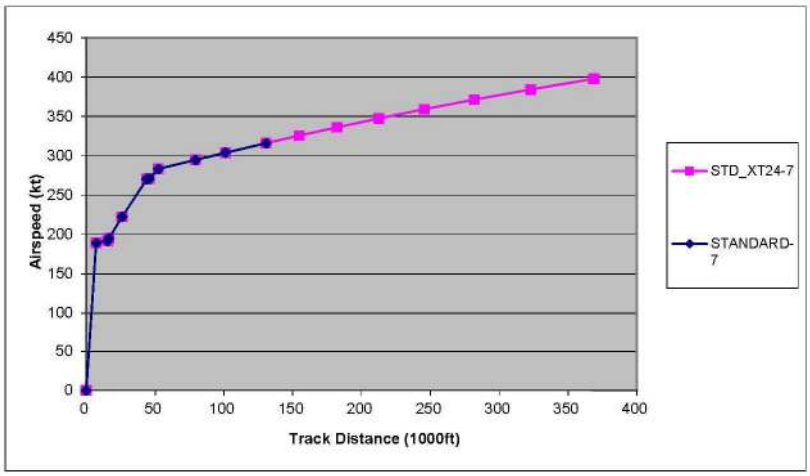

Figure 8 Airspeed vs. Distance for 747400 Stage length 7 Departure, Standard vs. Modified profiles

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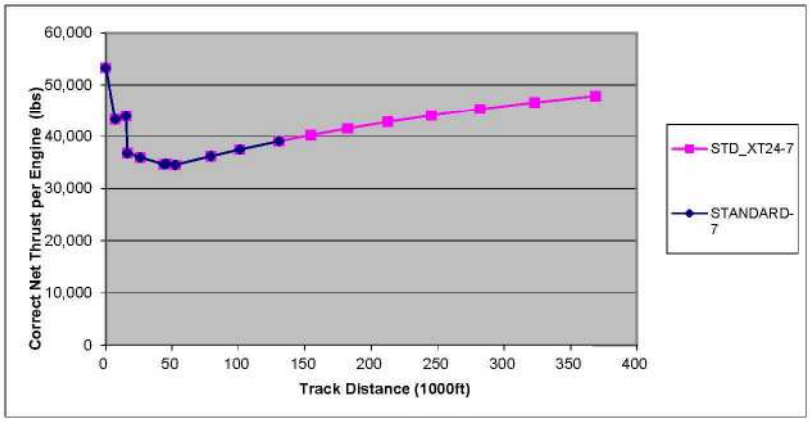

Figure 9 Thrust vs. Distance for 747400 Stage length 7 Departure, Standard vs. Modified profiles

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Table 7 747400 Departure State length 7 Proposed Extended Profile Altitude, Speed and Thrust Data

ACFT ID	OP TYPE	RWY ID	PROF ID1	PROF ID2	PT NUM	DISTANCE	ALTITUDE	SPEED	THR_SET
747400	D	07L	STD_XT24	7	1	0.0	0.0	0.0	53332.67
747400	D	07L	STD_XT24	7	2	7210.9	0.0	189.0	43284.88
747400	D	07L	STD_XT24	7	3	15406.1	1000.0	191.8	43891.17
747400	D	07L	STD_XT24	7	4	16406.1	1048.4	194.9	36824.19
747400	D	07L	STD_XT24	7	5	25997.1	1512.1	222.4	35941.28
747400	D	07L	STD_XT24	7	6	43885.3	2353.3	270.2	34635.13
747400	D	07L	STD_XT24	7	7	45781.6	2544.0	270.9	34756.39
747400	D	07L	STD_XT24	7	8	52452.4	2876.7	283.2	34524.71
747400	D	07L	STD_XT24	7	9	79188.5	5500.0	294.6	36192.54
747400	D	07L	STD_XT24	7	10	101077.8	7500.0	303.8	37464.09
747400	D	07L	STD_XT24	7	11	130592.7	10000.0	315.9	39053.52
747400	D	07L	STD_XT24	7	12	154576.3	11875.0	325.5	40245.59
747400	D	07L	STD_XT24	7	13	182201.2	13875.0	336.1	41517.13
747400	D	07L	STD_XT24	7	14	212294.9	15875.0	347.3	42788.68
747400	D	07L	STD_XT24	7	15	245313.1	17875.0	359.0	44060.22
747400	D	07L	STD_XT24	7	16	281834.7	19875.0	371.3	45331.77
747400	D	07L	STD_XT24	7	17	322611.0	21875.0	384.2	46603.31
747400	D	07L	STD_XT24	7	18	368642.7	23875.0	397.8	47874.85
Sources: INM 7.0b									

Table 8 747400 Departure Standard-7 Profile Altitude, Speed and Thrust Altitude, Speed and Thrust Data

ACFT ID	OP TYPE	RWY ID	PROF ID1	PROF ID2	PT NUM	DISTANCE	ALTITUDE	SPEED	THR_SET
747400	D	07L	STANDARD	7	1	0.0	0.0	0.0	53332.67
747400	D	07L	STANDARD	7	2	7210.9	0.0	189.0	43284.88
747400	D	07L	STANDARD	7	3	15406.1	1000.0	191.8	43891.17
747400	D	07L	STANDARD	7	4	16406.1	1048.4	194.9	36824.19
747400	D	07L	STANDARD	7	5	25997.1	1512.1	222.4	35941.28
747400	D	07L	STANDARD	7	6	43885.3	2353.3	270.2	34635.13
747400	D	07L	STANDARD	7	7	45781.6	2544.0	270.9	34756.39
747400	D	07L	STANDARD	7	8	52452.4	2876.7	283.2	34524.71
747400	D	07L	STANDARD	7	9	79188.5	5500.0	294.6	36192.54
747400	D	07L	STANDARD	7	10	101077.8	7500.0	303.8	37464.09
747400	D	07L	STANDARD	7	11	130592.7	10000.0	315.9	39053.52
Sources: INM 7.0b									

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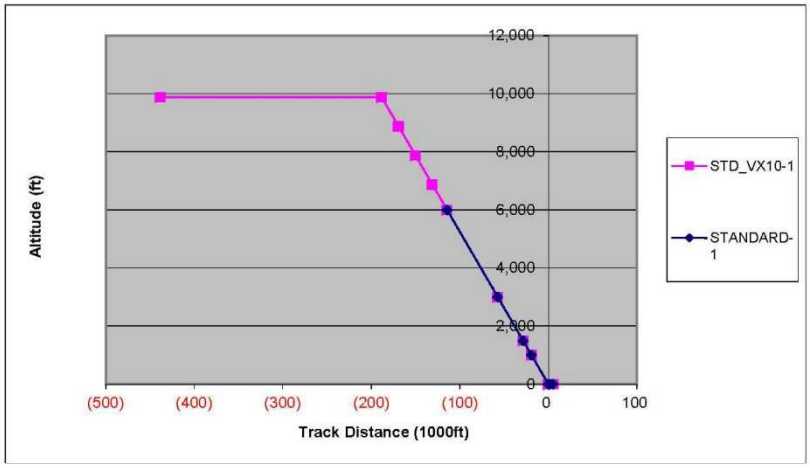

Figure 10 Altitude vs. Distance for 747400 Arrival Standard and Proposed Extended Profile with 10,000 ft. MSL Level Flight Segment

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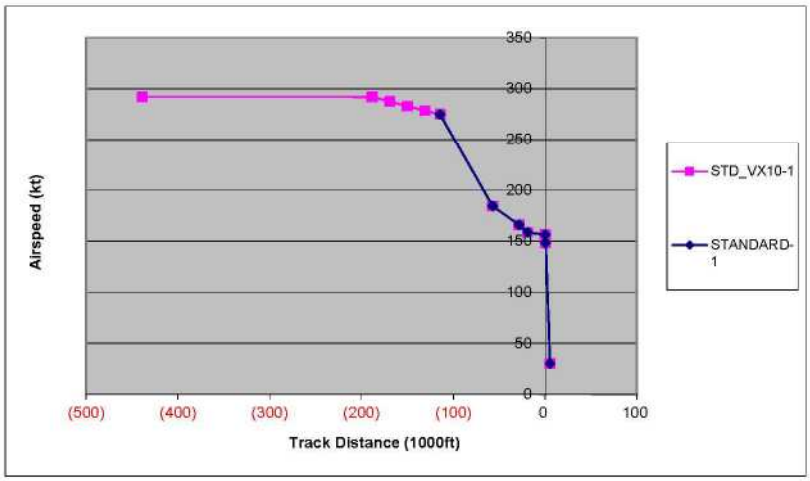

Figure 11 Airspeed vs. Distance for 747400 Arrival Standard and Proposed Extended Profile with 10,000 ft. MSL Level Flight Segment

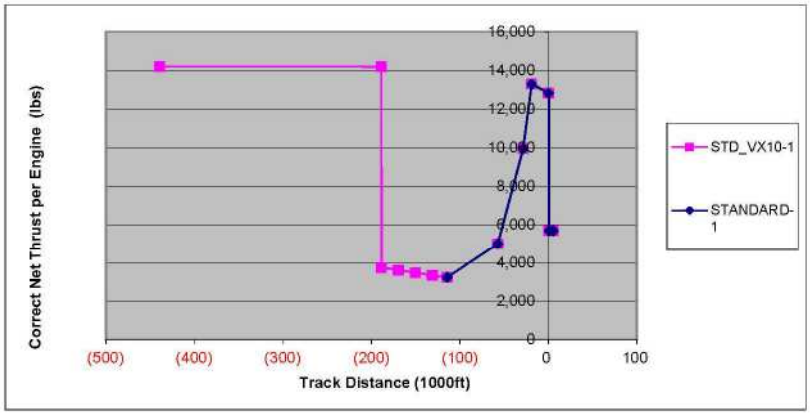

Figure 12 Thrust vs. Distance for 747400 Arrival Standard and Proposed Extended Profile with 10,000 ft. MSL Level Flight Segment

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Table 9 747400 Proposed Extended Profile with 10,000 ft. MSL Level Flight Segment Altitude, Speed and Thrust Data

ACFT ID	OP TYPE	RWY ID	PROF ID1	PROF ID2	PT NUM	DISTANCE	ALTITUDE	SPEED	THR_SET
747400	A	07L	STD_VX10	1	1	-438926.2	9875.0	291.9	14191.63
747400	A	07L	STD_VX10	1	2	-188926.2	9875.0	291.9	14191.63
747400	A	07L	STD_VX10	1	3	-188426.2	9875.0	291.9	3740.91
747400	A	07L	STD_VX10	1	4	-169345.1	8875.0	287.4	3599.10
747400	A	07L	STD_VX10	1	5	-150264.0	7875.0	283.0	3463.64
747400	A	07L	STD_VX10	1	6	-131182.8	6875.0	278.6	3334.20
747400	A	07L	STD_VX10	1	7	-114486.8	6000.0	274.9	3225.65
747400	A	07L	STD_VX10	1	8	-57243.4	3000.0	184.3	4993.01
747400	A	07L	STD_VX10	1	9	-28621.7	1500.0	165.9	9947.79
747400	A	07L	STD_VX10	1	10	-19081.1	1000.0	158.5	13289.88
747400	A	07L	STD_VX10	1	11	0.0	0.0	156.2	12816.38
747400	A	07L	STD_VX10	1	12	533.6	0.0	148.3	5680.00
747400	A	07L	STD_VX10	1	13	5336.0	0.0	30.2	5680.00
Sources: INM 7.0b									

Table 10 747400 Arrival Standard Profile Altitude, Speed and Thrust Data

ACFT ID	OP TYPE	RWY ID	PROF ID1	PROF ID2	PT NUM	DISTANCE	ALTITUDE	SPEED	THR_SET
747400	A	07L	STANDARD	1	1	-114486.8	6000.0	274.9	3225.65
747400	A	07L	STANDARD	1	2	-57243.4	3000.0	184.3	4993.01
747400	A	07L	STANDARD	1	3	-28621.7	1500.0	165.9	9947.79
747400	A	07L	STANDARD	1	4	-19081.1	1000.0	158.5	13289.88
747400	A	07L	STANDARD	1	5	0.0	0.0	156.2	12816.38
747400	A	07L	STANDARD	1	6	533.6	0.0	148.3	5680.00
747400	A	07L	STANDARD	1	7	5336.0	0.0	30.2	5680.00
Sources: INM 7.0b									

Request for INM 7.0b Aircraft Profile Extensions for LAX Part 161 Noise Study and Specific Plan Amendment Study
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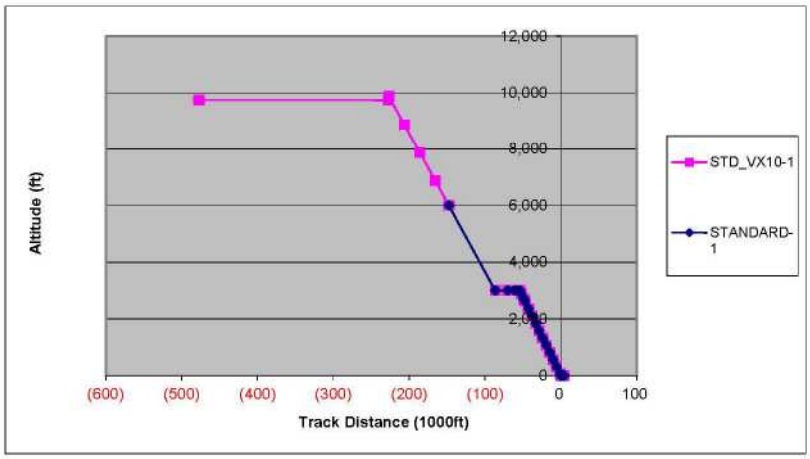

Figure 13 Altitude vs. Distance for 777300 Arrival Standard and Proposed Extended Profile with 10,000 ft. MSL Level Flight Segment

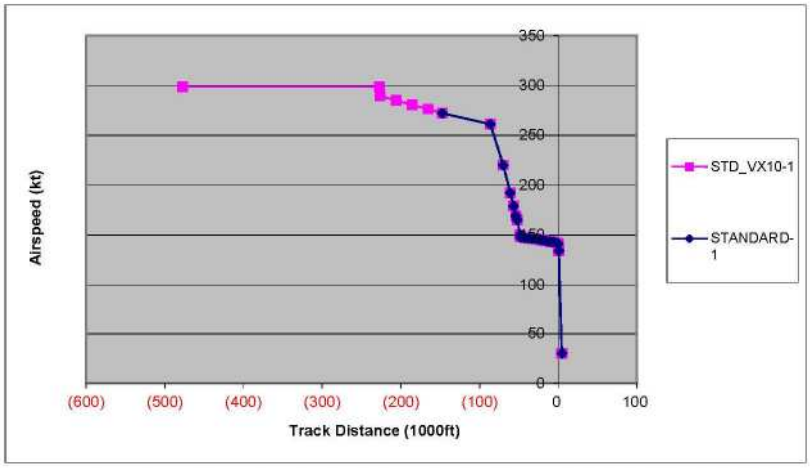

Figure 14 Airspeed vs. Distance for 777300 Arrival Standard and Proposed Extended Profile with 10,000 ft. MSL Level Flight Segment

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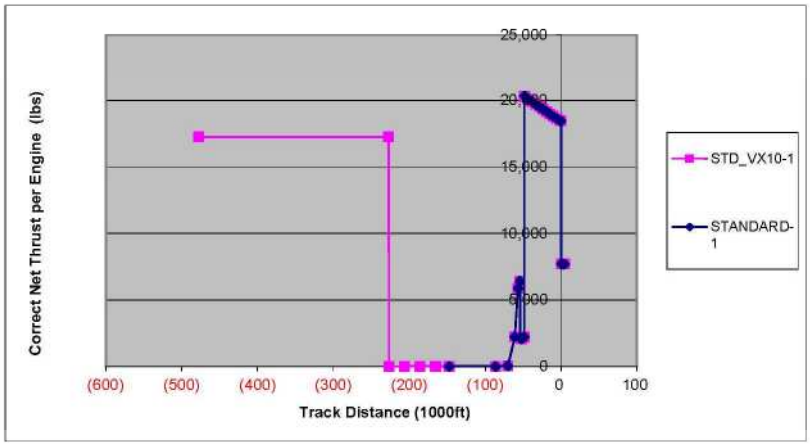

Figure 15 Thrust vs. Distance for 777300 Arrival Standard and Proposed Extended Profile with 10,000 ft. MSL Level Flight Segment

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Table 11 777300 Proposed Extended Profile with 10,000 ft. MSL Level Flight Segment Altitude, Speed and Thrust Data

