

May 2011 Update- All things Aviation:



If you'd like additional information please contact the City.

STREL

As many of residents are aware, there have been numerous questions concerning the STREL. The "STREL" being the name given to an Area Navigation (RNAV) departure procedure implemented on March 10, 2011 for John Wayne Airport (JWA) by the Federal Aviation Administration (FAA). Accordingly, in an attempt to answer the continuing questions, you will find below a detailed discussion regarding the STREL. Some of what follows has been covered in other venues or in previous reports but it is important to be certain that correct information is provided to all concerned.

Changes Not Implemented by the City

Initially, contrary to what you may have read or been told, the STREL was put in place by the FAA. It was not at the request of the City of Newport Beach, the surrounding communities or JWA. The FAA is solely responsible for the vectoring and sequencing of aircraft within Southern California's airspace and on the ground within each airport. The primary responsibilities of Air Traffic Control are to ensure the safe and efficient operation of aircraft. Airspace control and management is the sole responsibility

of the FAA. Any change in departure or arrival flight paths can only be approved, and implemented by the FAA. The recent STREL procedure is part of the FAA's Next Gen Program and has evolved out of the DUUKE departure procedure originally implemented as part of Next Gen by the FAA in the fall of 2009.

Purpose

The Next Generation Air Transportation System (NextGen) is part of the FAA's plan to modernize the National Airspace System (NAS) through 2025. Through NextGen, the FAA is addressing the impact of air traffic growth by increasing NAS capacity and efficiency. As part of that Next Gen STREL was implemented and the further purpose to center aircraft departures over Newport Bay. But this does not mean that aircraft will fly exactly down the center of the Newport Bay. There has always been dispersion of flight tracks along Newport Bay. According to the FAA, implementation of an RNAV procedure should reduce the dispersion or "fanning" of tracks, but will not result in a single track down the exact center of Newport Bay. However, so far the tracks that JWA and the City have monitored along with on the ground observations indicate that the carriers for the most part are passing over Noise Monitor 7, which is the waypoint designated by the STREL procedure.

No Turns before the Coast

The FAA notes that passing over the shoreline is the earliest that aircraft departing JWA are allowed to turn. Moreover when the turns are initiated is controlled by the air traffic controllers not at the request of the air carrier(s). As regards any early turns farther south back towards the coast those are purely a function of air traffic in the area and the need for separation. In air traffic control parlance, separation is the name for the concept of keeping an aircraft in a minimum distance from another aircraft to reduce the risk of those aircraft colliding, as well as prevent accidents due to wake turbulence. More importantly, JWA's flight tracking system does not show any commercial aircraft turning east before the coast. Residents can check flight tracks by using JWA's "Airport Monitor" feature found at:

<http://www.ocair.com/CommunityRelations/AirportMonitor.aspx>. So far there is no proof that Commercial Carriers are ignoring the STREL departure procedure, rather they appear to be flying down the bay; past the peninsula and over the ocean before initiating their turns.

Not all Aircraft are Using the STREL

Only those aircraft flying to destinations east of Las Vegas and which are equipped with the required avionics are able to use the STREL procedure. Currently, approximately 50% of all commercial departures - about 50 per day - are using the STREL. All other commercial aircraft are flying the traditional Standard Instrument Departures (CHANNEL ONE and MUSEL SIX). So for 50% of departures at JWA, there has been no change in departure procedure. Remember one of the purposes of the Next Gen procedure was to make movement of aircraft in the system more efficient. One of the STREL's purposes is to make movement of aircraft moving east of Las Vegas more efficient.

STREL and Power Cutback

Some have suggested that as a result of STREL, Commercial Carriers departing the airport no longer are utilizing any power cut back in an attempt to meet the requisite decibel readings at each of the seven noise monitors that monitoring departures. Initially STREL has no effect on how the carriers meet the noise requirements. Generally speaking so long as the Commercial Carrier meets the requisite noise monitoring readings upon departure, they can depart from JWA. STREL has not changed this requirement. In 1993, as a result of a change at JWA, a Noise Abatement Advisory Circular- AC 91-53A was issued. It provides general guidance for departure procedures at JWA. Ultimately, airlines develop their own procedures according to their operations specifications for each individual aircraft. This is especially true at JWA since airlines have to adhere to the single event noise restrictions at the various monitors in the areas. This has not changed. Currently a majority of the commercial carriers at JWA utilize some form of power cutback procedure; the depth and timing vary from carrier to carrier.

