Aviation Technology Solutions

SUBURBAN O’HARE COMMISSION

CHICAGO O’HARE INTERNATIONAL AIRPORT
FINAL NOISE STUDY REPORT

JDA Aviation Technology Solutions
4720 Montgomery Lane Suite 950
Bethesda, MD 20814
301-941-1460
info@jdasolutions.aero

19 November 2015

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1. Background

a. Scope

The Suburban O'Hare Commission (SOC) commissioned this study to provide information SOC needs to advocate realistic and achievable remedial measures to protect their residents from the intense and frequent noise disturbances currently being experienced from ORD operations.

The scope of this study includes 3 Whitepapers documenting:

1. Noise Metrics – Historical Metrics and Significance Thresholds Versus Current Industry Science
2. Disconnect between INM Contours and Real World Actual Experienced Noise
    a. INM Noise Contour comparisons between ORD EIS baseline and OMP, today and revised OMP with recommended operational changes
    b. Real time sharing of noise data with community members
3. Recommended Operational Changes at ORD

The whitepapers are enclosed. While each of the papers recommendations should be considered in full, this report summarizes all of the recommendations.

2. Noise Metrics

Dr. Sanford Fidell, a world recognized and published leader in the science of noise impacts partnered with JDA Aviation Technology Solutions (JDA) to address noise metrics. Dr. Fidell has provided consulting services to community, airport and government agencies involved in aircraft noise controversies and assessments and disclosures of aircraft noise impacts and has consulted on land use planning related to aircraft noise regulation. He is active in international standardization efforts for prediction of aircraft, rail and road noise impacts.

Dr. Fidell's analysis examines the history, data, derivation, and rationale for the:

1. FAA's selection of DNL as its preferred measure of aircraft noise exposure; and
2. FAA's selection of the Ldn = 65 dB value as a threshold of significant noise impact.

The report also examines the utility of noise metrics other than DNL for defining the significance of aircraft noise impacts, and describes modern methods for assessing aircraft noise impacts on communities.

a. Summary of Principal Noise Metric Findings

The 1979 Aircraft Safety and Noise Act (U.S. Public Law 101-193) required the U.S. Secretary of Transportation to

1. Establish a single system of measuring noise, for which there is a highly reliable relationship between projected noise exposure and surveyed reactions of people to noise, to be uniformly applied in measuring the noise at airports and the areas surrounding such airports;

2. Establish a single system for determining the exposure of individuals to noise which results from the operations of an airport and which includes, but is not limited to, noise intensity, duration, frequency, and time of occurrence; and

3. Identify land uses which are normally compatible with various exposures of individuals to noise.

FAA responded to this Congressional mandate by adopting the "equivalent energy" family of noise metrics identified in EPA's 1974 "Levels Document" as its system of noise measurements, and by publishing its recommendations for compatible land uses in 1985, in Part 150 of the Federal Aviation Regulations.

i. Basis for FAA Selection of Ldn = 65 dB as a Criterion of Significant Noise Impact

FAA's 1985 adoption of Ldn = 65 dB as a definition of significant noise impact, was not based on objective analysis or systematic scientific research.

FAA asserts that its *L*dn = 65 dB criterion for participation in noise mitigation efforts is based on a 1992 report describing a statistical relationship between noise exposure and the percentage of community residents highly annoyed by noise. Many subsequent studies have shown that the 65 dB value significantly understates the geographic extent, and hence the size of the population adversely impacted by aircraft noise. As explained further in this report, FAA's use of an annualized average DNL value of 65 dB has other flaws which render its definition of the significance of noise impact technically inaccurate.

To remain consistent with the current international scientific consensus, the FAA must reduce its definition of significant noise impact by about an order of magnitude, to Ldn ≈ 55 dB. Failure to do so will deprive populations of communities of average tolerance for aircraft noise of protection from exposure to highly annoying noise.

The noise exposure contours of the EIS for the OMP considerably understate the geographic extent of areas in communities and neighborhoods around ORD that are adversely impacted by aircraft noise. Full disclosure of these greater impacts in the EIS could have affected analyses of runway alignment alternatives in the EIS, and could affect ongoing decisions about future operations at ORD. Failure to acknowledge these greater impacts can exclude thousands of residents from eligibility for impact mitigation measures such as acoustic insulation.

ii. Varying Tolerances of Different Communities for Aircraft Noise Exposure

FAA's interpretive criterion for the significance of aircraft noise exposure applies only to a hypothetical community of average tolerance for aircraft noise. In reality, communities differ considerably from one another in the prevalence of annoyance induced by the same levels of noise exposure. If FAA wishes its criterion of significant noise impact to apply with uniform effect in different communities, the criterion must reflect community-specific differences in tolerance for noise exposure.