ACFT ID	OP TYPE	RWY ID	PROF ID1	PROF ID2	PT NUM	DISTANCE	ALTITUDE	SPEED	THR_SET
777300	A	07L	STD_VX10	1	1	-477221.2	9750.0	298.7	17243.90
777300	A	07L	STD_VX10	1	2	-227221.2	9750.0	298.7	17243.90
777300	A	07L	STD_VX10	1	3	-226721.2	9875.0	289.4	1.20
777300	A	07L	STD_VX10	1	4	-206309.5	8875.0	284.9	1.10
777300	A	07L	STD_VX10	1	5	-185897.9	7875.0	280.5	1.10
777300	A	07L	STD_VX10	1	6	-165486.2	6875.0	276.2	1.00
777300	A	07L	STD_VX10	1	7	-147626.0	6000.0	272.0	1.00
777300	A	07L	STD_VX10	1	8	-86391.0	3000.0	261.0	1.00
777300	A	07L	STD_VX10	1	9	-70159.0	3000.0	220.0	42.50
777300	A	07L	STD_VX10	1	10	-61102.0	3000.0	192.0	2231.00
777300	A	07L	STD_VX10	1	11	-56765.0	3000.0	179.0	5883.50
777300	A	07L	STD_VX10	1	12	-54191.0	3000.0	169.0	6413.00
777300	A	07L	STD_VX10	1	13	-54091.0	3000.0	169.0	2151.00
777300	A	07L	STD_VX10	1	14	-52237.0	2892.0	165.0	2077.50
777300	A	07L	STD_VX10	1	15	-48787.0	2702.0	150.0	2203.50
777300	A	07L	STD_VX10	1	16	-48454.0	2683.0	148.0	2224.50
777300	A	07L	STD_VX10	1	17	-48354.0	2683.0	148.0	20314.00
777300	A	07L	STD_VX10	1	18	-47301.0	2620.0	148.0	20266.00
777300	A	07L	STD_VX10	1	19	-42598.0	2359.0	147.0	20073.50
777300	A	07L	STD_VX10	1	20	-37914.0	2099.0	147.0	19883.50
777300	A	07L	STD_VX10	1	21	-33249.0	1841.0	146.0	19696.00
777300	A	07L	STD_VX10	1	22	-28603.0	1583.0	146.0	19512.00
777300	A	07L	STD_VX10	1	23	-23974.0	1326.0	145.0	19330.00
777300	A	07L	STD_VX10	1	24	-19364.0	1071.0	145.0	19151.00
777300	A	07L	STD_VX10	1	25	-14772.0	816.0	144.0	18974.50
777300	A	07L	STD_VX10	1	26	-10198.0	562.0	143.0	18800.00
777300	A	07L	STD_VX10	1	27	-5642.0	309.0	143.0	18629.00
777300	A	07L	STD_VX10	1	28	-1103.0	57.0	142.0	18460.00
777300	A	07L	STD_VX10	1	29	-979.0	50.0	142.0	18460.00
777300	A	07L	STD_VX10	1	30	0.0	0.0	141.0	18455.00
777300	A	07L	STD_VX10	1	31	445.7	0.0	134.0	7700.00
777300	A	07L	STD_VX10	1	32	4456.8	0.0	30.0	7700.00

Sources: INM 7.0b

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Table 12 777300 Arrival Standard Profile Altitude, Speed and Thrust Data

ACFT ID	OP TYPE	RWY ID	PROF ID1	PROF ID2	PT NUM	DISTANCE	ALTITUDE	SPEED	THR_SET
777300	A	07L	STANDARD	1	1	-147626.0	6000.0	272.0	1.00
777300	A	07L	STANDARD	1	2	-86391.0	3000.0	261.0	1.00
777300	A	07L	STANDARD	1	3	-70159.0	3000.0	220.0	42.50
777300	A	07L	STANDARD	1	4	-61102.0	3000.0	192.0	2231.00
777300	A	07L	STANDARD	1	5	-56765.0	3000.0	179.0	5883.50
777300	A	07L	STANDARD	1	6	-54191.0	3000.0	169.0	6413.00
777300	A	07L	STANDARD	1	7	-54091.0	3000.0	169.0	2151.00
777300	A	07L	STANDARD	1	8	-52237.0	2892.0	165.0	2077.50
777300	A	07L	STANDARD	1	9	-48787.0	2702.0	150.0	2203.50
777300	A	07L	STANDARD	1	10	-48454.0	2683.0	148.0	2224.50
777300	A	07L	STANDARD	1	11	-48354.0	2683.0	148.0	20314.00
777300	A	07L	STANDARD	1	12	-47301.0	2620.0	148.0	20266.00
777300	A	07L	STANDARD	1	13	-42598.0	2359.0	147.0	20073.50
777300	A	07L	STANDARD	1	14	-37914.0	2099.0	147.0	19883.50
777300	A	07L	STANDARD	1	15	-33249.0	1841.0	146.0	19696.00
777300	A	07L	STANDARD	1	16	-28603.0	1583.0	146.0	19512.00
777300	A	07L	STANDARD	1	17	-23974.0	1326.0	145.0	19330.00
777300	A	07L	STANDARD	1	18	-19364.0	1071.0	145.0	19151.00
777300	A	07L	STANDARD	1	19	-14772.0	816.0	144.0	18974.50
777300	A	07L	STANDARD	1	20	-10198.0	562.0	143.0	18800.00
777300	A	07L	STANDARD	1	21	-5642.0	309.0	143.0	18629.00
777300	A	07L	STANDARD	1	22	-1103.0	57.0	142.0	18460.00
777300	A	07L	STANDARD	1	23	-979.0	50.0	142.0	18460.00
777300	A	07L	STANDARD	1	24	0.0	0.0	141.0	18455.00
777300	A	07L	STANDARD	1	25	445.7	0.0	134.0	7700.00
777300	A	07L	STANDARD	1	26	4456.8	0.0	30.0	7700.00
Sources: INM 7.0b									

FAA Review and Approval of Aircraft Substitutions

U.S. Department of Transportation
Federal Aviation Administration

Office of Environment and Energy

800 Independence Ave., S.W.
Washington, D.C. 20591

Date: December 9, 2011

Victor Globa
Environmental Protection Specialist
Federal Aviation Administration
15000 Aviation Boulevard
Lawndale, CA 90261
Telephone: 310-725-3637
Fax: 310-725-6849

Dear Mr. Globa,

The Office of Environment and Energy (AEE) received the letter addressed to you from Scott Tatro of Los Angeles World Airports (LAWA) dated September 7, 2011 requesting approval of modeling 29 aircraft types (51 aircraft in total as shown in the Appendix A in the email attachment) that do not have Integrated Noise Model (INM) standard substitutions. This request is to evaluate noise in support of a proposed 14 CFR Part 161 Noise and Access Restriction Study at Los Angeles International Airport (LAX).

Of the proposed 51 aircraft for use in the noise analysis, AEE concurs with 42 of them. The list of those aircraft is displayed in Table 1. AEE does not approve the use of the 9 other proposed aircraft as substitutions, but recommends alternative aircraft. The list of those aircraft is displayed in Table 2 of this letter. The AEE's review is based on comparison of several different candidate aircraft for each matching, in terms of design configuration, aircraft performance, and aircraft noise certification levels. In addition, AEE examined noise contour areas of certain aircraft to support the review.

Please understand that this approval is limited to this particular project for LAX. Any additional projects or non-standard INM input at LAX will require separate approval.

Also, please note that the request for extending INM profiles is still under evaluation and will be addressed under separate cover.

Sincerely,

James Skalecky, Acting Manager
AEE/Noise Division
cc: Jim Byers, APP-400

Table 1. List of the AEE approved aircraft for use as substitution in the noise analysis. For example, AEE concurs with the proposed use of the INM aircraft Boeing737-800 in modeling the Boeing 737-900 aircraft.

Type	AC code	AC name	AC sub proposed	AEE review
Jet	B77L, B77W	777 -200LR and -300ER (Freighters)	777-300 w. addition of MTOW profile	Concur
Jet	A320neo	Airbus A320neo	A320-232	Concur
Jet	A350 A350-900	Airbus A350	A330-343	Concur
Jet	B739	B737-900	737800	Concur
Jet	B748	B747-8 Freighter 747-8 Intercontinental	A340-642	Concur
Jet	BOMBC	Bombardier C Series	A319-131	Concur
Jet	E190 E90 EMJ	Embraer 190	A319-131	Concur
Jet	C56X	Citation Excel	CNA55B	Concur
Jet	CL30	BD-100 Challenger 300	CL600	Concur
Jet	DA7X	Dassault Falcon 7X	F10062	Concur
Jet	E50P	Embraer EMP-500 Phenom 100	CNA510	Concur
Jet	G150	Gulfstream 150	IA1125	Concur
Jet	GL5T GLEX	BD-700	GV	Concur
Jet	H25C	Raytheon Hawker Bae HS125-100	Lear35	Concur
Jet	HA4T	Hawker 4000	CL600	Concur
Jet	LJ40	Learjet 40	Lear35	Concur
Jet	PRIM/PRM1	Hawker Premier1, 390	CNA500	Concur
Turboprop	PC12 TMB7 TBM8	Pilatus PC-12, Eagle Socata TBM-700 Socata TBM-800	CNA208	Concur
Piston Prop	AA1	AA-1 Series (Grumman American)	GASEPF	Concur
Piston Prop	DA40	DA-40 Katana, Diamond Star	GASEPV	Concur
Piston Prop	PA32	Piper Saratoga	GASEPV	Concur
Kit	SR20/22	Cirrus SR-20/22	GASEPV	Concur
Propeller	B36T	B36T Turboprop Bonanza 36 CNA206 BNA NEM	CNA206	Concur
Propeller	BE36 36	Bonanza	CNA206	Concur
Propeller	C10T	Cessna P210 (turbine)	CNA208	Concur
Propeller	COL4	Lancair 400, Columbia 300/350/400	GASEPV	Concur
Propeller	P28A	Piper Cherokee Archer	GASEPF	Concur
Propeller	DA42	Diamond Twinstar	BEC58P	Concur

3

Table 2. List of the AEE recommended aircraft for substitution instead of the ones proposed. For example, AEE recommends the use of the INM aircraft CNA208 in modeling Piper Malibu Meridian.

Type	AC code	AC name	AC sub proposed	AEE recommendation
Jet	B788/787-8 B789/787-9	B787-8, and -9	A310-304	A330-343
Jet	C680	Citation Sovereign	Lear35	CL600
Jet	E55P	Embraer EMP505 Phenom 300	IA1125	CNA55B
Jet	FAL50 FAL900	Falcon 50/900	Lear35+1.8dB	F10062
Turboprop	P180	Piaggio P-180 Avanti	DHC6	SD330
Turboprop	P46T	Piper Malibu Meridian	SD330	CNA208
Propeller	B350	Beechcraft King Air 350	DHC6	DO228

FAA Review of Aircraft Extended Profiles and Response, 2/29/2012

U.S. Department of Transportation
Federal Aviation Administration

Office of Environment and Energy

800 Independence Ave., S.W.
Washington, D.C. 20591

Date: February 29, 2012

Dave Cushing
Manager, Los Angeles Airports District Office
Federal Aviation Administration
15000 Aviation Boulevard
Lawndale, CA 90261

Dear Mr. Cushing,

The Office of Environment and Energy (AEE) received the letter addressed to Victor Globa from Scott Tatro of Los Angeles World Airports (LAWA) dated September 7, 2011 requesting approval of modeling extended aircraft flight profiles that go beyond the standard Integrated Noise Model (INM) profiles. This request is to evaluate noise in support of the 14 CFR Part 161 Noise and Access Restriction Study and the Specific Plan Amendment Study (SPAS) at Los Angeles International Airport (LAX).

AEE has reviewed the request and has several concerns regarding the extent and validity of the extended profiles. The request documented in Appendix B of the above referenced letter is to extend INM aircraft departure profiles to an altitude of 24,000 feet. Historically, the FAA has limited the noise study area for air traffic actions above 3000 feet to 18,000 feet Above Ground Level (AGL). Extending departure profiles beyond 18,000 feet AGL would require extrapolation of INM aircraft performance data well beyond the manufacturer-verified aircraft operational envelope and is not recommended.

In addition, the requestor indicated in Appendix B of the request that extended profiles would be developed only for aircraft with nighttime operations; however Appendix B does not include a complete list of aircraft that would have extended profiles in the analysis. There are references to small General Aviation (GA) aircraft, some of which have service ceilings well below the requested profile extension of 24,000 feet. It is not clear in the request whether the departure profiles for these aircraft would be extended to 24,000 feet. When extending aircraft profiles care must be taken to ensure that the user defined profile does not exceed the performance capabilities of the aircraft being modeled. Profile extensions should be validated by the operator or manufacturer of the aircraft to ensure the profile is reasonable. (See INM 7.0 User Guide Appendix B) If operator data is not available, radar data can be used as a guide to modify flight profiles.

The request also includes extension of approach profiles to 10,000 feet altitude with extended level flight segments. Though the requests states an analysis of radar data was completed, no justification on why the 10,000 feet altitude with the extended level flight segments were chosen for the approach profiles was included with the request. In addition, the level flight approach segments require an aircraft flap setting in order for INM to calculate thrust, and then noise level. It is not clear in the request that the proper aircraft flap settings were chosen for level flight on approach. These flap settings must be verified since flap setting is significant in the calculation of approach thrust, and subsequently noise.

Therefore, AEE does not approve the method used to extend the INM aircraft profiles described in Appendix B of the above referenced request. The aircraft departure profile extensions should not exceed 18,000 feet AGL. In addition, the radar analysis of the approach profile extensions mentioned in the request should be provided for review. Verification of aircraft performance data on approach, including flap setting, should also be provided.

Sincerely,

Rebecca Cointin, Acting Manager
AEE/Noise Division
cc: Jim Byers, APP-400
Ralph Thompson, APP-400
Victor Globa, AWP-LAX-ADO

LAWA Response Letter to FAA Letter, 3/28/2012

Los Angeles World Airports

March 28, 2012

Mr. Victor Globa
Federal Aviation Administration (FAA)
Western Pacific Region Airports Division, LAX-600.3
P.O. Box 92007
Los Angeles, CA 90009

Re: FAA Response Letter to LAWA Request for Approval of Aircraft Profile Extensions for the LAX Part 161 Noise and Access Restriction Study

Dear Mr. Globa:

This letter is in response to the attached FAA's letter of February 29, 2012, disapproving our proposed method of extending INM aircraft climb profiles for use in the sleep disturbance analysis of our on-going Part 161 Study. Many months have passed since we submitted the request for extended profiles to be used by LAWA for the Part 161 study, and we are now working toward conclusion of this study within the next few weeks. Therefore, Los Angeles World Airports plans to utilize INM standard profiles for the noise analysis reported in our Part 161 submittal. As a result, we expect the sleep disturbance results in the Part 161 Study to provide a conservative estimate of the potential awakenings. Thank you for your consideration.

Sincerely,

Scott Tatro
Airport Environmental Manager I

Attachment: FAA letter of February 29, 2012

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APPENDIX I DESCRIPTION OF NOISE EXPOSURE AND LAND USE COMPATIBILITY

Based on the relationships between noise and the collective response of people to their environment, the cumulative exposure metrics "Day-Night Average Sound Level" (DNL) and "Community Noise Equivalent Level" (CNEL) have become accepted standards for land use compatibility.[1] In their application to airport noise in particular, DNL and CNEL projections have two principal functions:

- To provide a quantitative basis for assessing land use compatibility with aircraft noise exposure.
- To provide a means for determining the significance of changes in noise exposure that might result from changes in airport layout, operations, or activity levels.

Both these functions require application of objective criteria. Government agencies dealing with environmental noise have devoted significant attention to this issue, and have developed noise / land use compatibility guidelines to help federal, state, and local officials with this evaluation process.

The degree of annoyance people experience from aircraft noise varies depending on their activities and physical location at any given time. For example, people are usually less disturbed by aircraft noise when they are shopping, working, or driving than when they are at home. Similarly, hotel and motel guests are generally less sensitive to noise exposure than are permanent residents of the same geographic area, with identical or similar noise exposure. The concept of "land use compatibility" has arisen from this type of systematic variation in reaction to noise.

While the federal government, through the FAA, has preempted control of aircraft noise at the source (i.e., certification of aircraft for operation in the U.S.), the federal government defers to local land use jurisdictions to determine formal compatibility standards and any associated regulations. Therefore, FAA presents compatibility *guidelines* in Part 150. Section 5.2.1 presents those guidelines. Section 5.2.2 summarizes formal California standards, and Section 5.2.3 presents LAWA-adopted standards.