So I'm Not Seeing or Hearing Airplanes¹

No one is suggesting that you, the resident, are not seeing or hearing commercial departures from JWA. However, so far the monitoring of the carriers indicates that they are in fact flying the STREL as designated. But be assured the City continues to monitor the departures and reports those results.

JWA April 2011 Statistics *April Shows another Decrease*

On May 17, JWA reported that airline passenger traffic at John Wayne Airport decreased in April 2011 as compared to April 2010. In April 2011, the Airport served 722,815 passengers, a decrease of 3.0% when compared to the April 2010 passenger traffic count of 745,302. Commercial aircraft operations decreased 2.9%, while Commuter aircraft operations decreased 12.5% when compared to the levels recorded in April 2010. In addition, total aircraft operations decreased in April 2011 as compared to the same month in 2010. In April 2011, there were 17,007 total aircraft operations (take-offs and landings), a decrease of 1.2% when compared to 17,212 total aircraft operations in April 2010. For a more complete report proceed to:

<http://www.ocair.com/NewsRoom/News/AirportStats.aspx>

JWA Terminal Facilities

While JWA has seen the airline options for travelers shrink as its facilities have grown, JWA airport officials say the new terminal was planned with long-range forecasts of increasing passenger demand for air service. The sputtering economy and airline consolidations may have put a temporary dent in the timetable, but they believe that the demand will rise to match the supply. The new Terminal C will feature Orange County's first international customs and immigration facilities. Airport officials have said they have discussed several options for international flights, but no plans have yet been announced involving specific airlines.

Southwest Airlines will take up the majority of the space in the new terminal.

¹ See the later discussion of Noise 101A regarding noise and perception thereof.

While Southwest does not currently fly international routes, it has completed its merger with Air Tran, which flies to Mexico. Southwest is also partnered with Mexico-based budget carrier Volaris Airlines.

Gates Renumbered

Effective May 17, passenger gates and baggage carousels in John Wayne Airport's Terminal were renumbered, in preparation for the opening of Terminal C in November 2011. Existing gates and baggage carousels are being renumbered now to prepare for the addition of six new gates, three new baggage carousels and two new commuter terminals.

JWA Solicits Bids for Air Transportation User Study

On April 26, the County opened bidding on an Air Transportation User Study. The bidding closed on May 12 at 4:00 PM. The winning bidder will conduct an air transportation user study for Orange County with the project to be completed by September 16, 2011 and another two years later. It appears that this study will be similar to JWA user surveys conducted in the past, i.e., identifying who and why people use JWA.

LAX continues to lead area recovery

Los Angeles International Airport saw a 2.9 percent increase in passenger traffic in March, when compared to the same month in 2010. Year-to-date, LAX volume is up by 2.6 percent. LA/Ontario Airport saw a 1.3 percent improvement in March. Year-to-date, the airport is ahead by 0.6 percent. At the same time, as reported last month, John Wayne Airport saw a 0.7 percent increase in March volume while year to date JWA was down by 0.1 percent. For April 2011, JWA saw a decrease of 3 percent in April and YTD a decrease of .9 percent.

State Senate Committee Discusses ONT Authority Bill

On May 3rd, an amended bill transferring control of LA/Ontario International Airport from the city of Los Angeles to a regional airport authority moved closer to receiving approval from the state Senate. The state Senate Transportation and Housing Committee unanimously agreed to move Senate Bill 446 to the Senate Appropriations Committee during a hearing held at the state Capitol on May 3rd. The bill authorizes and encourages the authority to enter into an agreement with Los Angeles to facilitate the transfer of management and operational control of ONT from Los Angeles to the authority. However, in order for the bill to be approved it needs to be passed by the Senate and Assembly by Sept. 3rd. The bill, which creates an Ontario International Airport Authority, was amended so that the authority would be comprised of four directors from the city of Ontario and three directors from the County of San Bernardino.

Will Riverside Enter the Fray?

On May 9, the County of Riverside announced that it may want in on deciding the fate of Ontario airport. Riverside County Supervisor John Benoit says he wants his county to be involved in whatever authority is eventually formed, in a model akin to the Burbank-Glendale-Pasadena Airport Authority that owns and operates Bob Hope Airport in Burbank.