ORD-vicinity communities newly exposed to high levels of aircraft overflights are almost certainly less tolerant than average of aircraft noise exposure. Numbers of unique noise complainant addresses lodged from ORD-vicinity communities have increased greatly since the latest runway opening at O'Hare in 2013. Even an Ldn = 55 dB criterion for significant noise impact underestimates the extent of the significantly noise impacted population in a community of lesser than average tolerance for noise exposure.

The actual tolerance of a particular community for exposure to aircraft noise can be empirically quantified by means of a social survey. Such a social survey would permit estimation of a CTL value for ORD-vicinity communities that would permit better-informed decisions to be made about the significance of noise impacts resulting from ORD's runway reconfiguration project. It would also permit systematic and specific application of policy-based decisions about the percentage of a community that deserves protection from exposure to highly annoying aircraft noise to ORD-vicinity communities.

Absent performance of an ORD community-specific CTL study, the appropriate DNL criterion to delineate the geographic impact of adverse noise impact from O'Hare operations should be L_{dn} = 55dB.

The distinction between annoyance (an attitude) and complaints (a behavior) as indicators of community response to aircraft noise has in any event been rendered less important for regulatory purposes by a July 2013 D.C. Court of Appeals ruling. The ruling confirms that FAA has the authority to regulate flight paths on the basis of noise complaints, even with respect to areas outside the 65 dB DNL contour. In other words, the ruling indicates that FAA need not necessarily base its aircraft noise regulatory positions solely upon levels of aircraft noise exposure, but can also base them on documented aircraft noise complaints.

iii. Common Misunderstandings of DNL as a Noise Metric

DNL is a widely misunderstood and much-maligned measure of cumulative noise exposure. Much of the criticism that DNL attracts is technically ill-founded and misdirected. Similar criticisms would almost certainly be directed against any other decibel-denominated system of units used in aircraft noise regulation. Criticism of DNL per se is, in effect, shooting at the wrong target. DNL is so highly correlated with all other measures of noise that are potentially useful for aircraft noise regulation that its ability to predict community response to noise exposure cannot differ greatly from that of other noise metrics. For example, some contend that CNEL (Community Noise Equivalent Level) is a more useful predictor of community response to aircraft noise than DNL. In reality, there is little meaningful difference in the predictability of community response to transportation noise, whether measured in units of CNEL, DENL, or DNL.

3. Disconnect Between INM Contours and Real World Experienced Noise

SOC asked JDA to analyze the Chicago Department of Aviation and FAA Environmental Impact Statement (EIS) Integrated Noise Model (INM) contours and real world actual experienced noise including:

1. Documenting the differences between modeled EIS INM contours and actual noise experiences
2. Identifying specific model inputs to ensure accuracy with current operations
3. Evaluating the noise impact of promising procedural/operational alternatives identified in the Fly Quiet analysis paper
4. Quantifying the full geographic extent of noise impacted area and population around ORD utilizing INM and other tools

Dr. Antonio A. Trani, a JDA technical consultant, served as the primary technical research and INM expert. Dr. Trani is a Professor with the Department of Civil and Environmental Engineering at Virginia Tech University and is Co-Director of the National Center of Excellence for Aviation Operations Research (NEXTOR). He has been the Principal or Co-Principal Investigator on 68 research projects sponsored by the National Science Foundation, Federal Aviation Administration, National Aeronautics and Space Administration, National Consortium for Aviation Mobility, Federal Highway Administration, and the Center for Naval Analyses.

The INM and associated noise analyses included:

- Contours produced to verify the ORD EIS INM contours including:
  - 2002 Baseline
  - Construction Phase II Alternative C
  - OMP Full Build Out Alternative C

- Current and future contours modeled to determine likely actual noise experiences and quantify the geographic extent of related noise impacts including:
  - Today 2014-2015 ORD Noise Contour
  - Fall 2015 ORD Noise Contour
  - Modified JDA OMP Full Build Out Alternative C Contour
- Verification and critique of all the inputs for the EIS ORD Contours and the FAA Re-Evaluation
- Evaluation of overflights for each of the 78 municipal areas around the airport
- Information on runway configuration changes effect on historical DNL values recorded at communities around the airport
- Evaluation of fly quiet recommendations potential for noise reduction

a. Summary of JDA INM Team Findings

JDA INMF-1: Analysis of the flight track data indicates that 10.5% of the operations at ORD occur at night whereas the 2015 FAA Re-evaluation utilized 5.1% and Final EIS OMP full build utilized 5.6%.

JDA INMF-2: The ORD airport fleet mix that has evolved in the last decade in ways the EIS study could not anticipate. Today, large regional jets are responsible for 25% of the departures at the airport.