I.1 FAA Guidelines

Part 161 includes the following guidance regarding "noise description methods:"[2]

> "The sound level at an airport and surrounding areas, and the exposure of individuals to noise resulting from operations at an airport, must be established in accordance with the specifications and methods prescribed under Appendix A of 14 C.F.R. part 150."

Part 150 Appendix A states "[t]he yearly day-night average sound level (YDNL) must be employed for the analysis and characterization of multiple aircraft noise events and for determining the cumulative exposure of individuals to noise around airports" [3] and sets forth FAA-recommended guidelines for noise land use compatibility, based on DNL. Table I-1 reproduces these guidelines.

The FAA's Part 150 guidelines represent a compilation of the results of scientific research into noise-related activity interference and attitudinal response. The guidelines indicate that all uses

[1] Appendix G of this report introduces DNL, CNEL, and other noise terminology used in this report.

[2] Ibid., § 161.9(a), "Designation of noise description methods."

[3] Ibid., § A150.3 "Noise descriptors," paragraph (b) "Airport Noise Exposure."

normally are compatible with aircraft noise at exposure levels below 65 dB DNL. This limit is supported in a formal way by standards adopted by the U. S. Department of Housing and Urban Development (HUD). The HUD standards set forth in 24 C.F.R. Part 51, "Environmental Criteria and Standards", §103, define areas with exterior DNL exposure not exceeding 65 dB as acceptable. Areas exposed to noise levels between 65 dB and 75 dB DNL are "normally unacceptable," and require special abatement measures and review. Those at 75 dB and above are "unacceptable" except under very limited circumstances. HUD assistance, subsidy, or insurance "for the construction of new noise sensitive uses is prohibited generally for projects with unacceptable noise exposures and is discouraged for projects with normally unacceptable noise exposure".[4]

[4] Title 24 C.F.R. Part 51, "Environmental Criteria and Standards", § 51.101, (a)(3). 44 FR 40861, July 12, 1979, as amended at 50 FR 9268, Mar. 7, 1985, 61 FR 13333, Mar. 26, 1996.

Table I-1 FAA Noise / Land-Use Compatibility Guidelines
Source: 14 C.F.R. Part 150, Airport Noise Compatibility Planning, Appendix A, Table 1.

Land Use	Yearly Day-Night Average Sound Level, Ldn, in Decibels (Key and notes on following page)					
	<65	**65–70**	**70–75**	**75–80**	**80–85**	**>85**
Residential Use						
Residential other than mobile homes and transient lodgings	Y	N(1)	N(1)	N	N	N
Mobile home park	Y	N	N	N	N	N
Transient lodgings	Y	N(1)	N(1)	N(1)	N	N
Public Use						
Schools	Y	N(1)	N(1)	N	N	N
Hospitals and nursing homes	Y	25	30	N	N	N
Churches, auditoriums, and concert halls	Y	25	30	N	N	N
Governmental services	Y	Y	25	30	N	N
Transportation	Y	Y	Y(2)	Y(3)	Y(4)	Y(4)
Parking	Y	Y	Y(2)	Y(3)	Y(4)	N
Commercial Use						
Offices, business and professional	Y	Y	25	30	N	N
Wholesale and retail- building materials, hardware, and farm equipment	Y	Y	Y(2)	Y(3)	Y(4)	N
Retail trade–general	Y	Y	25	30	N	N
Utilities	Y	Y	Y(2)	Y(3)	Y(4)	N
Communication	Y	Y	25	30	N	N
Manufacturing and Production						
Manufacturing general	Y	Y	Y(2)	Y(3)	Y(4)	N
Photographic and optical	Y	Y	25	30	N	N
Agriculture (except livestock) and forestry	Y	Y(6)	Y(7)	Y(8)	Y(8)	Y(8)
Livestock farming and breeding	Y	Y(6)	Y(7)	N	N	N
Mining and fishing, resource production and extraction	Y	Y	Y	Y	Y	Y
Recreational						
Outdoor sports arenas and spectator sports	Y	Y(5)	Y(5)	N	N	N
Outdoor music shells, amphitheaters	Y	N	N	N	N	N
Nature exhibits and zoos	Y	Y	N	N	N	N
Amusements, parks, resorts and camps	Y	Y	Y	Y	Y	Y
Golf courses, riding stables, water recreation	Y	Y	25	30	N	N

Key to Table I-1	
Y(Yes)	Land use and related structures compatible without restrictions.
N(No)	Land use and related structures are not compatible and should be prohibited.
NLR	Noise Level Reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into the design and construction of the structure.
25, 30, or 35	Land use and related structures generally compatible; measures to achieve NLR of 25, 30, or 35 dB must be incorporated into design and construction of structure.

Notes for Table I-1

The designations contained in this table do not constitute a Federal determination that any use of land covered by the program is acceptable or unacceptable under Federal, State, or local law. The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties and specific noise contours rests with the local authorities. FAA determinations under part 150 are not intended to substitute federally determined land uses for those determined to be appropriate by local authorities in response to locally determined needs and values in achieving noise compatible land uses.

(1) Where the community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor Noise Level Reduction (NLR) of at least 25 dB and 30 dB should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide a NLR of 20 dB, thus, the reduction requirements are often stated as 5, 10, or 15 dB over standard construction and normally assume mechanical ventilation and closed windows year round. However, the use of NLR criteria will not eliminate outdoor noise problems.

(2) Measures to achieve NLR 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.

(3) Measures to achieve NLR of 30 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.

(4) Measures to achieve NLR 35 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.

(5) Land use compatible provided special sound reinforcement systems are installed.

(6) Residential buildings require an NLR of 25.

(7) Residential buildings require an NLR of 30.

(8) Residential buildings not permitted.

I.2 California Department of Transportation Division of Aeronautics Noise Standards

The State of California has established airport noise standards and land use planning guidelines that fall under the jurisdiction of the California Department of Transportation Division of Aeronautics (Caltrans) and the Los Angeles County Airport Land Use Commission.

I.2.1 Caltrans Division of Aeronautics Noise Standards

For airport noise studies, the California Department of Transportation Division of Aeronautics (Caltrans) has adopted noise standards that require airports to describe cumulative exposure in terms of CNEL. Those standards state, in part:[5]

> The following rules and regulations are promulgated in accordance with Article 3, Chapter 4, Part 1, Division 9, Public Utilities Code (Regulation of Airports) to provide noise standards governing the operation of aircraft and aircraft engines for all airports operating under a valid permit issued by the Department of Transportation. These standards are based upon two separate legal grounds: (1) the power of airport proprietors to impose noise ceilings and other limitations on the use of the airport, and (2) the power of the state to act to an extent not prohibited by federal law. The regulations are designed to cause the airport proprietor, aircraft operator, local governments, pilots, and the department to work cooperatively to diminish noise problems. The regulations accomplish these ends by controlling and reducing the noise impact area in communities in the vicinity of airports. [6]
>
> The level of noise acceptable to a reasonable person residing in the vicinity of an airport is established as a CNEL value of 65 dB for purposes of these regulations. This criterion level has been chosen for reasonable persons residing in urban residential areas where houses are of typical California construction and may have windows partially open. It has been selected with reference to speech, sleep, and community reaction.[7]

The Division of Aeronautics noise standards further define land uses that are incompatible with aircraft noise as follow:[8]

- Residences, including but not limited to, detached single-family dwellings, multi-family dwellings, high-rise apartments, condominiums and mobile homes, unless:
  - an avigation easement for aircraft noise has been acquired by the airport proprietor;
  - the dwelling unit was in existence at the same location prior to January 1, 1989, and has adequate acoustic insulation to ensure an interior CNEL due to aircraft noise of 45 dB or less in all habitable rooms. However, acoustic treatment alone does not convert residences having an exterior CNEL of 75 dB or greater due to aircraft noise to a compatible land use if the residence has an exterior normally occupiable private habitable area such as a backyard, patio or balcony;
  - the residence is a high rise apartment or condominium having an interior CNEL of 45 dB or less in all habitable rooms due to aircraft noise, and an air circulation or air conditioning system, as appropriate;
  - the airport proprietor has made a genuine effort as determined by the department in accordance with adopted land use compatibility plans and appropriate laws and

[5] California Code of Regulations (CCR). 1990. Title 21, Subchapter 6, Noise Standards. Register 90. No. 10, 3/10/90. California Division of Aeronautics, Department of Transportation. Sacramento, CA.

[6] Ibid., §5000, "Preamble," p. 219.

[7] Ibid., §5006, "Findings," p. 224.

[8] Ibid., §5014, "Incompatible Land Uses within the Noise Impact Boundary, p. 225–226.

regulations to acoustically treat residences exposed to an exterior CNEL less than 80 dB (75 dB if the residence has an exterior normally occupiable private habitable area such as a backyard, patio, or balcony) or acquire avigation easements, or both, for the residences involved, but the property owners have refused to take part in the program; or

- the residence is owned by the airport proprietor.

- Public and private schools of standard construction for which an avigation easement for noise has not been acquired by the airport proprietor, or that do not have adequate acoustic performance to ensure an interior CNEL of 45 dB or less in all classrooms due to aircraft noise;
- Hospitals and convalescent homes for which an avigation easement for noise has not been acquired by the airport proprietor, or that do not have adequate acoustic performance to provide an interior CNEL of 45 dB or less due to aircraft noise in all rooms used for patient care; and
- Churches, synagogues, temples, and other places of worship for which an avigation easement for noise has not been acquired by the airport proprietor, or that do not have adequate acoustic performance to ensure an interior CNEL of 45 dB or less due to aircraft noise.

The regulation sets the following "Airport Noise Standard," which establishes a requirement related to addressing airport noise impacts that is far more specific and stringent than faced by airport proprietors in any other state:[9]

- The standard for the acceptable level of aircraft noise for persons living in the vicinity of airports is hereby established to be a community noise equivalent level of 65 decibels. This standard forms the basis for the following limitation.

- No airport proprietor of a noise problem airport shall operate an airport with a noise impact area based on the standard of 65 dB CNEL unless the operator has applied for or received a variance as prescribed in Article 5 of this subchapter.

The Division of Aeronautics noise standards include a provision stating that "[a]ny county may, at any time, in accordance with the procedure herein, declare any airport within its boundaries to have a noise problem, by adopting a resolution to this effect and forwarding it to this department.[10] LAX is one of ten airports that county governments have designated as "noise problem airports."[11] This finding is directly relevant to a specific Part 161 requirement for a restriction on Stage 3 aircraft: "Evidence that a current or projected noise problem exists and that the proposed action could relieve

[9] Ibid., §5012, "Airport Noise Standard," p. 225.

[10] Ibid., §5020, "Designating Noise Problem Airport." § 5001(n) provides the following related definition: "Noise Problem Airport: 'Noise problem airport' is an airport that the county in which the airport is located has declared to have a noise problem under section 5020."

[11] The other nine airports are: Bob Hope Airport, John Wayne Airport-Orange County, Long Beach-Daugherty Field-Airport, Metropolitan Oakland International Airport, Norman Y. Mineta-San Jose International Airport, Ontario International Airport, San Diego International Airport, San Francisco International Airport, and Van Nuys Airport.

the problem."[12] From a very formal standpoint, by designating LAX a problem airport, Los Angeles County has officially declared that a noise problem exists at LAX.

I.2.2 California Airport Land Use Commission Regulations

With limited exceptions, California state statutes require each county in the state to establish an airport land use commission (ALUC). The statutes specify that the Regional Planning Commission will fill the ALUC role in Los Angeles County.[13] In practice, the commission refers to itself as the ALUC when addressing airport land use compatibility matters. The commission has published a document that defines review procedures and other implementation policies.[14] That document states that:

> [T]he fundamental purpose of ALUCs to promote land use compatibility around airports has remained unchanged. As expressed in the present statutes, this purpose is:
>
> "…to protect public health, safety, and welfare by ensuring the orderly expansion of airports and the adoption of land use measures that minimize the public's exposure to excessive noise and safety hazards within areas around public airports to the extent that these areas are not already devoted to incompatible uses."

The statutes give ALUCs two principal powers by which to accomplish this objective. First, ALUCs must prepare and adopt an airport land use compatibility plan [ALUCP]. Secondly, they must review the plans, regulations, and other actions of local agencies and airport operators for consistency with that plan.

The procedures document calls out two limitations on ALUCs' powers: "Specifically, ALUCs have no authority over existing land uses (Section 21674(a)) or over the operation of airports (Section 21674(e))."[15]

The commission last revised the Los Angeles County ALUCP on December 1, 2004.[16] The ALUCP includes the following "policies related to noise:"

- N-1 Use the Community Noise Equivalent Level (CNEL) method for measuring noise impacts near airports in determining suitability for various types of land uses.

[12] Op cit., §161.305(e)(2)(i)(A).

[13] Ibid. § 21670.2.

[14] "Los Angeles County Airport Land Use Commission Review Procedures," prepared by the Los Angeles County Department of Regional Planning, December 2004, available on line at http://planning.lacounty.gov/assets/upl/project/aluc_review-procedures.pdf

[15] Ibid.

[16] "Los Angeles County Airport Land Use Commission Comprehensive Land Use Plan," prepared by the Department of Regional Planning, adopted December 19, 1991, revised December 1, 2004, available on line at http://planning.lacounty.gov/assets/upl/data/pd_alup.pdf

- N-2 Require sound insulation to insure a maximum interior 45 db [sic] CNEL in new residential, educational, and health-related uses in areas subject to exterior noise levels of 65 CNEL or greater.

- N-3 Utilize the Table Listing Land Use Compatibility for Airport Noise Environments in evaluating projects within the planning boundaries.

- N-4 Encourage local agencies to adopt procedures to ensure that prospective property owners in aircraft noise exposure areas above a current or anticipated 60 db [sic] CNEL are informed of those noise levels and of any land use restrictions associated with high noise exposure

Table I-2 reproduces the land use compatibility table to which policy N-3 refers.

Table I-2 Los Angeles County Land Use Compatibility for Airport Noise Environments
Source: Los Angeles County Airport Land Use Compatibility Plan, prepared by the Los Angeles County Department of Regional Planning, Revised December 1, 2004

LAND USE COMPATIBILITY TABLE						
	Satisfactory Caution. Review Noise Insulation Needs Avoid Land Use Unless Related to Airport Services					
Land Use Category	Community Noise Exposure					
	55	60	65	70	75	
Residential						
Educational Facilities						
Commercial						
Industrial						
Agriculture						
Recreation						

Note: Consider FAR Part 150 for commercial and recreational uses above the 75 CNEL.

I.3 Los Angeles Land Use Compatibility Standards

In the 1984 Part 150 submission for LAX to the FAA, the City of Los Angeles officially adopted the FAA Part 150 guidelines as the basis for determining the compatibility of surrounding land uses with noise exposure associated with operations at the airport, with the exception that annual noise

exposure was presented in terms of CNEL, rather than DNL, for consistency with state statutes setting airport noise standards and land use planning guidelines, as discussed in Section 5.2.2.1. Since this is the City's most formal statement of noise/land use compatibility for federal purposes, the FAA Part 150 guidelines for compatibility planning will also apply to this Part 161 effort.

Based on the clearly defined and consistently applied statewide requirement to use CNEL, the FAA considers CNEL to be the functional equivalent of DNL, for Part 150 and other federal environmental studies conducted in California, and accepts application of Part 150 land use compatibility guidelines to CNEL values, without adjustment for the normally minor differences between CNEL and DNL.

Table I-1, previously shown, presents the LAWA-adopted land use compatibility standards, in terms of CNEL, that were used to determine land use compatibility in this Part 161 Study.

These standards are consistent with the Caltrans airport noise standards and the Los Angeles ALUCP land use compatibility policies.

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APPENDIX J AIRCRAFT OPERATIONS FORECAST MEMORANDUM AND FAA APPROVAL

Los Angeles
World Airports

August 2, 2012

Mr. Victor Globa
Environmental Protection Specialist
Federal Aviation Administration
Los Angeles Airports District Office
P.O. Box 92007
Los Angeles, CA 9009-2007

Subject: **Review and Approval of Los Angeles International Airport Part 161 Forecasts**

Dear Mr. Globa:

Los Angeles World Airports (LAWA) requests the Federal Aviation Administration (FAA) review and approval of 2013 and 2018 operations forecasts for the Los Angeles International Airport (LAX) Part 161. The attached technical memorandum describes the forecast methodology, and results in detail.

As the following table shows, the forecasts are consistent with the FAA's most recent (December 2011) Terminal Area Forecast (TAF) for LAX.

Year	P161 Forecast	December 2011 TAF	% Difference
2013	593,827	602,474	-1.4%
2018	649,476	679,332	-4.4%

If you have any comments or questions related to this request, please feel free to contact me at (424) 646-6499. Thank you for your assistance.