High Fuel Costs

Spiraling fuel prices in the first quarter slammed Delta Air Lines, and the carrier is ready to cut flying to places where it can't cover the cost of fuel with more fare hikes and by parking planes, CEO Richard Anderson said April 27. The previous week, United Airlines made a similar announcement. Meanwhile, the average price of a ticket on a U.S. airline, including baggage and other fees, was 14 percent higher in March than a year ago. That's the biggest 12-month increase and the highest average price for March in at least a decade. This is despite the fact that fuel prices in March were just 1.5 percent higher than they were three years ago while fares are up 10 percent.

The five biggest U.S. airlines have reported a combined loss of more than \$1 billion for the first three months of the year, despite having raised fares seven times during the period. Soaring jet fuel prices are the big culprit, though big winter snowstorms that snarled traffic, especially in the East, and Japan's earthquake that resulted in fewer passengers contributed to losses.

On the global scale, in a report released May 3rd, some 55 per cent of airline chief financial officers (CFOs) surveyed expected deterioration in operating conditions and a squeeze on profit margins due to a combination of factors such as political unrest, natural calamities & weather disruptions, rising unit costs and a squeeze on yields. At the same time some of the individual results for air carriers were:

American Airlines' April traffic up 2.7 percent while capacity grows 3.9 percent and load factors resulting in the monthly load factor dropping to 81.1% compared to 82.0% in April 2010;

US Airways' April traffic up 4.3% versus April 2010 and capacity up 4.4% versus April 2010. Meanwhile the load factor was 82.6% for April 2011, down by 0.1 points versus April 2010.

Frontier Airlines' April traffic increased 2% while capacity was down 1% while April's load factor was 84% compared to 82% in the same month last year.

Meanwhile the Air Transport Association (ATA) on May 17, predicted modest domestic growth for the industry this summer, while predicting record international growth.

ATA President: U.S. AVIATION IS AT AN INFLECTION POINT

On April 29, the new Air Transport Association President delivered an aggressive state of the airlines speech in which he declared US Aviation is at an inflection point. It was frankly a call to arms for the aviation industry and perhaps a blueprint of what is to come concerning issues like further deregulation and so called global competitiveness.

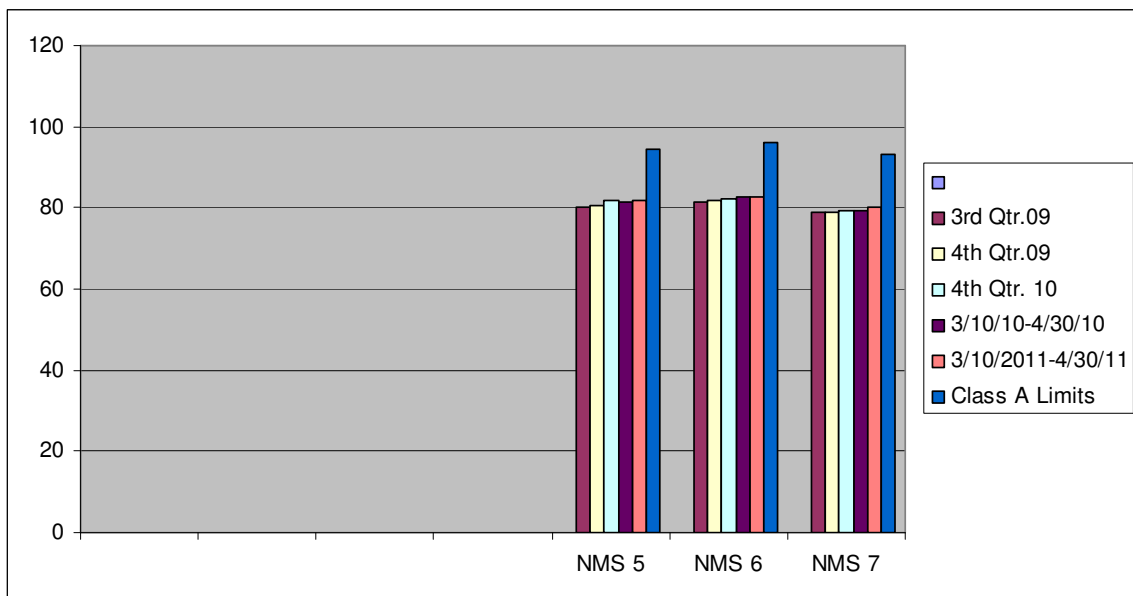
Noise 101-A

Additional questions have been asked or raised about departures of certain aircraft at the airport, suggesting that there is a great difference in the Single Event Noise Levels in the last few weeks. What follows is a random sampling for Southwest Airlines, the major carrier at the airport over the last two years and the most recent period of March 10, 2011 thru April 30, 2011, compared for the same period in 2010. Please note that the noise readings are normally done on a quarterly basis only for comparisons sake. The first chart is the Class A, or so called noisy aircraft at the airport. Class A aircraft are regulated by the JWA Settlement Agreement by number, i.e., 85, and amount of noise at the Noise Monitoring Stations, which you will find listed in the respective charts.