JDA INMF-3: Baseline 2002 EIS contour assigned substantial numbers to heavy aircraft and modeled a significant number of aircraft that no longer operate at ORD.

JDA INMF-4: A dramatic shift of contours from the change from Baseline to May 2014-April 2015 airfield configuration creates significant areas of newly impacted population both within the revised 65 DNL contour and the larger 55 DNL contour. Analysis of complaint data illustrates significant numbers of complaints outside the 65 DNL contour. This confirms the earlier findings of JDA expert Dr. Fidell that the 65 DNL is underestimating noise impact.

JDA INMF-5: EIS OMP predicted 3,070 operations/day in 2013 but according to the latest FAA Terminal Area Forecast (TAF 2015), Chicago O'Hare will not reach 3,070 average daily operations until the year 2038.

JDA-INMF-6: The **JDA Full Build OMP contour** analysis correcting fleet mix with 10.5% nighttime operations demonstrates a 65 DNL impact area of **23.1 square miles** (an area **increase of 27%** over the 65 DNL **EIS Full Build OMP contour**) affecting **45,449 people** (an **increase of 84%** compared to the **OMP EIS population impact**).

Figure 1 below compares the EIS OMP Full Build contour with 5.6% nighttime operations to the JDA OMP Full Build contour with 10.5% nighttime operations and an updated fleet mix based on today's fleet mix and current predictions for larger regional jet trends. The area impacted by the 65 DNL is predicted to increase by 27%.

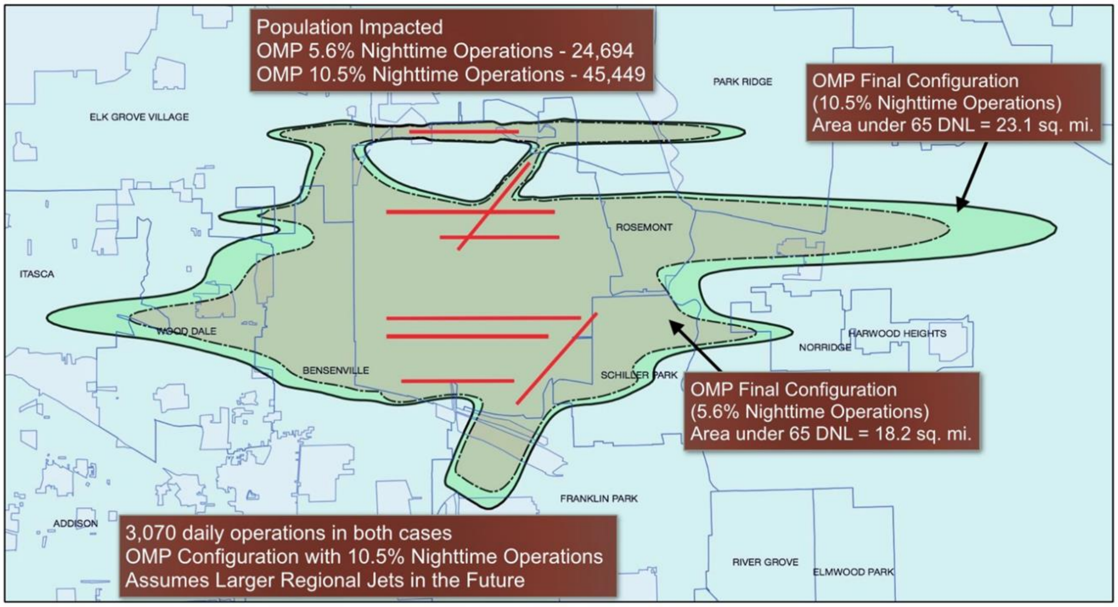

Figure 1: Comparison of ORD EIS OMP Full Build to JDA ORD OMP Full Build Contour.

Figure 2 illustrates the comparison between Today's 2014-2015 65 DNL noise contour with 2,378 daily operations and the JDA OMP Full Build 65 DNL noise contour with 3,070 daily operations The area impacted by the 65 DNL is predicted to increase by 85% when daily operations meet design capacity anticipated in the original OMP EIS. The actual impacts could be better or worse depending on advances in quieter aircraft, improved methods to reduce noise and levels of flight activity.