Sincerely,

Scott Tatro
Airport Environmental Manager I

ST:eb

cc: Michael Feldman
Eugene Reindel – HMMH

Z:/MEMOSANDLETTERS

1 World Way Los Angeles California 90045-5803 Mail P.O. Box 92216 Los Angeles California 90009-2216 Telephone 310 646 5252 Internet www.lawa.aero

SH&E International Air Transport Consultancy

FORECASTS OF AIRCRAFT OPERATIONS AT LAX - 2013 AND 2018

PART 161 DRAFT WORKING PAPER FOR DISCUSSION PURPOSES ONLY

Prepared by:
SH&E, Inc.
An ICFI Company

August 1, 2012

1.0 Introduction

Los Angeles World Airports (LAWA) is conducting a Part 161 Study to determine the potential impacts of a proposed restriction on eastbound aircraft departures at Los Angeles International Airport (LAX) between midnight and 6:30 AM while the airport is in Over-Ocean or Westerly Operations. Currently, pilots can request to take off to the east during this time period. They make these requests most often to avoid taking off with a tailwind when a wind under 10 knots is blowing from the east.

To help measure the potential impacts of the proposed restriction, three forecasts of aircraft operations have been prepared: a 2013 Base Year forecast, a 2018 forecast of operations under current operating procedures, and a 2018 forecast reflecting the potential change in operations as a result of the proposed restriction.

Information analyzed during the preparation of these forecasts includes LAX airport records, USDOT T100 data, OAG passenger and all cargo schedules, FAA Tower Counts, FAA ASDI information (via FlightAware.com), FAA ETMSC data, ACAS airline fleet data, and industry forecasts prepared by Airbus, Boeing and the FAA.

At the time the Part 161 forecasts were prepared, it was not clear whether American Airlines will continue to operate independently after emerging from bankruptcy or merge with another airline. The future of American Airlines is likely to have a substantial impact on total operations at LAX but will have little or no impact on non-conforming eastbound night departures, the subject of this study.

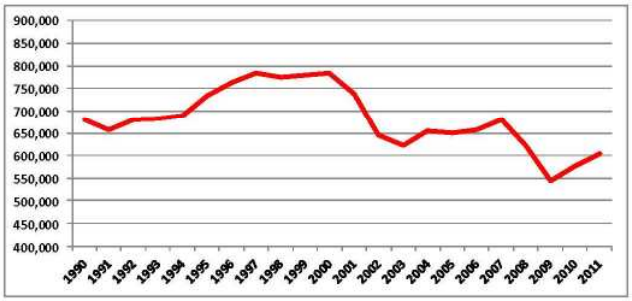
These forecasts reflect the view that American will continue to operate independently and they consequently do not attempt to reflect the extensive system changes that a merger could bring. The forecasts reflect the projected retirement of American MD-80 aircraft by 2018 which was expected before the bankruptcy filing, but do not reflect the potential end of operations in small regional jets (50 or fewer seats) by American Eagle which bankruptcy has made more likely.

2.0 2013 Base Year Forecast

Exhibit 1 shows annual aircraft operations at LAX from 1990 to 2011. After decreasing from 1990 to 1991, operations averaged 3% growth to 1997 and remained steady at an average rate of 780,000 operations a year from 1997 to 2000. The 9-11 terrorist attacks and 2001 economic recession caused operations to fall to 623,000 per year by 2003. This was followed by a period of moderate growth through 2007.

The economic downturn that began in 2008 caused operations to drop very sharply falling to 545,000 in 2009. Since then LAX operations have begun to recover despite continued widespread weakness in the U.S. and global economy, with 5.3% average annual growth from 2009 to 2011.

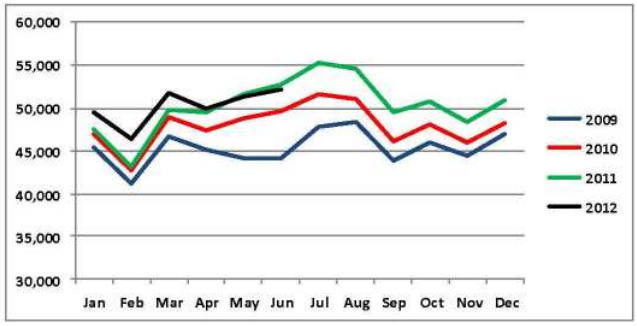
Exhibit 1: LAX Annual Aircraft Operations



Source: FAA ATADS Airport Operations Report

Exhibit 2 provides a more detailed view of the current recovery in aircraft operations at LAX. The pattern of monthly operations from 2009 through June 2012 shows that 2010 exceeded 2009 throughout the year, and except for the first quarter 2011 consistently showed growth over 2010. Growth continued during the first quarter of 2012, but operations in the second quarter of 2012 do not show any year over year growth. While LAX operations have begun to recover from the 2008-2009 downturn, weak economic growth is limiting the recovery at LAX.

Exhibit 2: LAX Monthly Aircraft Operations



Source: FAA ATADS Airport Operations Report

The 2013 Base Year forecast calls for LAX operations to generally remain at current levels with approximately 594,000 annual operations. This reflects the view that any further substantial recovery in aviation will depend largely on achieving stronger economic growth in the U.S. and in other leading economies, finding solutions to the Eurozone crisis, and other positive economic developments.

Exhibit 3 summarizes the 2013 Base Year forecast scenario.

Exhibit 3: LAX 2013 Base Year Forecast

Market Segment	2013 Operations	Share
Domestic Passenger	458,190	77.2%
International Passenger	89,478	15.1%
All Cargo	24,086	4.1%
General Aviation	22,073	3.7%
Total	593,827	100.0%

Source: SH&E analysis

Domestic passenger operations account for over three fourths of total aircraft operations, with international passenger operations adding 15.1%. All cargo and general aviation flights account for 4.1% and 3.7% of LAX operations, respectively.

Exhibit 4 shows the types of aircraft expected to perform 2013 domestic passenger operations.

Exhibit 4: LAX 2013 Base Year Forecast Domestic Passenger Operations

Aircraft Type	2013 Operations	Share
737 Next Gen	113,040	24.7%
Regional Jet	106,356	23.2%
A319/320/321	70,484	15.4%
757	53,602	11.7%
Brasilia	37,528	8.2%
737 Classic	35,360	7.7%
767	24,716	5.4%
MD80	5,110	1.1%
Dash 8	5,006	1.1%
Other	6,988	1.5%
Total	458,190	100.0%

Source: SH&E analysis

Boeing 737 Next Gen aircraft, regional jets, and Airbus A320 family aircraft account for over 60% of all domestic passenger aircraft operations at LAX. MD-80 aircraft are expected to account for only a small share of operations in 2013, and these aircraft are expected to be retired by 2018.

Exhibit 5 shows the aircraft expected to be used for international passenger operations in 2013.

Exhibit 5: LAX 2013 Base Year Forecast International Passenger Operations

Aircraft Type	2013 Operations	Share
777	23,986	26.8%
737 Next Gen	18,040	20.2%
A319/320/321	14,080	15.7%
747	10,432	11.7%
A330/340	8,236	9.2%
Regional Jet	6,362	7.1%
A380	2,920	3.3%
737 Classic	2,398	2.7%
767	834	0.9%
757	730	0.8%
Dash 8	730	0.8%
MD80	730	0.8%
Total	89,478	100.0%

Source: SH&E analysis

Boeing 777s are projected to be the most frequently used aircraft for international passenger operations, followed by narrow body 737 and A320 family aircraft used for intra-Americas service.

Exhibit 6 shows the aircraft expected to be used for all-cargo operations in 2013. Boeing 747-400 and 767 freighters are expected to account for the largest share of all-cargo operations at LAX in 2013.

Exhibit 6: LAX 2013 Base Year Forecast All-Cargo Operations

Aircraft Type	2013 Operations	Share
747-400	5,208	21.6%
767	4,900	20.3%
MD11	3,650	15.2%
A300	3,340	13.9%
DC10/MD10	2,506	10.4%
777 Freighter	1,564	6.5%
747-8F	1,456	6.0%
757	522	2.2%
Convair 580	522	2.2%
747 Classic	418	1.7%
Total	24,086	100.0%

Source: SH&E analysis

SH&E

3.0 2018 Forecast under Current Operating Procedures

The following table shows the growth in aircraft operations projected to occur from 2013 to 2018 if no new restrictions are enacted.

Exhibit 7: 2018 Growth in Aircraft Operations with No New Restrictions

Market Segment	2013 Baseline	2018 No New Restrictions	Avg Annual Growth Rate
Domestic Passenger	458,190	494,802	1.5%
International Passenger	89,478	105,540	3.4%
All Cargo	24,086	26,586	2.0%
General Aviation	22,073	22,548	0.4%
Total	593,827	649,476	1.8%

Source: SH&E analysis

The 2018 operations forecast under this scenario calls for modest growth in commercial aviation as passenger and cargo airlines continue to limit capacity growth to achieve improved profitability. Seat capacity is expected to grow faster than passenger airline operations as airlines replace aging aircraft with larger ones to reduce the average cost per seat mile.

Exhibit 8 shows the growth in weekly passenger aircraft seat departures associated with the operations forecast.

Exhibit 8: 2018 Growth in Weekly Passenger Seat Departures

Market Segment	2013 Baseline	2018 No New Restrictions	Avg Annual Growth Rate
Domestic	544,730	600,891	2.0%
International	208,443	249,670	3.7%
Total	753,173	850,561	2.5%

Source: SH&E analysis

Between 2013 and 2018 domestic seat departures are projected to increase at an average rate of 2.0% per year, 0.5% faster than the growth in domestic passenger aircraft operations. International seat departures are projected to

increase at a 3.7% annual rate, compared to 3.4% growth in international passenger aircraft operations.

Exhibit 9 shows the projected changes in domestic passenger aircraft operations by aircraft type between 2013 and 2018. Notable changes include substantial increases in Boeing 737 Next Gen and Airbus A320 family operations and the end of MD-80 operations at LAX. Southwest Airlines recent decision to upgrade the cabins of 100 of its 737 Classic aircraft supports the view that these aircraft will continue to account for a substantial number of LAX operations in 2018.[1]

Exhibit 9: Change in Domestic Passenger Aircraft Operations 2013-2018

Aircraft Type	2013	2018
737 Next Gen	113,040	143,288
Regional Jet	106,356	108,132
A319/320/321	70,484	82,790
757	53,602	51,620
Brasilia	37,528	37,528
737 Classic	35,360	35,986
767	24,716	24,924
MD80	5,110	0
Dash 8	5,006	5,006
Other	6,988	5,528
Total	458,190	494,802

Source: SH&E analysis

[1] www.flightglobal.com, 20 Jul 2012

Exhibit 10 shows the projected changes in international passenger aircraft operations.

Exhibit 10: Change in International Passenger Aircraft Operations 2013-2018

Aircraft Type	2013	2018
777	23,986	27,636
737 Next Gen	18,040	21,900
A319/320/321	14,080	16,270
747/747-8	10,432	10,118
A330/340	8,236	9,280
Regional Jet	6,362	6,674
A380	2,920	4,380
787	0	2,920
737 Classic	2,398	2,398
Dash 8	730	1,460
767	834	1,252
757	730	730
A350	0	522
MD80	730	0
Total	89,478	105,540

Source: SH&E analysis

Notable changes in international passenger aircraft operations include growth in A380 operations, a decrease in total 747 activity despite the introduction of some 747-8 passenger flights, introduction of service by 787 and A350 aircraft, and the end of MD-80 operations.

Exhibit 11 shows the projected changes in all-cargo aircraft operations.

Exhibit 11: Change in All-Cargo Aircraft Operations 2013-2018

Aircraft Type	2013	2018
747-400	5,208	6,666
767	4,900	5,840
MD11	3,650	3,546
A300	3,340	3,548
DC10/MD10	2,506	1,566
777 Freighter	1,564	1,774
747-8F	1,456	2,602
757	522	522
Convair 580	522	522
747 Classic	418	0
Total	24,086	26,586

Source: SH&E analysis

The 747-400 freighter (including the new variants) will continue to be the workhorse of the international air cargo industry. Boeing 767 and 777 freighter operations are expected to continue growing as high fuel prices continue to make these fuel efficient aircraft attractive to many carriers. High fuel and maintenance costs are expected to end all 747 Classic freighter operations at LAX by 2018, while the recently announced FedEx order for new 767-300 freighters could cause some of the DC10/MD10 operations to shift to 767s[2].

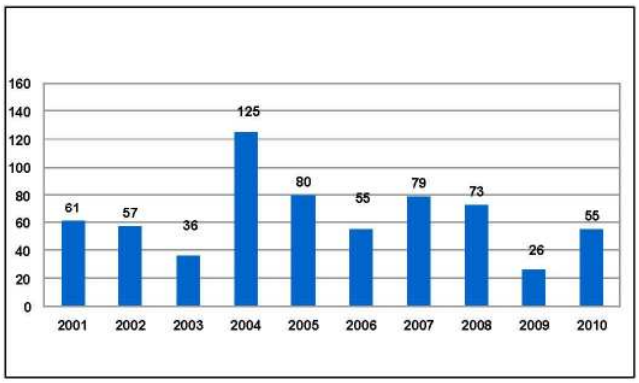
[2] The FedEx order for 27 new 767-300 freighters was announced on December 15, 2011

4.0 2018 Forecast with the Proposed Restriction

Under current regulations pilots are able to request permission from the control tower to conduct eastbound departures when the airport is in Over Ocean operations. These eastbound departures are termed "non-conforming

Exhibit 12 shows the number of annual non-conforming departures from 2001 to 2010.

Exhibit 12: Annual Non-Conforming Eastbound Departures – 2400 to 0630

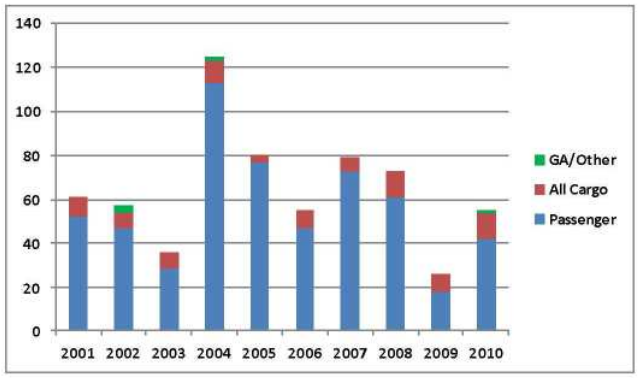


Source: LAX airport records

The number of non-conforming departures depends primarily on weather conditions, and no direct relationship between non-conforming departures and total departures between 2400 and 0630 has been found. For this reason, the expected modest growth from 2013 to 2018 in departures between 2400 and 0630 is not expected to affect the future number of non-conforming departures. The 2018 forecast of non-conforming departures is 65 per year, based on a 130 month (June 2000- March 2011) sample of non-conforming flight data in the LAWA East Departure Gate Penetration report.

The following chart shows non-conforming departures by type of flight. From 2001 through 2010, passenger flights accounted for 86% of non-conforming departures, all-cargo flights for 13%, and general aviation/other flights for 1%[3].

Exhibit 13: Non-Conforming Eastbound Departures by Type of Flight



Source: LAX airport records

[3] The "other" category consists of one passenger aircraft flight being ferried to a maintenance base.

The proposed restriction would ban all non-conforming departures between 2400 and 0630. Exhibit 14 shows the 2018 annual departures that would be affected by time period and the type of flight.

Exhibit 14: 2018 Departures Affected by Proposed Restriction by Time Period

	2400-0059	0100-0359	0400-0630	Total
Passenger	**33**	**18**	**0**	**51**
All Cargo	**2**	**0**	**12**	**14**
Total	**35**	**18**	**12**	**65**

Source: SH&E analysis

With the proposed restriction in place in 2018, an estimated 33 passenger flights that would have preferred a non-conforming east departure between 2400 and 0059 and an additional 18 passenger flights between 0100 and 0359 would not be permitted to take off to the east. Two all-cargo flights between 2400 and 0059 and 12 all-cargo flights between 0400 and 0630 would also not be permitted to take off to the east.

Based on analysis of past non-conforming departures, airlines would most likely respond to the proposed restriction by limiting the payload of the affected operations rather than delaying or rescheduling departures or transferring operations to another airport. If the proposed restriction were enacted, there would be no reduction in total 2018 operations at LAX, but the 65 flights that would have departed to the east would now depart with reduced payload to the west. As a result, there is no difference between the two 2018 forecast scenarios in the total number of aircraft operations or types of aircraft used, although there would be costs to the airlines from operating with reduced payloads to offset the effects of tailwinds on takeoffs.