Southwest Airlines Class A Comparisons at the Noise Monitor Stations 5-7

Class A-SWest	Single Event	Noise Readings	NMS 5	NMS 6	NMS 7
3 rd Qtr.09			80	81.2	78.7
4 th Qtr.09			80.7	81.7	78.8
4 th Qtr. 10			81.8	82.4	79.4
3/10/10-4/30/10			81.5	82.7	79.5
3/10/2011-4/30/11			81.8	82.5	80.1
Class A NMS Limits			94.6	96.1	93.0

Southwest Class A Comparisons:

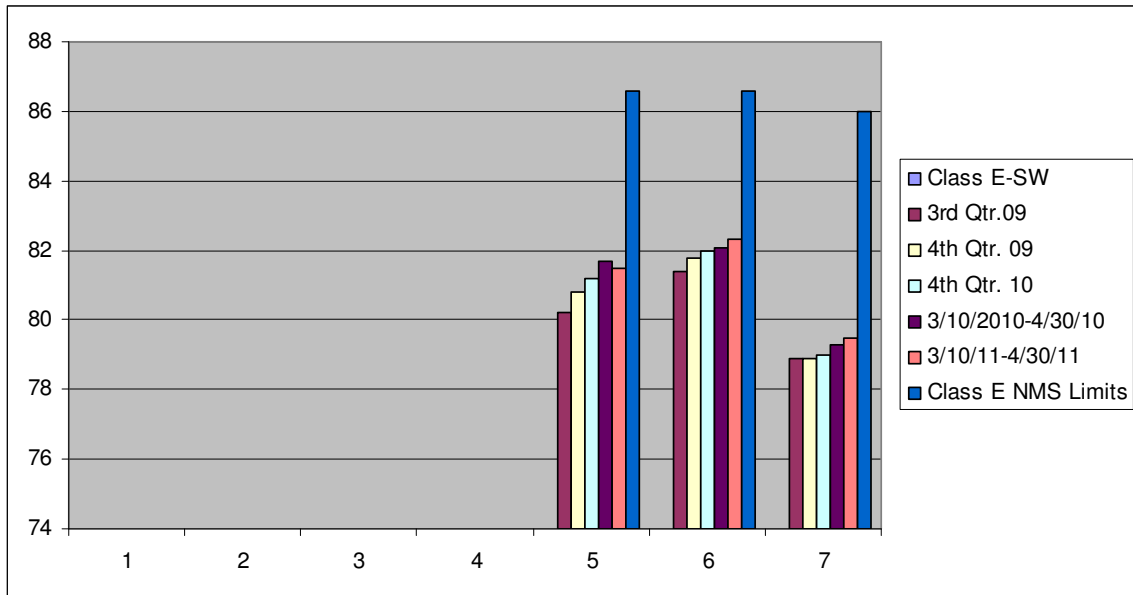


Next you will find a similar chart for Class E, aircraft which are regulated pursuant to the JWA Settlement Agreement, not by number of Class E departures but by the amount of noise at the respective Noise Monitors and the total MAP or Million Air Passengers per year, currently 10.8 MAP.

Southwest Airlines Class E Comparisons at the Noise Monitor Stations 5-7

Class E- SW 3 rd Qtr.09	80.2	81.4	78.9
4 th Qtr. 09	80.8	81.8	78.9
4 th Qtr. 10	81.2	82	79
3/10/2010-4/30/10	81.7	82.1	79.3
3/10/11-4/30/11	81.5	82.3	79.5
Class E NMS Limits	86.6	86.6	86.0

Southwest Class E Comparisons:

