

**GLOSSARY OF TERMS**

**Decibel** - The standard unit of measurement of sound pressure is the Decibel (dB); it is the logarithmic unit of sound intensity. A logarithmic scale is used because of the difficulty in expressing such large numbers. One decibel is actually an exponent to the reference point of 20 micro Pascals or about .000000003 pounds per square inch. Thus, 65 decibels is that amount to the 65<sup>th</sup> power.

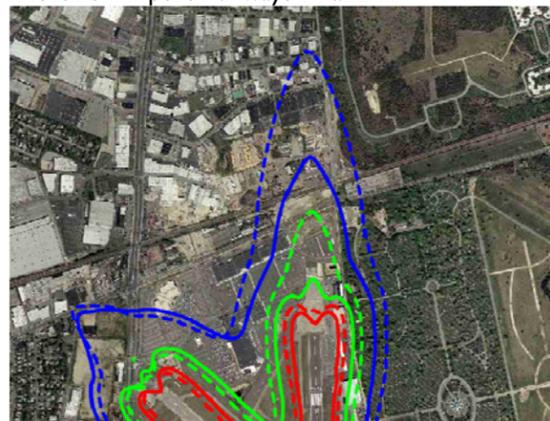
**dBA** - The most common decibel weighting is the A-weighted noise curve. The A-weighted decibel scale (dBA) describes frequencies in a manner approximating the sensitivity of the human ear. In the A-weighted decibel, everyday sounds normally range from 30 dBA (very quiet) to 100 dBA (very loud). Most community noise analyses are based upon the A-weighted decibel scale

**DNL**- Day Night Noise Level. The DNL index measures the overall noise experienced during an entire (24-hour) day. DNL calculations account for the single event levels of aircraft, the number of aircraft operations and a penalty for nighttime operations. In the DNL scale, noise occurring between the hours of 10 p.m. to 7 a.m. is penalized by 10 dB. This penalty was selected to account for the higher sensitivity to noise in the nighttime and the expected further decrease in background noise levels that typically occur at night. DNL is specified by the FAA in Federal Aviation Regulation Part 150 to be used for community and airport noise assessment.

**INM** - The FAA's Integrated Noise Model (INM) models civilian and military aviation operations. The original INM was released in 1977. The latest version, INM Version 7.0a, was released for use in September 2008 and is the state-of-the-art in airport noise modeling. The program includes standard aircraft noise and performance data for over 100 aircraft types that can be tailored to the characteristics of specific individual airports.

**COMPARISON OF 2007 TO 2008 DNL 65 NOISE CONTOUR**  
**Solid blue line = 2008 DNL 65 Dotted blue line = 2007 DNL 65**

North of Airport-Runways 14 and 19



South of Airport-Runways 1 and 32



*Long Island's Executive Airport*



The focus of this Executive Summary is to give a snapshot of the aircraft activity at Republic Airport for calendar year 2008. The full Noise Contour Update Report is available at the Republic Airport Administration Office located in the Main Terminal building. The Executive Summary is also available on the Airport's website, [www.republicairport.net](http://www.republicairport.net).

**CALENDAR YEAR 2008 AIR TRAFFIC TOTALS**

According to air traffic counts at Republic Airport, there were 110,974 operations in 2008. An operation is defined as a takeoff or landing. This is 278 more than occurred in 2007, or an increase of less than 1%. Single engine operations increased by 6% over 2007 which can be attributed to an increase in training operations and modest reductions in fuel costs. Twin Engine propeller operations decreased by 9%; Turboprop activity decreased by 4%, and helicopter activity increased by 2%. Jet aircraft activity decreased by 16%. The decrease in jet traffic is most likely the result of business activity on Long Island, and in the case of 2008, the local and national economic climate. While the total number of jet operations decreased the number of louder older Stage 2 corporate jets also decreased.

Aircraft Class	Total Departures & Arrivals	Total Touch & Go's Missed App.	Total Operations	Change 07/08	Total Operations
Jet	16,204	24	16,228	-16%	
Turboprop	5,016	12	5,028	-4%	
Twin Engine Propeller	5,710	600	6,310	-9%	
Single Engine Propeller	48,268	27,968	76,236	6%	
Helicopters	5,890	1230	7,120	2%	
Blimps	50	2	52	-66%	
<b>SUB TOTALS</b>	<b>81,138</b>	<b>29,836</b>	<b>110,974</b>	<b>0%</b>	

**DAY NIGHT AVERAGE SOUND LEVEL**

Aircraft operations that occur throughout the year are averaged and computed to determine the DNL, or Day Night Average Sound Level Noise Contours. DNL is the FAA-accepted criteria that depicts the noise from airport operations and averaged over a 365 day period. The DNL noise contours presented in this document were calculated using FAA Integrated Noise Model Version 7.0a. DNL is in part determined by the time of day aircraft operate. Aircraft that operate during nighttime hours are considered more intrusive than daytime operations. Aircraft operations during the hours of 10 p.m.—7 a.m. are weighted 10 decibels higher than operations between 7 a.m.—10 p.m. This report depicts the 75, 70, and 65 DNL contours. The 65 DNL noise contour is the level of significance that the FAA uses to determine noise exposure to the surrounding communities.

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**2008 Noise Exposure Map**

The Noise Exposure Map (NEM) is the combination of the DNL noise contours with the proper basemap, such as an aerial photograph. The noise exposure map in this report shows the 65, 70 and 75 DNL noise contours. While the three contours are shown, the focus of this report is the 65 DNL noise contour and its relation to past contours as well as number and type of structures in the 65 DNL contour and the number of square miles in the contour.

The 2008 Noise Exposure Map does not have any incompatible land uses. The land uses in the existing 65 DNL contour include cemeteries, airport property, light industrial, and roadways. As part of the Airport's Rules and Regulations, the Airport has been resolute not to have the 65 DNL encroach on residential land uses. Since 1983 when the first NEM was completed for the Airport, the 65 DNL contour has not encroached on residential land uses.

The square miles in each noise contour are as follows:

- **DNL 65— 0.88 Square Miles**
- DNL 70— 0.48 Square Miles
- DNL 75— 0.66 Square Miles

In comparison to the 2007 NEM, the 65 DNL contour was reduced by 0.08 square miles; the 70 DNL decreased by 0.07 miles and 75 DNL contour decreased by 0.006 miles. In the areas north of the arrival end of Runway 19, the contour is shorter, but still in the same contiguous industrial area. The contour off the arrival end of Runway 14 is the same size and shape as the 2007 NEM; it does not cross Route 24. To the south of the Airport, off the arrival end of Runway 1, the contour changed in shape similar to the north off the arrival end of Runway 19 in that the contour is shorter, yet still in the same contiguous area. Off the arrival end of Runway 32, the contour is located in the same area but is more rounded to the side of the runway.

**Noise Complaints**

In 2008, there were 341 noise complaints filed with the Airport through its noise complaint phone line filed by 125 households. The number of complaints in 2008 decreased by 62 from 2007, a 16% decrease. As with 2007, the area northwest of the Airport generated the majority of noise complaints, registering 204 of the 341 complaints, or 60% of all complaints. Complaints by time of day were 82% for day and 18% for night; all complaints for 2008 had a time associated with it. Jet aircraft operations generated 65% of the total noise complaints.