5.0 Comparison to the FAA Terminal Area Forecast

The FAA Terminal Area Forecast (TAF) represents a standard against which other aviation forecasts are frequently measured. Exhibit 15 compares total 2013 and 2018 aircraft operations from the LAX Part 161 forecast to the 2011 TAF, the most recently released version at the time this forecast was prepared.

Exhibit 15: Comparison of Part 161 Forecasts to the 2011 TAF

	ATADS Part 161	TAF	Percent Difference
2000	783,684	781,418	0.3%
2001	738,679	783,160	-5.7%
2002	644,854	637,588	1.1%
2003	623,370	630,755	-1.2%
2004	654,787	646,919	1.2%
2005	650,539	653,534	-0.5%
2006	656,842	653,181	0.6%
2007	680,954	672,245	1.3%
2008	622,506	659,221	-5.6%
2009	544,833	544,614	0.0%
2010	575,835	570,983	0.8%
2011	603,912	596,194	1.3%
2013	593,827	602,474	-1.4%
2018	649,476	679,332	-4.4%

Source: FAA 2011 TAF, SH&E analysis

Total operations in the Part 161 forecast correspond closely to the TAF results. The Part 161 forecast is 1.4% lower than the TAF for 2013 and 4.4% lower in 2018.

The Part 161 forecasts (like the ATADS data used in their preparation) are based on calendar year data, while the TAF is based on fiscal years ending in September. This accounts for differences in historical data for 2001 and 2008, years in which pronounced changes in activity took place during the fourth quarter.

SH&E

FAA Review and Approval of Aircraft Operations Forecast

U.S Department
of Transportation
Federal Aviation Administration

Western-Pacific Region
Airports Division
Los Angeles Airports District Office

Federal Aviation Administration
P.O. Box 92007
Los Angeles, CA 90009-2007

September 24, 2012

Mr. Scott Tatro
Environmental Affairs Officer
Los Angeles World Airports
Environmental Services Division
1 World Way, P.O. Box 92216
Los Angeles, CA 90009

Dear Mr. Tatro:

Los Angeles International Airport
Forecasts of Aircraft Operations at LAX – 2013 and 2018

The Federal Aviation Administration has reviewed the Part 161 Draft Working Paper entitled *Forecasts of Aircraft Operations at LAX – 2013 and 2018* dated August 1, 2012. We approve the use of those forecasts for your proposed Part 161 Study.

We compared your 2018 operations forecast to the Federal Aviation Administration (FAA) 2011 Terminal Area Forecast (TAF) which we published in January 2012. Your commercial and total operations forecasts for 2018 are within 10% of the TAF, which is our standard for determining TAF consistency at the 5-year point. We also reviewed other FAA data sources and find good consistency with the operations and shares projected for 2013 by market segment and aircraft type as reflected in Exhibits 3, 4, 5 and 6 of your forecast. We also consider the growth projections reflected in Section 3.0 of your forecast to be reasonable.

If you have any additional questions, please contact Richard Dykas, Regional Capacity Officer at (310) 725-3613 or Richard.Dykas@faa.gov.

Sincerely,

Victor Globa
Environmental Protection Specialist

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APPENDIX K DEVELOPMENT OF THE ANSI SLEEP STANDARD

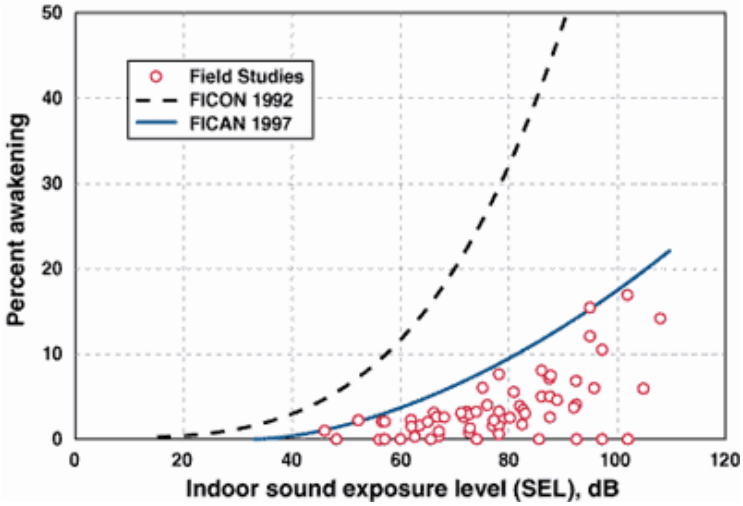
The Origins of the Methods Described in the ANSI Standard

Years of sleep disturbance research and then synthesis of those research results provided a practical method to compute number of people awakened from a full night of aircraft operations. That practical method eventually led to development of the current version of the ANSI Standard. [17]

Sleep Disturbance Research

Night time aircraft noise can awaken people living near an airport, and there have long been efforts to quantify the circumstances that produce such awakenings. Such research has involved documenting the reactions of sleeping subjects to measured noise levels, either in a laboratory or in "field studies" in their homes. The subjects are sometimes attached to instrumentation that measures such things as heart rate, brain activity and physical movement, or they may be asked to simply press a button on a computer next to their bed or on a bracelet whenever they awaken. Noise events may be played through speakers, or may be a result of aircraft flying over their homes. In general, the results of such studies are summarized in a form similar to Figure K-1.

Figure K-1 Typical Experimentally Determined Relationship between Indoor SEL and Percent of Population Awakened



Curves like those plotted in Figure K-1 mathematically represent the summation of the results, showing what percent of the people who experienced the various sound levels were awakened. In the figure, the FICAN 1997 curve shows, for example, that for an indoor Sound Exposure Level of 80 dB, a maximum of about 10 percent of those who experience it are likely to be awakened.

[17] American National Standard, ANSI / ASA S12.9-2008 / Part 6, "Quantities and Procedures for Description and Measurement of Environmental Sound — Part 6: Methods for Estimation of Awakenings Associated with Outdoor Noise Events Heard in Homes." This Standard is available for purchase at: http://webstore.ansi.org/.

But the issue with most night time noise is not what percent will be awakened by a single event, but what percent or number of people will be awakened by the full night of events. The answer to the second question is much more practical, particularly in assessing changes in night time noise or ways to reduce the effects of night time noise.

Putting Sleep Research Results to Practical Use

In 2007, a pragmatic approach for using sleep research results was proposed. [18] This approach used the awakening data on each of 84 subjects who lived around Los Angeles International (31 subjects), Denver International Airport (29 subjects) and Castle Air Force Base (24 subjects). The U.S. Air Force provided these data, which were previously obtained by Dr. Sanford Fidell and his co-workers under contract to the U.S. Air Force and NASA and were previously reported. [19,20,21,22] The data on each subject included the time and level of each aircraft noise event as measured in the sleeping room, and whether the subject awoke or not.

First Analysis Result – New Awakening Relationships

The first level of analysis provided by Anderson and Miller developed two primary equations that gave the probability that an average person would awaken dependent on the indoor Sound Exposure Level (SEL). One equation gave the probability independent of when during the night the aircraft noise event occurred, while the second one included the time of night. The results for the second equation showed that the later in the night an event occurred, the more likely a person is to awaken – probability of awakening depends on time of night.

Figure K-2 and Figure K-3 present examples of how, when the time of an event is later, the probability of awakening increases. These results, however, still provide no way to account for a full night of aircraft noise events. The second analysis of the article (footnote 21), gives a method.

[18] Anderson, G.S. and Miller, N.P., "Alternative analysis of sleep-awakening data," Noise Control Eng. J. 55 (2), 2007 March-April

[19] S. Fidell et al, "Noise-induced sleep disturbance in residential settings," Report AL/OE-TR-1994-0131, Occupational & Environmental Health Division, Armstrong Laboratory, Wright Patterson Air Force Base, Ohio (1994).

[20] S. Fidell et al, "Field study of noise-induced sleep disturbance," J. Acoust. Soc. Am. 98(2), (1995)

[21] S. Fidell et al, "Effects on sleep disturbance of changes in aircraft noise near three airports," J. Acoust. Soc. Am. 107(5), (2000)

[22] S. Fidell et al, "Noise-induced sleep disturbance in residences near two civil airports," NASA Contractor Report 198252, Contract NAS1-200101 (December 1995)

Figure K-2 Analysis Results for 1 Hour after Retiring

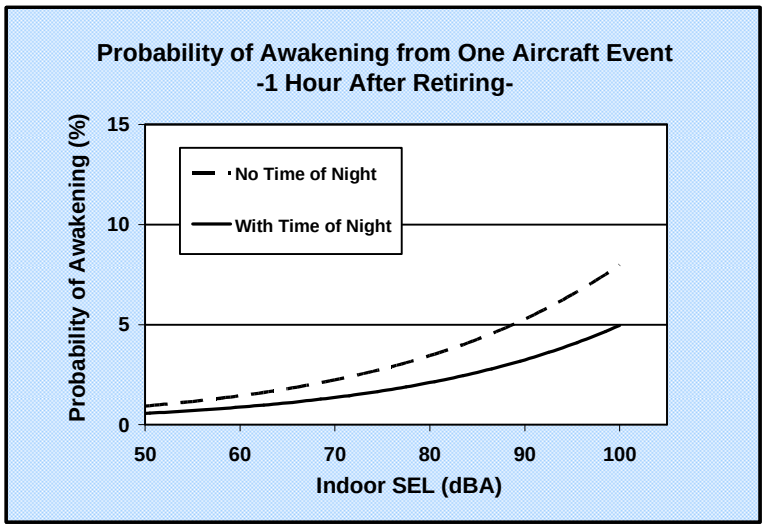
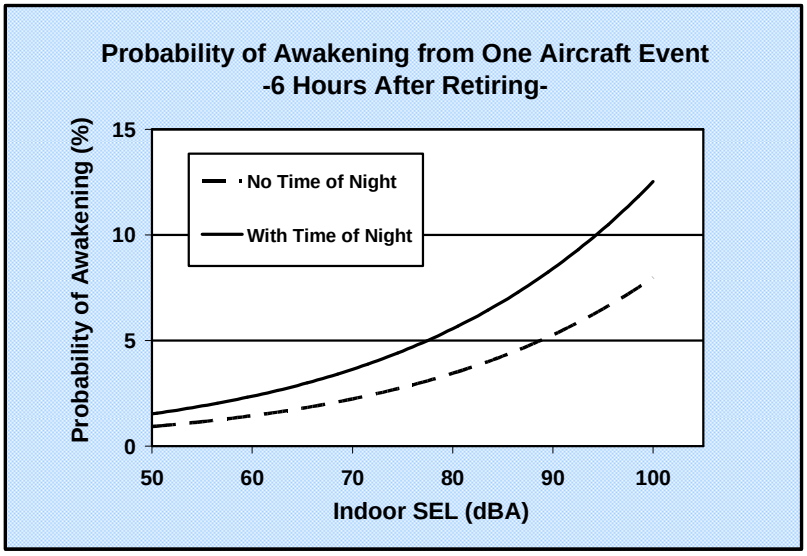


Figure K-3 Analysis Results for 6 Hours after Retiring



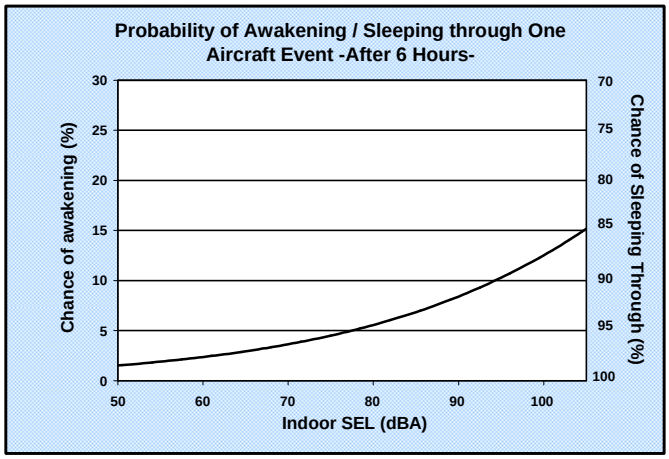
Second Analysis Results – Accounting for a Full Night of Operations

The relationships shown in Figure K-2 and Figure K-3 give probability of awakening. Figure K-4 shows how this probability is translated simply to the probability of sleeping through; i.e., of not awakening from the event. Sleeping through is simply one minus the probability of awakening. If the probability of awakening is 10%, then the probability of not awakening is 90%. If there are two events, then the probability of sleeping through both is 90% times 90% or 81% chance of not awakening.

In the same way, the probability of sleeping through any number of events can be computed. Once all the events in a night are included, then one minus the total probability of sleeping through all events is the probability of not sleeping through them all or the probability of awakening at least

once during the night. The result can be interpreted as the percent of people likely to be awakened at least once during the night since the equations of the first analysis are based on averages. The result can also be interpreted as the probability the average person will be awakened at least once during the night.

Figure K-4 Translating Probability of Awakening to Probability of Sleeping Through an Aircraft Event



DEVELOPMENT OF THE STANDARD

The American National Standards Institute, Inc. (ANSI) has served as administrator and coordinator of the United States private sector voluntary standardization system for more than 90 years. ANSI has as its primary goal the enhancement of global competitiveness of U.S. business and the American quality of life by promoting and facilitating voluntary consensus standards and conformity assessment systems and promoting their integrity.

ANSI facilitates the development of American National Standards by accrediting the procedures of standards developing organizations. One of those standards organizations is the Acoustical Society of America, providing several ANSI accredited Standards Committees on topics related to acoustics. Specifically, Standards Committee S12 develops and revises standards related to noise.

Committee S12 recognized that since the awakening Standard was first approved in 2000, considerable additional data on sleep disturbance had become available. Following its approved operating procedures, the Working Group 15 of Committee S12 met over the course of several years, reviewing available data and methods developed by credible sleep disturbance studies, both in the U.S. and in other countries. [23]

The committee reached consensus on several important issues, including the following two. First, actual (behavioral) awakening would be the type of sleep disturbance addressed. Several European researchers suggest that physical movement ("motility") is the appropriate indicator of sleep disturbance, [24] while others consider changes in or time spent in different sleep stages the important

[23] Note that Committee S12 has a number of working groups, each working on different aspects of noise and noise control. Working Group 15 is "Measurement and Evaluation of Outdoor Community Noise"

[24] Miedema, H.M.E., W. Passchier-Vermeer, H. Vos, "Elements for a position paper on night-time transportation noise and sleep disturbance," TNO Inro report 2002-59, 2002

measure of sleep disturbance.[25] This decision was based in part on the limited ability to relate these other measures to actual awakenings, the overall uncertainty of the relationship of any type sleep disturbance to health effects, and on the ease of communicating to a lay public the concept of increased or decreased behavioral awakenings.

Second, rather than use a cumulative noise metric such as the Day-Night Average Sound Level, DNL, or the equivalent night-time level, Lnight (as proposed in the reference of footnote 24), the method of Anderson and Miller would be used to compute the percent of populations likely to be awakened at least once during the night as a result of a stated distribution of aircraft SELs. It was noted that the metric of Lnight has been shown to have no correlation with awakenings.[26]

The resultant Standard, after detailed review, comments and changes by Working Group 15, was approved by Committee S12 and approved in July 2008 by the American National Standards Institute, Inc. Later that year, the Standard was reviewed by the Federal Interagency Committee on Aviation Noise (FICAN) and recommended for use in predicting awakenings from aircraft noise; see FICAN Recommendation, Appendix L.

APPLICATION OF THE STANDARD TO CHANGES IN NIGHT OPERATIONS

This section provides the technical detail on use of the Standard to estimate the percent or number of people awakened by nighttime operations at an airport.

The Equation

The relationship that predicts the probability of awakening from a single event is given by Equation K-1.

$$p_{awake,single} = \frac{1}{1+e^{-Z}}$$

Equation K-1

In this equation, the variable Z is expanded in **Error! Reference source not found.**.

$$Z = \beta_0 + \beta_L L_{AE} + \beta_T T_{retire}$$

Equation K-2

Where:

$\beta_0, \beta_L, \beta_T$ = Constants

L_{AE} = Indoor SEL

[25] Griefahn, B., S. Robens, P. Bröde, M. Basner, "The sleep disturbance index – a measure for structural alterations of sleep due to environmental influences," Proceedings ICBEN 2008, Foxwoods, CT, U.S.A

[26] Ibid, Fidell, 1994

T_{retire} = Time since retiring (minutes)

Table K-1 gives the values of the constants. The constants are different depending on whether or not the times of night of the aircraft noise events (which are translated to time since retiring) are known.