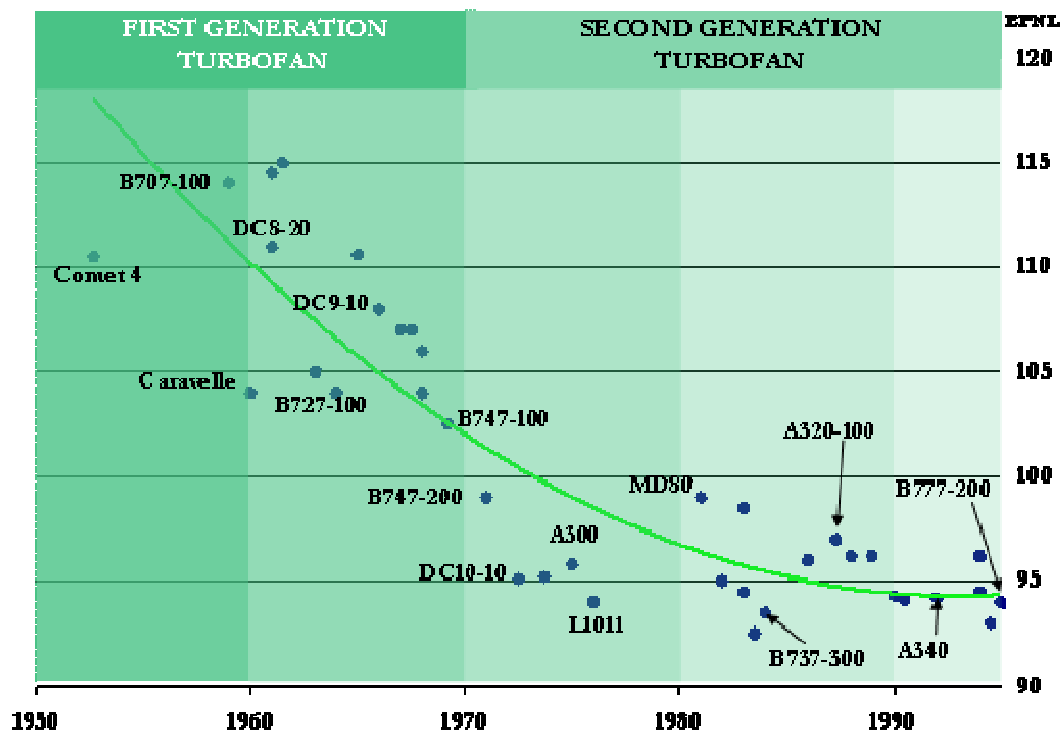


The Evolution of the Jet Engine

Continually questions have been raised about the noise of Jets taking off at JWA. For those of you who can't get enough of the departures you can go to: <http://www.therecordist.com/free-sfx> and click on the appropriate aircraft and departure for a sense of the sounds. In addition, looking towards the future and the question of whether jet noise may become quieter, the following offers some glimmer of hope:

Newer aircraft currently being manufactured are much quieter than older aircraft and many already meet stage 4 requirements recommended recently by the International Civil Aviation Organization (ICAO). For example, the new Boeing 777 is one-tenth quieter than the older Boeing 727-200, yet it can carry twice the number of passengers. One need only look to JWA and the MD-80's which are for the most part no longer in use at the airport but 25+ years ago were heralded as the new quiet plane on the block.

The advent of high-bypass turbofan engines in the 1970's marked a significant improvement in aircraft noise emissions (15-20dB reduction). The chart below illustrates the significant gains made in source noise reductions since the entry of second-generation turbofan engines to the industry.



The National Aeronautics and Space Administration in collaboration with industry is conducting promising research under the Quiet Aircraft Technology (QAT) program, which aims to reduce the perceived noise levels of future aircraft by 10dB within 10 years and by 20dB within 25 years. However, it is important to note that airline passenger aircraft have a typical life expectancy of about 25 years and that it takes many years for new technology to evolve from laboratory experimentation to production, and

from production to meaningful market deployment.

Human Response to Noise

Human response to single-event jet aircraft noise is best represented in terms of Effective Perceived Noise Level, expressed in units of EPNdB. This unit of perceived noise takes into account the actual sound energy received by a listener, the ear's response to that sound energy, the added annoyance of any pure tones or "screeches" in the noise, and the duration of the noise. In any discussion of aircraft noise abatement, a key consideration is the difference in noise level which a listener is able to perceive and find meaningful, in terms of both the single event and the cumulative exposure. Few humans can detect differences between single events of aircraft noise of less than about 5 EPNdB. However, an increase of 10 EPNDS is usually perceived as a doubling in loudness. The fact that people's perception of noise varies logarithmically with sound intensity results in some interesting relations. Note that as intensity is reduced by 50% the SPL changes by $10 \log I_1/I_2 = -3\text{db}$. This is why noise reduction is a challenge. To make something seem about half as noisy requires a reduction in the Sound Intensity Level (SPL) by about 10 db. This is a reduction in intensity of about 90%.

