Noise Monitor Test

A departing Gulfstream flies over the test monitor near the end of Runway 29.

Summary For ACAT Jan '16

Download All KMI

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Track Details + Reclassify



Presented by Mike Cooke, Aviation & Community Services Manager

In November of 2015, the Truckee Tahoe Airport District was asked by Vector Airport Solutions to act as a test location for integration of a noise monitor into their VNOMS software:





Noise icon opens sound meter results

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One sound meter using a solar powered base station and broadband connectivity to the **Vector server was placed near** the departure end of Runway 29 the most frequently used runway at KTRK. Noise events were integrated into the user interface of the software so sound levels could be correlated to aircraft operations.

Sound Meter





This is a Phenom 300 departing Runway 29 following the Truck Four SID. The track is on the following page.

The time above 65dB was 22 seconds and the noise peaked at 87dB.

Technical Terms are on the last page for reference.



SAMPLE REPORT

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Noise Event Viewer

Flight Track

Phenom 300 departing **Runway 29 following the Truck Four SID.**

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Staff used the noise summary data in a few instances in response to noise calls. The complexity of the technical aspects of noise don't lend themselves to discussion with commenters.





Monthly

Home Airport Activity Live Flight Tracking Reports Noise Management Profile

Noise Event Counts	Periodic Noise	e Summaries							Export	how Summaries Show Even	nts
Airport: KTRK - NMS: VEC01 -	Date *	Site Code ¢	Event Count ‡	Event Duration \$	Event Leq 💲	Event DNL ¢	Leq ‡	CNEL ‡	DN	+ Percent Operation	nal ¢
	10/1/2016	VEC01	18	317.4	52.0	52.0	53.6	56.6	55.1	99.97	
Monthly - < Oct 2016 - >	10/2/2016	VEC01	10	212.7	46.4	46.6	51.1	53.9	53.7	99.97	
	10/3/2016	VEC01	12	209.6	52.2	53.8	53.9	56.4	56.3	99.97	
O Grouped ● Stacked ● Aircraft 10/1/16 10/2/16 10/3/16	10/4/2016	VEC01	30	552.0	51.7	51.6	53.7	55.5	55.2	99.97	
	10/5/2016	VEC01	26	462.3	53.8	53.7	54.7	56.3	56.1	99.97	
	10/6/2016	VEC01	19	335.3	48.8	48.6	51.0	54.0	53.6	99.97	-1
10/4/18	10/7/2016	VEC01	26	490.4	52.9	52.8	54.1	56.4	56.2	99.97	
10/6/16	10/8/2016	VEC01	19	287.7	51.7	51.6	53.0	55.1	54.9	99.97	
10/8/16	10/9/2016	VEC01	32	507.6	56.3	56.2	56.9	57.6	57.5	99.97	=
10/10/16	10/10/2016	VEC01	23	392.1	51.1	51.0	53.2	55.2	55.0	95.80	=
10/12/16	10/11/2016	VEC01	11	187.8	50.1	49.9	52.8	55.0	54.7	99.95	-
10/13/16	10/12/2016	VEC01	23	410.5	51.4	52.2	53.7	56.6	56.1	99 97	-
10/15/16	10/13/2016	VEC01	17	295.3	51.8	51.6	54.3	56.4	56.3	99.97	-
10/17/16	10/14/2016	VEC01	52	920.9	49.4	53.0	54.6	59.9	59.8	99.97	-
10/19/16	10/15/2016	VEC01	35	417.3	42.2	44.3	59.0	55.5 E4.9	55.0 EA C	00.06	
10/20/16	10/15/2016	VECUI	23	417.5	43.3	44.5	52.5	54.0	54.0	99.96	
10/22/16	10/16/2016	VECU1	17	308.3	46.5	46.9	51.7	56.4	55.7	99.97	
10/24/16	10/17/2016	VEC01	17	311.5	47.7	47.6	51.3	53.9	53.5	95.80	
10/26/16	10/18/2016	VEC01	31	656.5	53.2	53.1	54.7	57.2	57.1	99.96	
10/27/16	10/19/2016	VEC01	26	476.0	52.1	52.0	53.2	55.1	54.9	99.96	
10/29/16	10/20/2016	VEC01	46	880.4	54.1	54.0	55. <mark>4</mark>	57.0	56.8	99.97	Ξ.

0 5 10 15 20 25 30 35 40 45 50 Oct 2016: Total Event Duration (s): 11,490.9 Leq: 53.3 CNEL: 55.9 DNL: 55.6 Event DNL: 51.3

Total Events: 629



Sample Report

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10/27/16 10/28/16 10/29/16 10/30/16 10/31/16

Reports suggest contours are accurate

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ACAT and the Board have reviewed the use of noise monitors in the past and never initiated the process to procure and install a network of monitors. This was the first "test" over a broad time period.

Key factors in building a network are the number of monitors required, locations and site leases, power and communications to the sites, conflicts with ambient noise sources, and additional staff and professional services to maintain the system.

Noise Monitor Considerations & Discussion

Thank You!

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Decibels (dB) measure sound levels. They are logarithmic expressions, so it is important to understand increases in dB levels are exponential *so the differences in levels are substantial*.

Community Noise Equivalent Level (CNEL) is a weighted average

of noise levels over time. It is used to compare the noisiness of neighborhoods. CNEL is frequently used in regulations of airport noise impact on the surrounding community. Noise contours depict average levels and allow planner to ensure compatible land uses around airports.

Sound Equivalency Level (SEL) is the total measurement of sound energy using a reference duration of 1 second. SEL allows for comparisons between transients noise with differing time durations.

Leq is the sound equivalency level; it is an average over the sampled period. **Lmax:** The highest point of sound energy measured during the sample period.

Sound & Noise Terms

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