Table K-1 Values of Equation Constants for Calculating Probability of Awakening
Source: ANSI SI12.9-2008

Determine Awakenings Using:	Values of the Constants		
	β_0	β_L	β_T
SEL values only	-6.8884	0.04444	0
SEL and Time Since Retiring	-7.594	0.04444	0.00336

The Method

Define a Grid of Points about the Airport

The Standard is used by computing percent awakened at individual points around the airport. Each point should be associated with a population number. Using census block centroids is one useful means to identify the grid of points. Alternatively, a regular grid of points may be defined, but then the population values need to be associated with the closest or most appropriate grid point. [27]

Run INM to Compute Distribution of SEL Values at each Point

The FAA's Integrated Noise Model (INM) is particularly useful because it can provide (by setting up a "detailed grid point analysis") a complete list of SEL values at each grid point. When accounting for time of night (as done in the Part 161 study) the computations are run once for the operations in each third of the night: 10:00 p.m. to 01:00 a.m., 01:00 a.m. to 04:00 a.m., and 04:00 a.m. to 07:00 a.m.

Determine Outdoor-to-Indoor Noise Level Reductions

In the sleep research, indoor SEL values that are less than about 50 dB have generally been determined to awaken few if any subjects. Hence, any indoor SEL's less than 50 dB may be eliminated from the calculations. (The Standard states that "…the probability of awakening shall be set to zero for any [SEL] that is less than 50 dB."). Because the INM computes outdoor sound levels, an outdoor-to-indoor noise level reduction needs to be selected for each grid point. For some airports, this reduction can be different for the areas where the homes have received sound insulation. [28] Adjust all computed SEL values by the outdoor –to-indoor reduction and eliminate any resulting SEL less than 50 dB.

[27] For example, if population is concentrated away from the centroid, a grid point more closely associated with the actual distribution may be selected.

[28] In realistic applications of the Standard, sound insulation reduces the number of awakenings by 20% to 25%.

Adjust Number of Operations for Seven Hours of Sleep

The Standard recognizes that the nighttime used in the U.S. is nine hours long from 10 p.m. to 7 a.m. yet average U.S. adults sleep seven hours a night. Hence, the number of operations at each SEL value is multiplied by seven-ninths.

Compute the Number or Percent of People Awakened

The computation may be thought of as iterative across grid points and step-wise for each grid point:

- At a grid point, for each SEL value in each of the three night time periods, Equation 1 and Equation 2 with the second row of constants in Table 1 are used to compute the probability of awakening from each SEL; time since retiring that should be used for each third of the night is:
    - For events between 10:00 p.m. to 01:00 a.m. – 70 minutes
    - For events between 01:00 a.m. to 04:00 a.m. – 210 minutes
    - For events between 04:00 a.m. to 07:00 a.m. – 350 minutes
- Compute the probability of not awakening for each SEL by subtracting the probability of awakening from one
- Multiply the probability of not awakening times every other probability of not awakening during the entire night
- Subtract the resulting entire night probability of not awakening from one
- Multiply the entire night probability of not awakening by the population for that grid point
- Repeat the calculation for each grid point
- If desired, the numbers of people awakened at all grid points may be summed to yield:
    - Total number of people awakened
    - Percent of all people awakened

The following tables provide an example calculation at one point with population of 1000.

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Probability of not Awakening 2200-0100
0.69489806

Distribution of Indoor SEL and Number of Aircraft Operations at Each SEL 2200-0100												
Indoor SEL	59	61	63	65	67	69	71	73	75	77	79	81
Number of Ops, each SEL	1	2	3	2	1	2	3	2	1	2	3	2
Tretire	70.00	70.00	70.00	70.00	70.00	70.00	70.00	70.00	70.00	70.00	70.00	70.00
7/9 * Ops	0.777778	1.555556	2.333333	1.555556	0.777778	1.555556	2.333333	1.555556	0.777778	1.555556	2.333333	1.555556
Prob Not Awake	0.99131	0.98111	0.969232	0.977497	0.987646	0.973208	0.95648	0.968121	0.982464	0.962096	0.938669	0.954973

Probability of not Awakening 0100-0400
0.67343872

Distribution of Indoor SEL and Number of Aircraft Operations at Each SEL 0100-0400												
Indoor SEL	59	61	63	65	67	69	71	73	75	77	79	81
Number of Ops, each SEL	1	2	1	2	0	1.5	1	2	1	2	3	0
Tretire	210.00	210.00	210.00	210.00	210.00	210.00	210.00	210.00	210.00	210.00	210.00	210.00
7/9 * Ops	0.777778	1.555556	0.777778	1.555556	0	1.166667	0.777778	1.555556	0.777778	1.555556	2.333333	0
Prob Not Awake	0.986163	0.97002	0.983515	0.964344	1	0.968051	0.976642	0.9497	0.972224	0.940357	0.904227	1

Probability of not Awakening 0400-0700
0.50453709

Distribution of Indoor SEL and Number of Aircraft Operations at Each SEL 0400-0700												
Indoor SEL	59	61	63	65	67	69	71	73	75	77	79	81
Number of Ops, each SEL	1	1	2.5	2	1	0	3	0	1	2	1	3
Tretire	350.00	350.00	350.00	350.00	350.00	350.00	350.00	350.00	350.00	350.00	350.00	350.00
7/9 * Ops	0.777778	0.777778	1.944444	1.555556	0.777778	0	2.333333	0	0.777778	1.555556	0.777778	2.333333
Prob Not Awake	0.978034	0.976041	0.935955	0.943837	0.968947	1	0.893415	1	0.95627	0.907063	0.948203	0.840324

For Entire Night

Population at Point	Probability of not Awakening	Probability of Awakening	Number Awakened
1000	0.236109	0.763891	763.8911

Percent Awakened or Chance Average Person Awakened	**76.38911**

APPENDIX L FICAN RECOMMENDATION

FICAN
Federal Interagency Committee on Aviation Noise

Dr. Kevin P. Shepherd, Chairman
NASA Langley Research Center
Mail Stop 463
Hampton, VA 23681-2199
k.p.shepherd@nasa.gov

Federal Interagency Committee on Aviation Noise (FICAN)
FICAN Recommendation for use of ANSI Standard to Predict Awakenings from Aircraft Noise

December, 2008

In 1997, FICAN recommended a curve for predicting the maximum likelihood of behavioral awakening from a single aircraft noise event[1]. That dose-response relationship has been applied in environmental noise studies since that time.

The American National Standards Institute (ANSI) recently published a standard for estimating the likelihood of behavioral awakenings in ANSI S12.9-2008, *Quantities and Procedures for Description and Measurement of Environmental Sound — Part 6: Methods for Estimation of Awakenings Associated with Outdoor Noise Events Heard in Homes*[2]. ANSI S12.9-2008 provides a method to predict sleep disturbance in terms of percent awakenings or numbers of people awakened associated with noise levels in terms of indoor A-weighted sound exposure level. In contrast to the earlier FICAN recommendation, the probability of awakening is less for a single noise event, but the Standard enables estimation of awakenings from an entire night of noise events. The Standard was developed from field studies of behavioral awakening primarily in homes near airports subject to routine jet aircraft operations. The database used in derivation of the method consists of about 10,000 subject-nights of observations in a variety of communities in the United States and Europe.

FICAN recommends the use of this new estimation procedure for future analyses of behavioral awakenings from aircraft noise. FICAN recognizes that additional sleep disturbance research is underway by various research organizations, and results of that work may result in additional changes to FICAN's position. Until that time, FICAN recommends the use of ANSI S12.9-2008.

ANSI S.12.9-2008 is available for purchase at: http://webstore.ansi.org/.

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[1] Federal Interagency Committee on Aviation Noise, *Effects of Aviation Noise on Awakenings from Sleep*, June, 1997, accessed at: http://www.fican.org/pages/findings.html (December 4, 2008).

[2] ANSI S12.9-2008, *Quantities and Procedures for Description and Measurement of Environmental Sound — Part 6: Methods for Estimation of Awakenings Associated with Outdoor Noise Events Heard in Homes*, 2008.

Department of Defense • Department of Interior • Department of Transportation • Environmental Protection Agency •
National Aeronautics and Space Administration • Department of Housing and Urban Development
www.fican.org

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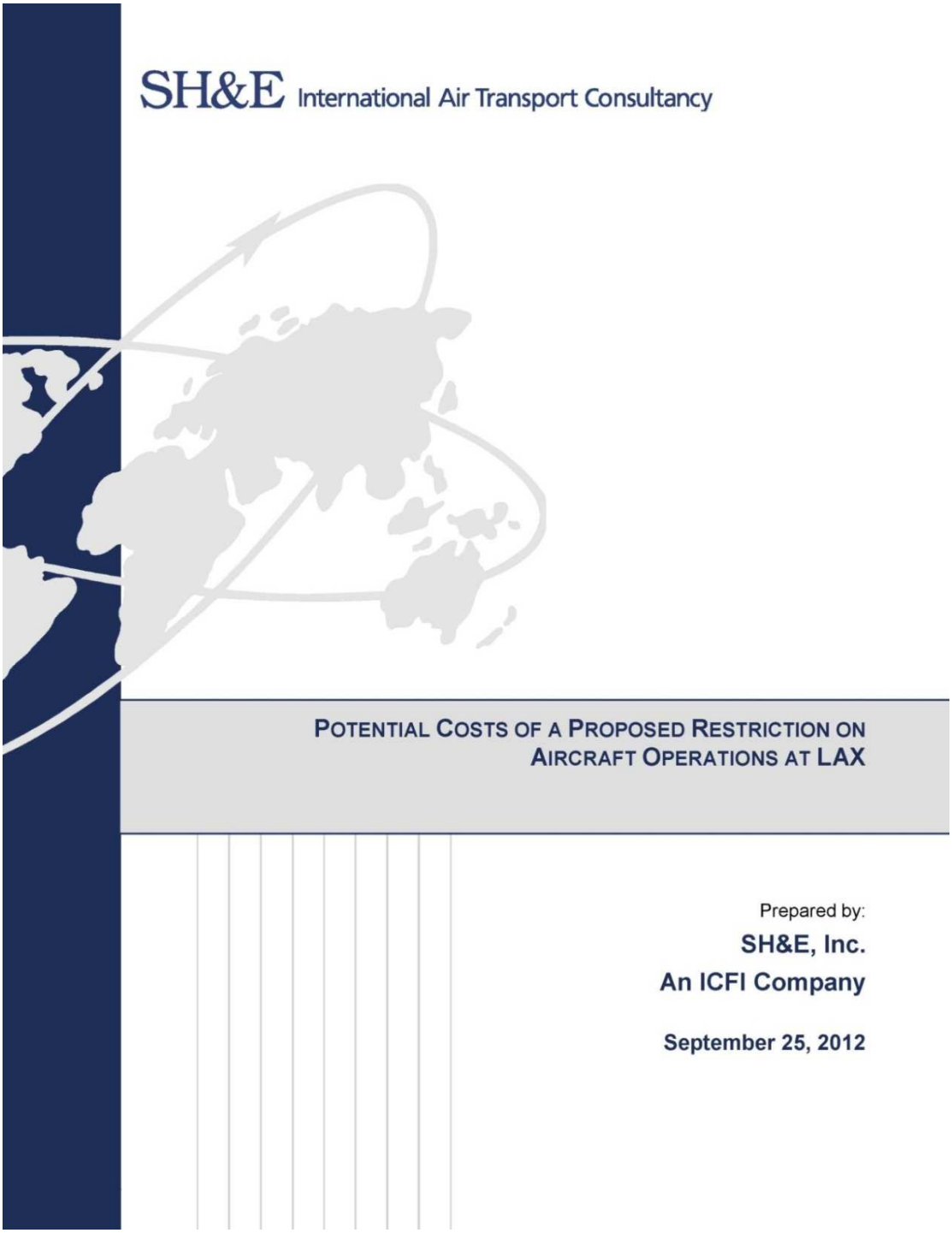
APPENDIX M USE RESTRICTION COST ANALYSES



1.0 Introduction

Los Angeles World Airports (LAWA) is conducting a Part 161 Study to determine the potential impacts of a proposed restriction on eastbound aircraft departures at Los Angeles International Airport (LAX) while the airport is in Over Ocean or Westerly Operations between midnight and 6:30 AM. These eastbound departures are termed "non-conforming".

To be approved, a Part 161 study must include:

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.[1]

This working paper presents the potential costs of the proposed restrictions and describes the analysis conducted to estimate those costs.

[1] http://ecfr.gpoaccess.gov/

PART 161—NOTICE AND APPROVAL OF AIRPORT NOISE AND ACCESS RESTRICTIONS
§ 161.305 Required analysis and conditions for approval of proposed restrictions.

2.0 Flights Affected by the Proposed Restriction

Exhibit 1 shows the flights expected to be affected in 2018 by the proposed restriction on non-conforming takeoffs. The forecast is based on the pattern of non-conforming operations from a 130 month sample (June 2000- March 2011) of non-conforming flight data in the LAWA East Departure Gate Penetration report. Potentially affected flights include 51 passenger aircraft departures and 14 all-cargo departures. Approximately half of the non-conforming departures take place between midnight and 1:00 AM, with the rest spread from 1:00 to 6:30 AM.

Exhibit 1: 2018 Departures Affected by Proposed Restriction by Time Period

	2400-0059	0100-0359	0400-0630	Total
Passenger	33	18	0	51
All Cargo	2	0	12	14
Total	35	18	12	65

Source: SH&E analysis

Exhibit 2 shows the types of aircraft that would be affected by the proposed restriction. Twin-engine models including Boeing 777-200, Boeing 777-300 and Boeing 767-300 freighter aircraft account for 36 of the 65 potentially affected departures.

Exhibit 2: 2018 Departures Affected by Proposed Restriction by Aircraft Type

Aircraft Type	Passenger	All-Cargo	Total
747-400	14	13	27
777-200	19		19
777-300	16		16
A380	2		2
767 Freighter		1	1
Total	51	14	65

Source: SH&E analysis

Exhibit 3 shows the potentially affected flights by market. All are international flights, and except for one all-cargo flight to Mexico City all the departures are to markets over 5,000 miles away, including 26 flights to markets over 7,000 miles distant.[2]

Exhibit 3: 2018 Departures Affected by Proposed Restriction by Market

Airport Code	Market	Distance (miles)	Departures
NRT	Tokyo	5,436	12
BNE	Brisbane	7,166	9
ICN	Seoul	5,982	9
SYD	Sydney	7,491	9
TPE	Taipei	6,783	9
HND	Tokyo	5,473	5
CAN	Guangzhou	7,227	3
HKG	Hong Kong	7,230	3
MEL	Melbourne	7,924	2
PEK	Beijing	6,232	2
MEX	Mexico City	1,554	1
NAN	Nadi, Fiji	5,522	1
Total			65

Source: SH&E analysis

LAX-NRT Flights

The 12 departures to Tokyo Narita are all-cargo operations. In 2010 747-400 freighter flights operated by Korean Air, Japan Air Lines, and Nippon Cargo Airlines to NRT accounted for 10 non-conforming departures. Japan Air Lines has since discontinued all of its freighter operations, but other carriers are expected to add service offsetting the loss in JAL freighter capacity.

[2] All distances shown represent the direct great-circle distance. The actual distance flown can be substantially greater.

LAX-BNE Flights

In 2018, nine passenger aircraft departures to Brisbane are expected to be affected by the proposed restriction. These include 747-400 service operated by Qantas and 777 service by V Australia.

Exhibit 4 presents information on Qantas Flight 16 operations from LAX to Brisbane from March 16 to March 28, 2012.

Exhibit 4: Qantas Flight 16 Operations – March 16 to March 28, 2012

Scheduled Date	Aircraft	Departure	Arrival	Duration
28-Mar-12	B744	23:53 PDT	05:43 EST (+2)	12:50
27-Mar-12	B744	23:45 PDT	06:01 EST (+2)	13:16
26-Mar-12	B744	00:32 PDT	07:16 EST (+1)	13:44
25-Mar-12	B744	00:03 PDT	06:45 EST (+1)	13:42
24-Mar-12	B744	00:08 PDT	06:43 EST (+1)	13:35
23-Mar-12	B744	00:24 PDT	06:56 EST (+1)	13:32
22-Mar-12	B744	00:30 PDT	07:01 EST (+1)	13:31
21-Mar-12	B744	00:17 PDT	06:40 EST (+1)	13:23
19-Mar-12	B744	00:14 PDT	06:38 EST (+1)	13:24
18-Mar-12	B744	00:08 PDT	06:36 EST (+1)	13:28
17-Mar-12	B744	00:25 PDT	06:40 EST (+1)	13:15
16-Mar-12	B744	00:25 PDT	06:24 EST (+1)	12:59
Average				13:23

Source: http://flightaware.com

QF16 is scheduled to depart LAX at 23:50 and utilizes 747-400 aircraft. The scheduled date represents the day the aircraft was scheduled to take off. When departures are delayed until after midnight, the actual departure date is one day later than the scheduled date.