Factors Which Affect Noise

Some time ago, the City conducted an extensive study which identified various factors that affect noise at JWA. They bear repeating:

Departure Climb Profiles: Each airline has devised a departure procedure consistent with the aircraft departing the airport. As long as an airline can meet the Single Event Noise Limits at the Noise Monitors at departure, they can depart as such. The County provides a continuous source of noise data in the form of its quarterly noise reports.

Aircraft Performance/Climb Rates- The climb rate and flight profile of departing aircraft will vary considerably based on aircraft type and the other factors identified in this section. New, modern aircraft (e.g. Airbus A320, Boeing 737-800, 757) have higher-thrust engines. In general, the higher the altitude, the less noise will likely be perceived by the receiver on the ground. The Class E aircraft have higher altitudes for the most part

and therefore less noise to the community below. At the request of the City and with the cooperation of the County, the County has in the past provided a series of reports concerning altitudes and showing where planes fly.

Departure Ground Tracks: The particular departure track will affect noise. As the technology develops, new and better performance based navigation, such as Required Navigation Performance (RNP) will allow planes to fly a more precise path between two 3-dimensionally defined points in space. RNAV or area navigation and RNP systems are fundamentally similar. The key difference between them is the requirement for on-board performance monitoring and alerting. RNP is more precise and may ultimately lead to noise reduction in certain areas.

Airport Facilities- The facilities available for aircraft operations play a role in the amount of noise that is generated over a community. The major factors of an airport design which impacts the amount of noise over a community is the amount of property separating the runways from the noise sensitive areas in a community and runway length. As most of you know JWA has a single commercial runway which is only 5701 feet long and sits on less than 400 operational acres.

*Meteorological Conditions-*The propagation of aircraft noise is dependent on meteorological conditions including temperature, humidity, and wind. During warm temperatures, the air density (air molecules per cubic foot) decreases significantly, thereby reducing aircraft performance and lift. Aircraft noise is also more noticeable on cloudy days. Low ceiling cloud cover tends to reflect or reverberate aircraft noise downward off the clouds, thus confining it. This may or may not account for a number of people who have stated that on different days they do or do not hear the noise.

*Geographic and Topographic Conditions-*As sound energy spreads out over an increasingly larger area, the amount of noise decreases. Additionally, the noise from low-level aircraft operations are affected by absorption and deflection from the Earth's surface as well as by intervening objects like hills and buildings. In addition, areas located in canyons or with prevalent high terrain features create areas in which noise can echo. In a south flow, departing aircraft follow the Upper Newport Bay to the Pacific Ocean. The bay is located in a canyon and is several hundred feet lower than the airport elevation. Noise from departing aircraft may possibly echo in this area.

Airline Specifications and Air Space and Air Traffic Control Requirements also affect noise.

Environmental Group has given Notice of Proposed Suit against Aviation Fuel Suppliers

During the week of May 9, 2011, the Center for Environmental Health (CEH), an environmental group located in San Francisco, Calif., charged numerous aviation businesses in California, including aviation fuel suppliers and fixed base operators, with violating California state law for selling aviation gasoline, which contains lead. The notices indicate CEH's intention to file a lawsuit under state law, and also include a proposed settlement to stop the lawsuit that includes halting the sale of aviation gasoline and payment, to CEH, of 25% of any "civil penalty," of up to \$ 2.7 million, assessed. CEH has filed a 60 day notice of intention to sue pursuant to California's proposition 65.

Obviously, the National Air Transportation Association (NATA) has already expressed its concern about the suit and views the suit as an attempt to use California state law to shut down the entire piston-engine general aviation industry in California through a suit that involves a private organization seeking monetary damages. In addition they have noted that any environmental concerns arising from the sale and use of aviation gasoline belong under the purview of the U.S. Environmental Protection Agency (EPA) and Federal Aviation Administration (FAA). Currently, both of these agencies, along with numerous industry stakeholders, are engaged in a collaborative process to address the issues arising from the use of leaded aviation gasoline.