Two of the 12 flights shown departed before midnight. If the pilots of these flights chose to make eastbound departures, they would not be considered non-conforming and would not be affected by the proposed restriction. The other 10 flights were delayed past midnight and would not be permitted to take off to the east under the proposed restriction.

These are very long flights. The direct great-circle distance between LAX and BNE is 7,166 miles, and the 12 flights shown had an average duration of 13:23. Brisbane Airport does not have curfews that limit airline flight scheduling, and QF16 is timed to give passengers an early morning arrival.

Exhibit 5 shows the average passenger load factor and average air cargo payload by aircraft type for 2009, 2010, and the first six months of 2011.

Exhibit 5: LAX-BNE Passenger Load Factor and Air Cargo Traffic

Aircraft Type	2009	2010	Jan to Jun 2011
Average Passenger Load Factor			
Boeing 747-400	79.5%	79.6%	85.5%
Boeing 777-200/200LR	71.4%	88.0%	84.3%
Average Cargo Payload in Metric Tonnes			
Boeing 747-400	3.4	4.1	5.6
Boeing 777-200/200LR	6.9	9.8	8.4

Source: USDOT T100 data

The average passenger load factor for both aircraft types is strong for the first half of 2011, and both typically carry substantial amounts of freight.

LAX-ICN Flights

In 2018, nine passenger aircraft departures to Seoul Incheon International Airport are expected to be affected by the proposed restriction, including flights by Korean Air and Asiana. Exhibit 6 presents information on Asiana Flight 203 (OZ203) operations, between March 16 and March 28, 2012, one of the flights that would be affected by the proposed restriction.

Exhibit 6: Asiana Flight 203 Operations – March 16 to March 28, 2012

Scheduled Date	Aircraft	Departure	Arrival	Duration
28-Mar-12	B772	0:43	04:39 KST (+1)	11:56
27-Mar-12	B772	0:47	04:57 KST (+1)	12:10
26-Mar-12	B772	1:16	05:48 KST (+1)	12:32
25-Mar-12	B772	0:59	05:15 KST (+1)	12:16
24-Mar-12	B772	1:00	05:05 KST (+1)	12:05
23-Mar-12	B772	0:44	05:18 KST (+1)	12:34
22-Mar-12	B772	0:56	05:30 KST (+1)	12:34
21-Mar-12	B772	0:55	05:23 KST (+1)	12:28
20-Mar-12	B772	0:50	05:28 KST (+1)	12:38
19-Mar-12	B772	1:09	06:44 KST (+1)	13:35
18-Mar-12	B772	1:17	05:59 KST (+1)	12:42
17-Mar-12	B772	0:55	05:28 KST (+1)	12:33
16-Mar-12	B772	1:06	05:28 KST (+1)	12:22
Average				12:29

Source: http://flightaware.com

OZ203 is scheduled to depart LAX at 00:20 and generally arrives at Incheon International Airport (ICN) between 0500 and 0600 local time. It utilizes 777-200ER aircraft. The flights shown in Exhibit 6 were late taking off by an average of 38 minutes, which indicates that Asiana would have to re-schedule OZ203 departures by an hour or more earlier to give pilots the option of eastbound take-offs if the proposed restriction were enacted. Seoul Incheon International Airport has no noise curfews that limit flight scheduling.

Although the great circle distance between LAX and ICN is 1,184 miles less than the distance from LAX to BNE, the average flight duration for the

sample of ICN flights averages only 54 minutes less than the average for the sample of QF16 flights to BNE. The LAX-ICN flight duration primarily reflects the headwinds often encountered on westbound North Pacific flights and the need to fly more circuitous routes, including routes circling over Russia and China to approach Incheon from the west while avoiding North Korean airspace.[3]

Exhibit 7 shows the average passenger load factor and average air cargo payload by aircraft type for 2009, 2010, and the first six months of 2011 for LAX-ICN passenger aircraft operations. Like the LAX-BNE flights, the average passenger load factors for all aircraft types are strong, and all aircraft types typically carry substantial cargo payloads.

Exhibit 7: LAX-ICN Passenger Load Factor and Air Cargo Traffic

Aircraft Type	2009	2010	Jan to Jun 2011
Average Passenger Load Factor			
Boeing 747-400	80.8%	80.9%	81.5%
Boeing 777-200/200LR	82.3%	88.2%	88.8%
Boeing 777-300/300ER	85.3%	85.1%	82.7%
Average Cargo Payload in Metric Tonnes			
Boeing 747-400	4.2	4.4	5.1
Boeing 777-200/200LR	3.2	3.3	3.4
Boeing 777-300/300ER	9.9	6.3	6.7

Source: USDOT T100 data

[3] The typical cruise speed for 747s used on the LAX-BNE route is approximately 7 miles per hour faster than the typical cruise speed for 777s used for Asiana LAX-ICN service. This impact is small compared to the impacts of headwinds and greater circuitry.

LAX-SYD Flights

Nine departures to Sydney are expected to be affected in 2018 by the proposed restriction. These include flights operated by Delta, Qantas, and United.

Qantas Flight 108 (QF108) accounted for four non-conforming departures in 2010, the majority of the non-conforming LAX-SYD departures that year. QF108 is currently operated by a mix of 747-400 and A380 aircraft, and is a continuation of a flight originating at New York JFK International with an aircraft change at LAX. In 2018 all QF108 flights are expected to be operated by A380 aircraft.

Exhibit 8 shows QF108 operations conducted between March 16 and March 28, 2012.

Exhibit 8: Qantas Flight 108 Operations – March 16 to March 28, 2012

Scheduled Date	Aircraft	Departure	Arrival	Duration
28-Mar-12	B744	00:29 PDT	08:33 EST (+1)	14:04
27-Mar-12	B744	00:30 PDT	08:37 EST (+1)	14:07
26-Mar-12	B744	01:13 PDT	09:35 EST (+1)	14:22
25-Mar-12	B744	00:28 PDT	08:41 EST (+1)	14:13
24-Mar-12	B744	00:03 PDT	08:32 EST (+1)	14:29
23-Mar-12	B744	00:35 PDT	08:47 EST (+1)	14:12
22-Mar-12	B744	00:25 PDT	08:28 EST (+1)	14:03
21-Mar-12	A388	00:24 PDT	08:53 EST (+1)	14:29
20-Mar-12	B744	23:39 PDT	08:10 EST (+2)	14:31
19-Mar-12	B744	00:02 PDT	08:03 EST (+1)	14:01
18-Mar-12	B744	00:32 PDT	08:42 EST (+1)	14:10
17-Mar-12	B744	00:54 PDT	08:48 EST (+1)	13:54
16-Mar-12	B744	01:10 PDT	08:33 EST (+1)	13:23
Average				14:09

Source: http://flightaware.com

QF108 is scheduled to depart LAX at 2350, and usually arrives at Sydney Kingsford Smith Airport (SYD) between 0800 and 0900 local time. All but one of the 13

departures shown in Exhibit 8 took place after 2400, when the proposed restriction would prohibit eastbound departures when LAX is in Over Ocean operations.

SYD has curfews restricting aircraft operations from 2300 to 0600 daily extended to 0600-0700 and 2200-2300 on weekends.[4] Qantas could schedule earlier departures from LAX and still meet the curfew requirements at SYD, but this would affect the scheduling of all segments of the SYD-LAX-JFK-LAX-SYD round trip and require Qantas offer a very early arrival at LAX on the eastbound leg from SYD, a time that many passengers might find inconvenient.

Exhibit 9 shows the average passenger load factors and cargo payload for aircraft used for LAX-SYD service. As with the previously shown routes, the airlines operating LAX-SYD generally achieve strong passenger load factors and substantial cargo payloads.

Exhibit 9: LAX-SYD Passenger Load Factor and Air Cargo Traffic

Aircraft Type	2009	2010	Jan to Jun 2011
Average Passenger Load Factor			
Airbus A380-800	85.4%	79.7%	79.9%
Boeing 747-400	83.7%	83.7%	82.1%
Boeing 777-200/200LR	70.3%	83.9%	84.0%
Average Cargo Payload in Metric Tonnes			
Airbus A380-800	4.4	4.5	3.8
Boeing 747-400	2.5	2.9	2.2
Boeing 777-200/200LR	8.8	7.8	7.3

Source: USDOT T100 data

[4] Sydney Airport Curfew Regulations include concessions for international passenger aircraft that allow no more than 24 landings between 0500-0600 local time in any one week for all operators. See http://www.boeing.com/commercial/noise/sydney.html.

LAX-TPE Flights

Nine departures to Taipei are expected to be affected in 2018 by the proposed restriction, including eight EVA and one China Airlines passenger flights. Exhibit 10 shows EVA Flight 15 (BR15) operations from March 16 to March 28, 2012.

Exhibit 10: EVA Flight 15 Operations – March 16 to March 28, 2012

Scheduled Date	Aircraft	Departure Time	Arrival Time	Duration
28-Mar-12	B77W	00:38 PDT	04:46 CST (+1)	13:08
27-Mar-12	B77W	00:22 PDT	na	na
26-Mar-12	B77W	01:20 PDT	na	na
25-Mar-12	B77W	00:37 PDT	04:58 CST (+1)	13:21
24-Mar-12	B77W	00:32 PDT	05:12 CST (+1)	13:40
23-Mar-12	B77W	00:40 PDT	06:22 CST (+1)	14:42
22-Mar-12	B77W	00:44 PDT	05:56 CST (+1)	14:12
21-Mar-12	B77W	00:28 PDT	05:13 CST (+1)	13:45
20-Mar-12	B77W	00:32 PDT	05:25 CST (+1)	13:53
19-Mar-12	B77W	00:37 PDT	06:08 CST (+1)	14:31
18-Mar-12	B77W	00:42 PDT	05:35 CST (+1)	13:53
17-Mar-12	B77W	00:06 PDT	05:28 CST (+1)	14:22
16-Mar-12	B77W	00:31 PDT	05:01 CST (+1)	13:30
Average				13:54

Source: http://flightaware.com

BR15 is scheduled to depart LAX at 0010 and utilizes 777-300ER aircraft. The flight would have to be re-scheduled to depart before midnight to receive permission for eastbound departures under the proposed restriction, but flights delayed past midnight would be required to take off to the west regardless of pilot preferences. Taipei Taoyuan International Airport (TPE) has no curfews that limit aircraft operations.

Exhibit 11 shows the passenger load factors and cargo payload for LAX-TPE passenger flights.

Exhibit 11: LAX-TPE Passenger Load Factor and Air Cargo Traffic

Aircraft Type	2009	2010	Jan to Jun 2011
Average Passenger Load Factor			
Boeing 747-400	76.1%	84.8%	83.6%
Boeing 777-200/200LR	74.8%	80.0%	79.3%
Boeing 777-300/300ER	81.4%	82.6%	83.2%
Average Cargo Payload in Metric Tonnes			
Boeing 747-400	3.5	2.9	1.5
Boeing 777-200/200LR	2.1	3.4	1.7
Boeing 777-300/300ER	7.6	6.7	7.0

Source: USDOT T100 data

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LAX-HND Flights

Five departures to Tokyo International Airport (Haneda – HND) are expected to be affected in 2018 by the proposed restriction, all operated by All Nippon Airways utilizing 777-200ER aircraft[5]. All Nippon Airways Flight 1005 (NH1005) is scheduled to depart LAX at 0040 and generally arrives at Tokyo between 0430 and 0530. Exhibit 12 shows NH1005 operations from March 16 to March 28, 2012.

Exhibit 12: All Nippon Flight 1005 Operations – March 16 to March 28, 2012

Scheduled Date	Aircraft	Departure Time	Arrival Time	Duration
28-Mar-12	B772	01:36 PDT	04:33 JST (+1)	10:57
27-Mar-12	B772	01:03 PDT	03:58 JST (+1)	10:55
26-Mar-12	B772	02:05 PDT	05:20 JST (+1)	11:15
25-Mar-12	B772	00:58 PDT	04:40 JST (+1)	11:42
24-Mar-12	B772	01:13 PDT	04:52 JST (+1)	11:39
23-Mar-12	B772	01:15 PDT	04:53 JST (+1)	11:37
22-Mar-12	B772	01:12 PDT	04:54 JST (+1)	11:42
21-Mar-12	B772	01:07 PDT	04:48 JST (+1)	11:41
20-Mar-12	B772	01:19 PDT	05:24 JST (+1)	12:05
19-Mar-12	B772	01:26 PDT	05:52 JST (+1)	12:26
18-Mar-12	B772	01:21 PDT	04:58 JST (+1)	11:37
17-Mar-12	B77W	01:39 PDT	04:55 JST (+1)	11:16
16-Mar-12	B772	01:27 PDT	04:34 JST (+1)	11:07
Average				11:32

Source: http://flightaware.com

All departures took place after 2400, so none of the flights shown would be permitted to take off to the east under the proposed restriction. Rescheduling the LAX departure to an earlier time to permit eastbound departures when the pilots request them would result in Tokyo arrivals even earlier than the current 0430-0530 time

[5] All Nippon Airways usually uses 777-200ER aircraft for its night service from LAX to Tokyo Haneda and 777-300ER aircraft for its midday service from LAX to Tokyo Narita. Occasionally ANA uses 777-300ERs for service to Haneda when 777-200ERs require maintenance.

frame, potentially inconveniencing travelers. Tokyo Haneda International Airport has no curfews that limit flight scheduling.

Exhibit 13 shows the average passenger load factor and cargo payload for the All Nippon flights which began in 2010.

Exhibit 13: LAX-HND Passenger Load Factor and Air Cargo Traffic

Aircraft Type	2009	2010	Jan to Jun 2011
Average Passenger Load Factor			
Boeing 777-200/200LR		74.1%	73.8%
Average Cargo Payload in Metric Tonnes			
Boeing 777-200/200LR		5.1	7.0

Source: USDOT T100 data

Other LAX Markets with Potentially Affected Flights

The six markets described above are expected to have a total of 53 potentially affected departures in 2018 if the proposed restriction is enacted. Six other international markets are expected to have a total of 12 additional potentially affected departures in 2018. These markets include: Guangzhou, Hong Kong, Melbourne, Beijing, Mexico City, and Nadi, Fiji. With the exception of Mexico City, all are long haul trans-Pacific flights.

3.0 Potential Airline Responses to the Proposed Restriction

Airlines could respond to the proposed restriction on eastbound departures in several ways. These include scheduling departures before midnight when eastbound departures are permitted, delaying departures until after 0630 when Over Ocean operations end or until the wind abates, cancelling flights, moving operations to another airport, reducing the amount of fuel on board at takeoff by utilizing tech stops to refuel en route to the final destination, or reducing payload to ensure safe take-offs when there is a limited tailwind. Airlines can be expected to choose the response that offers the lowest direct cost, minimizes disruption for their customers, and minimizes disruption to their operations.

The evaluation of potential airline responses is based largely on information provided by airlines that account for a large share of the non-conforming departures at LAX. Seven airlines that have had 346 non-conforming departures or 45 percent of all non-conforming departures since June 2000 gave detailed answers to the following questions about their operations at LAX:

- What is the largest tailwind component that is acceptable to take off on runway 25R at maximum gross weight? Please provide information for all the aircraft/engine combinations that your airline uses for long-haul service at LAX.
- How large is the weight penalty for each knot of tailwind component up to 10 knots?
- How much cargo does your airline usually carry on its nighttime trans-Pacific departures from LAX? Please indicate if this varies by season.
- Does your airline ever need to restrict the sale of seats or bump passengers when westbound flights face unusually strong headwinds over the Pacific? If yes, please estimate the revenue impact of each restricted seat or bumped passenger.
- The European Aviation Safety Agency (EASA) recommends a planning weight of 105 kg per adult passenger on large aircraft, including 88 kg per person and 17 kg for bags. How does this compare with the passenger weight estimates your airline uses for flight planning purposes?

Key factors that will influence airline responses to the proposed restriction include the infrequency of these events and the difficulty predicting when they will occur. Non-conforming departures represent an extremely small share of total aircraft operations at LAX. During the three year period from 2009 to 2011, the five airlines with the largest number of non-conforming departures had a total of 21,359 departures at LAX. Of these, only 77 or 0.36% were nonconforming.[6] During this time only three airline flights had over ten non-conforming departures: Qantas Flight 16 to Brisbane (15 non-conforming departures), Qantas Flight 108 to Sydney (14 non-conforming departures), and China Airlines Flight 7 to Taipei (11 non-conforming departures). Airlines will be reluctant to make major changes in schedules or operations because of events like this occurring on average 5 or fewer times per year.

Non-conforming departures usually take place in a very narrow window of wind conditions. Most aircraft can accept a 2 to 5 knot tailwind without difficulty and the control tower generally switches airport operations from Over-Ocean or West Flow to East Flow when tailwinds exceed 10 knots. Because it is difficult to anticipate when 5 to 10 knot tailwind conditions will occur, airlines are most likely to respond to the proposed restriction in a way that offers the maximum flexibility.

Passenger aircraft departures between 2400 and 0100 could be rescheduled to times before 2400 when eastbound departures would still be permitted, but this would make the arrival times in key Asian markets less convenient for passengers and make the timing of other segments of round trip operations less marketable. In addition, if flights rescheduled to depart shortly before midnight were delayed, they would then not be able to utilize east departures if desired, reducing the benefits of this potential response. Airlines have scheduled their LAX operations to maximize their marketability and to enhance airline operating efficiency. They would be unlikely to reschedule year-round departures of potentially affected flights when only a handful of those departures would be affected by the proposed restriction.

Delaying departures to times after 0630 when eastbound departures are permitted may create operational problems, since the increase in aircraft arrivals at LAX after 0630 could make it difficult to fit eastbound departures into the mix. Delaying departures would likely also lead to problems with

[6] . Source: LAWA records. Airlines with the largest number of non-conforming departures include Qantas, Korean Air, China Airlines, Cathay Pacific, and Japan Air Lines

aircraft crew hours of service regulations. Cancelling flights inconveniences passengers and leaves aircraft out of position. Airlines would be very unlikely to shift international passenger flights to other airports, because LAX is by far the largest international air passenger market on the West Coast. Exhibit 14 compares international jet passenger service at LAX to service at SFO and SEA for December, 2011. LAX serves almost twice as many international markets as SFO and almost four times as many as SEA, and has a similar advantage in weekly aircraft departures and seat-departures. Airlines would not move service away from the dominant West Coast international passenger market because of a restriction that affected only a small number of flights if there were other ways to meet the new requirements.

Exhibit 14: International Jet Passenger Service at LAX, SFO and SEA – December 2011

Airport	International Markets	Weekly Departures	Weekly Seats
LAX	57	868	207,616
SFO	31	442	101,977
SEA	14	97	24,744

Source: OAG schedule tapes, SH&E analysis

Airlines would also be unlikely to move all-cargo flights to other airports because of the proposed restriction. LAX is the center of the international air cargo market in southern California, and efforts to shift all-cargo flights to Ontario International Airport and other airports in the region have had very limited success because the international air freight forwarding community is concentrated near LAX, where forwarders can utilize passenger aircraft as well as freighters to carry their clients shipments.

Using tech stops to reduce the amount of fuel required at take-off would be costly and potentially disruptive. This response would involve landing fees and other airport charges at the intermediate airport, cause delays for passengers, and create crew and aircraft scheduling problems.

To comply with the proposed restriction, airlines would most likely decide to reduce aircraft take-off weight to ensure safe operations while maintaining their basic service schedule. The most cost-effective and least disruptive way

for airlines to reduce take-off weight will almost certainly involve off-loading cargo first and off-loading passengers and bags if a larger payload reduction is required. How much payload would have to be removed will be a function of the strength of the tailwind, the type of aircraft operated, temperature and barometric pressure, and airline company policies and practices.

The strength of the tailwind depends on wind velocity and direction. Usually, Runway 25R is the preferred runway for heavy aircraft taking off during Over Ocean or Westerly operations. If the wind is blowing from a 70 degree direction, the full force of the wind is applied as a tailwind. When the wind is blowing from a direction north or south of 70 degrees, part of the wind strength is applied as a tailwind and part as a crosswind. For example, on Runway 25R a wind blowing from 110 degrees at 6 knots produces a tailwind of 4.6 knots and a crosswind of 3.8 knots from left to right. Airlines operating at LAX have different policies and practices regarding the maximum tailwind permitted for takeoff. One major airline will accept tailwinds up to 10 knots, while another will not accept tailwinds over 5 knots.

Of the 736 records of non-conforming departures from June 2000 through December 2011, 402 have data on wind speed and direction. Not including 10 records where non-conforming departures took place even though there was a headwind on Runway 25R, the tailwind on Runway 25R when non-conforming departures took place averaged 5.5 knots. Exhibit 15 shows the distribution of tailwind velocity for the sample of records with wind data.

Exhibit 15: Tailwind Recorded for Non-Conforming Departures

Tailwind	Departures	Share
Under 2 knots	29	7.2%
2 to 4 knots	67	16.7%
4 to 6 knots	135	33.6%
6 to 8 knots	117	29.1%
Over 8 knots	54	13.4%
Total	402	100.0%

Source LAWA records, SH&E analysis

The different types of aircraft that are expected to operate non-conforming departures in the future have differing capabilities regarding take-off performance with tailwinds. Exhibit 16 outlines information provided by airlines operating at LAX about the greatest tailwind that is acceptable when operating at maximum take-off weight (MTOW) on Runway 25R, and the weight penalties incurred when operating with stronger tailwinds.[7]

Exhibit 16: Aircraft Performance with Tailwinds on Runway 25R

Aircraft	Max Tailwind @ MTOW (knots)	Penalty per Knot (lbs.)
747-400	2 to 7	6,600 to 8,800
777-200ER	0 to 1	2,500 to 4,400
777-300ER	5 to 8	5,400
A330-300	10	-
A380-800	9	4,700

Source LAX airline interviews

Depending on different airframe/engine combinations, 747-400s can take off from Runway 25R with tailwinds from 2 to 7 knots before incurring a weight penalty. There is a weight penalty of 6,600 to 8,800 pounds per knot for each knot of tailwind above that. Some 777-200ER aircraft cannot take-off from 25R at maximum take-off weight with any tailwind and incur a weight penalty of 2,500 to 4,400 pounds for each knot of tailwind. The 777-300ER and A380 aircraft are more tolerant of tailwinds, and can operate at maximum take-off weight with tailwinds from 5 to 9 knots.

The weight penalty that airlines would incur if the proposed regulation is enacted will depend not only on these performance factors but also on the actual weights at which the aircraft operate. For example, if a 777-200ER planned to take-off at 8,800 pounds below maximum take-off weight, it could operate with a two knot tailwind without any further payload penalty.

Because it is not possible to forecast the payload of each flight that would perform a non-conforming departure in the future, the exact amount of the payload penalty that airlines would face under the proposed restriction cannot

[7] A380 data are based on Runway 25L because A380s are not currently authorized to operate on 25R.

be calculated. Based on the historical pattern of Runway 25R tailwinds and the range of aircraft performance characteristics, two representative planning scenarios have been developed to provide reasonable estimates of the costs that the restriction could impose on airlines at LAX, one where airlines face an average payload penalty of 10,000 pounds per flight, and a second where they face an average penalty of 20,000 pounds per flight. Under the first scenario, airlines achieve the needed weight reduction by off-loading cargo and excess bags. Under the second scenario, passenger flights reduce weight by reducing passenger loads as well as cargo, while all-cargo flights off-load additional cargo.[8]

[8] The combined weight of one passenger and bags for planning purposes is 105 kg or approximately 230 pounds, following the EASA planning standard.

4.0 Potential Costs of the Proposed Restriction

Airlines would be able to maintain their current schedules and meet the requirements of the proposed restriction by reducing payload and aircraft take-off weight to compensate for mild tailwinds, but will lose cargo and passenger revenue as a result. Cargo revenue currently has three main components: the base cargo rate, fuel surcharge, and security surcharge. Exhibit 17 shows representative rates and surcharges to the three market areas that potentially affected flights serve. Air cargo rates are highly competitive and fluctuate substantially depending on market conditions, volume discounts, seasonality and other factors.

Exhibit 17: Representative Air Cargo Rates and Surcharges: $ per Kg, Winter 2011-2012

Market Area	Base Rate	Fuel Surcharge	Security Surcharge	Total
Asia	$0.95	$1.00	$0.15	$2.10
Australia Pacific	$2.75	$1.00	$0.15	$3.90
Latin America	$1.35	$1.00	$0.15	$2.50

Source: SH&E analysis

The base rate to many Asian markets is under $1.00 per kilo because of ample westbound air cargo capacity, and typical airline fuel and security surcharges contribute over half of the westbound cargo revenue to many of these markets. Rates are higher to Australia/Pacific markets because of a better balance of air cargo demand and supply, while rates to Latin America are higher than many Asian rates despite being much closer. Air cargo is expected to remain highly competitive in most markets, and airline cargo rates are not expected to show any substantial growth in constant dollars between 2012 and. 2018.

Exhibit 18 shows the airline cargo revenue potentially lost per year when airlines off-load cargo pounds in order to comply with the proposed restriction. It should be emphasized that this is a planning estimate, and it is possible that airlines might choose to reduce aircraft take-off weight by a greater or lesser amount to operate safely with tailwind conditions.

Exhibit 18: Potential Airline Cargo Revenue Lost per Year under the Proposed Restriction

Market Area	Affected Flights		Revenue per Kg	Scenario 1 10,000 lb	Scenario 2 20,000 lb
	Passenger	All-Cargo			
Asia	30	13	$2.10	$409,594	$533,425
Australia Pacific	21		$3.90	$371,492	$371,492
Latin America		1	$2.50	$11,340	$22,680
Total	51	14		$792,426	$927,597

Source: SH&E analysis

Of the 65 potentially affected flights, 43 are to Asian destinations, 21 to Australian or Pacific destinations, and one to Latin America. Under Scenario 1, passenger and all-cargo flights comply with the proposed restriction by off-loading 10,000 pounds of cargo. Under Scenario 2, the 14 all-cargo flights off-load an additional 10,000 pounds. The cargo revenue associated with the payload reduction is $792,000 per year under Scenario 1 and $928,000 per year under Scenario 2. The affected airlines are not likely to lose all this cargo revenue, since these airlines operate daily or double-daily service to most of the affected markets, and most or all of the off-loaded cargo can probably be accommodated on later flights. For this reason the estimate of revenue lost represents an upper bound of the potential impact on airline cargo revenues.

Exhibit 19 describes the potential impact on airline passenger revenues.

Exhibit 19: Potential Airline Passenger Revenue Lost per Year under the Proposed Restriction

Market Area	Affected Flights		Revenue per Pax	Scenario 1 10,000 lb	Scenario 2 20,000 lb
	Passenger	All-Cargo			
Asia	30	13	$500	$0	$660,000
Australia Pacific	21		$800	$0	$739,200
Latin America		1		$0	$0
Total	51	14		$0	$1,399,200

Source: SH&E analysis

Under Scenario 1 there is no impact on passenger revenue, since the required take-off weight reduction is accomplished by off-loading cargo. Under Scenario 2, 44 seats are blocked on each of the 51 affected passenger flights. The estimated revenue per seat is $500 to Asian markets and $800 per seat to Australia Pacific markets. The total potential reduction is airline passenger revenue is estimated to be $1.4 million per year.

Exhibit 20 shows the net present value of the potential reduction in airline cargo revenue for five year (2013-2017), ten year (2013-2022), and twenty year (2013-2032) periods under the two planning scenarios. Under the first scenario, passenger and cargo rates in constant dollars remain flat as competition balances the increase in demand associated with future economic growth. Under the second scenario, airlines achieve an average 3.0% annual growth in rates. The standard Office of Management and Budget discount rate of 7% is used for both scenarios.[9]

[9] OMB Circular No. A-94 Revised

Exhibit 20: Net Present Value of Potential Reduction in Airline Revenue

	Scenario 1 Off-load 10,000 lbs.	Scenario 2 Off-load 20,000 lbs.
No Increase In Airline Yields		
NPV 5 years	$3,249,000	$9,591,000
NPV 10 years	$5,566,000	$16,430,000
NPV 20 years	$8,395,000	$24,782,000
3% Annual Increase In Airline Yields		
NPV 5 years	$3,539,000	$10,448,000
NPV 10 years	$6,465,000	$19,084,000
NPV 20 years	$10,881,000	$32,122,000

Source: SH&E analysis

Looking at a 20 year period with no increase in constant dollar airline rates, the net present value of the potential reduction in airline revenue ranges from $8.4 to $24.8 million, depending on the airline decision to reduce payload by an average of 10,000 or 20,000 pounds per departure. If airlines succeed in achieving 3.0% annual growth in real passenger and cargo rates, the net present value of the potential revenue loss increases to between $10.9 and $32.1 million for the 20 year period. Another way to view the potential costs to airlines is in the context of the economic benefits that international air service at LAX generates. A 2007 study prepared by the Los Angeles County Economic Development Corporation (LAEDC) found the average daily overseas round trip in 2006 generated $623 million in economic output and supported 3,120 direct and indirect jobs with $156 million in wages.[10] Compared to the dollar value of economic benefits the potential costs of complying with the proposed restriction are small, but they will still be noticeable to airlines who continue to struggle with high fuel prices.

[10] The Economic Activity Dependent on Overseas Flights at LAX, prepared by LAEDC with HR&A and SH&E, August 2007

5.0 Potential Fuel and Emissions Savings from the Proposed Restriction

Enacting the proposed restriction would lead to a reduction in airline fuel consumption and carbon dioxide emissions. Exhibit 21 shows the projected non-conforming departures by aircraft type and market. Flights to Asian and Australia/Pacific markets account for most non-conforming departures.

Exhibit 21: Projected Non-Conforming Departures by Aircraft Type and Market Region

	Asia	Australia Pacific	Latin America	Total
Passenger Aircraft				
777-200/300	30	5		35
747-400		14		14
A380		2		2
All Cargo Aircraft				
747-400F	13			13
767F			1	1
Total	43	21	1	65

Source: SH&E analysis

Flight track analysis shows that departing to the east and circling back over the Pacific Ocean adds an average of 3.5 minutes to these flights, increasing the amount of fuel consumed and also adding to the carbon dioxide that these aircraft emit

Exhibit 22 shows the average fuel consumption per hour for the aircraft types projected to make non-conforming departures and the total fuel per year that would be saved by eliminating the additional miles flown due to non-conforming departures.

Exhibit 22: Additional Gallons of Jet Fuel Consumed per Year due to Additional Miles Flown

	Average Gallons per Hour	Non Conforming Departures	Extra Fuel Consumed
Passenger Aircraft			
A380	3,800	2	443
747-400	3,480	14	2,842
777-200/300	2,360	35	4,818
All Cargo Aircraft			
747-400F	3,480	13	2,639
767F	1,750	1	102
Total		65	10,845

Source: USDOT Form 41, Schedule P5.2, SH&E analysis

Aircraft fuel consumption per hour can vary substantially based on the weight of the aircraft, flight speed, the part of the flight cycle (e.g. climb, cruise, and descent), engine condition, and other factors. The values shown in Exhibit 22 represent averages based on US airline fuel consumption and flight hour data filed with the USDOT plus analysis of other industry sources. .

With an extra 3.5 minutes of flight time for each non-conforming departure to Asian and Australia/Pacific markets, the additional fuel consumption from non-conforming departures totals 10,845 gallons per year.

The price of jet fuel has been volatile in recent years and is expected to remain volatile for the foreseeable future. After accounting for data outliers, analysis of USDOT Form 41 data indicates that the US airlines serving Pacific region markets paid an average of $3.06 per gallon during the first nine months of 2011.

Exhibit 23 shows the 5, 10, and 20 year net present value of the airline fuel savings that could be achieved if non-conforming departures were prohibited. The exhibit also shows the net present value if the price of fuel increases by 50% to $4.59 per gallon. The net present value of potential savings at average 2011 fuel prices would equal $136,000 over the first 5 years. At $4.59 a gallon, no longer an unrealistic figure, the net present value for a 20 year period would equal $527,000.

Exhibit 23: Net Present Value of Potential Reduction in Airline Fuel Consumption

	Fuel at 2011 Price	50% Fuel Price Increase
NPV 5 years	$136,000	$204,000
NPV 10 years	$233,000	$350,000
NPV 20 years	$352,000	$527,000

Source: USDOT Form 41, Schedule P5.2, SH&E analysis

Prohibiting non-conforming departures would also reduce airline carbon dioxide emissions. Each gallon of jet fuel burned produces an average of 9.57 kilograms or 21.1 pounds of carbon dioxide.[11] By reducing airline fuel consumption by 10,845 gallons per year, prohibiting non-conforming departures would also reduce carbon dioxide emissions by approximately 229,000 pounds or 114 tons per year.

[11] Direct Emissions from Mobile Combustion Sources, US EPA, May 2008, Table B-2

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