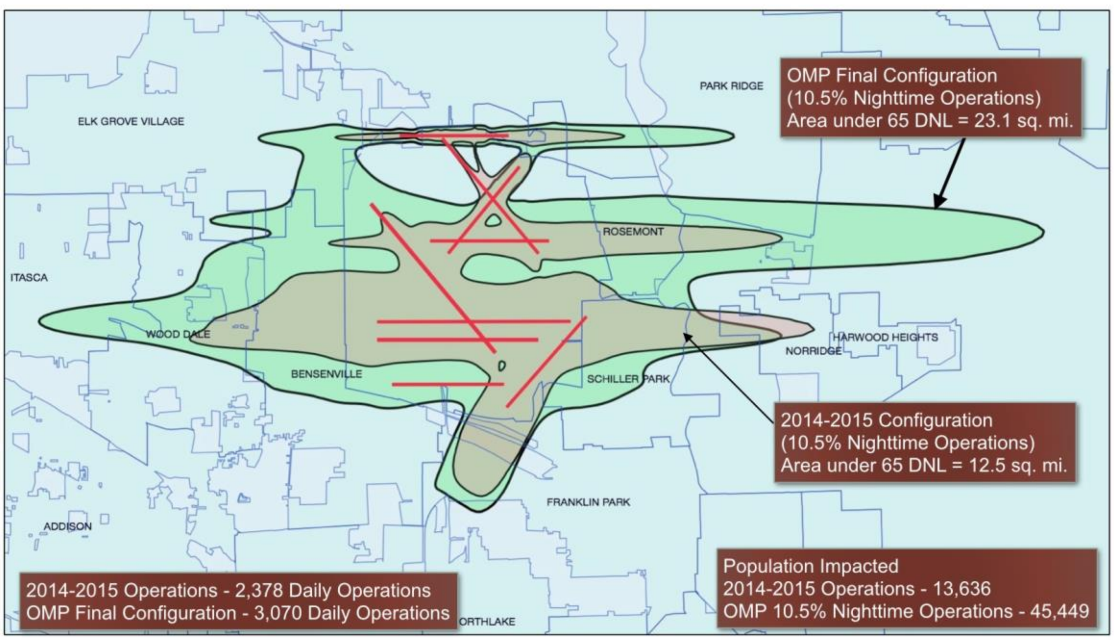

Figure 2: Comparison of 65 DNL Noise Contours for JDA OMP Full Build and Today's ORD Condition (Using May 2014- April 2015 Fleet Mix Data).

Figure 3 and 4 illustrate the contour areas and affected populations predicted by several of the INM contours generated in the study. Figure 3 illustrates that 12.5 square miles are predicted to be within the 65 DNL today and will increase 85% to 23.1 square miles within the JDA OMP Full Build 65 DNL.

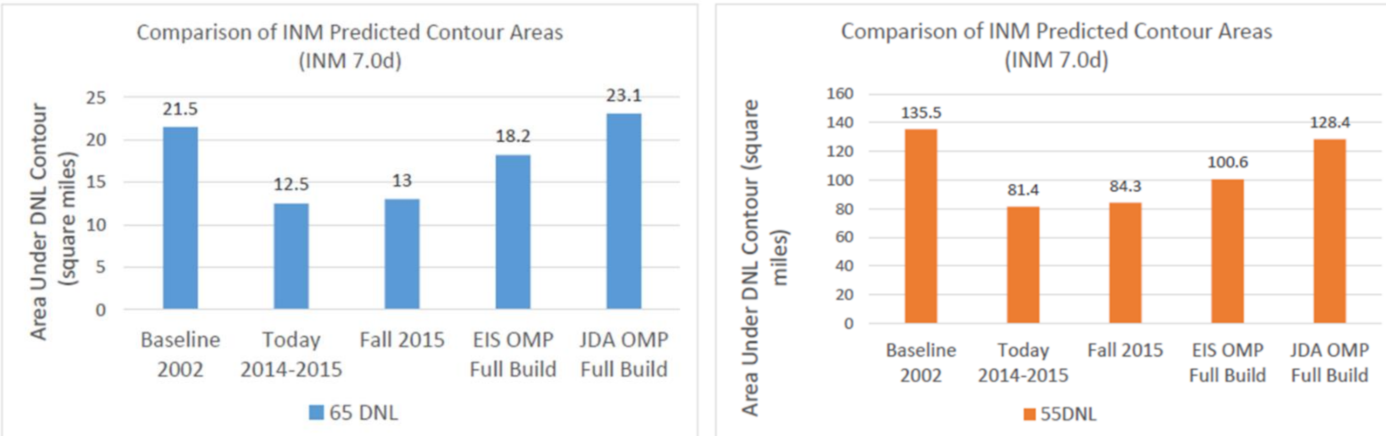

Figure 3: Geographic Impacts of Various ORD Contours Modeled.

Figure 4 illustrates the potentially affected population predicted by several of the INM contours from the study. Today, 13,636 people are estimated to be affected by the 65 DNL. The JDA Full Build 65 DNL contour predicts a 233% increase to 45,449 people within the 65 DNL conour.

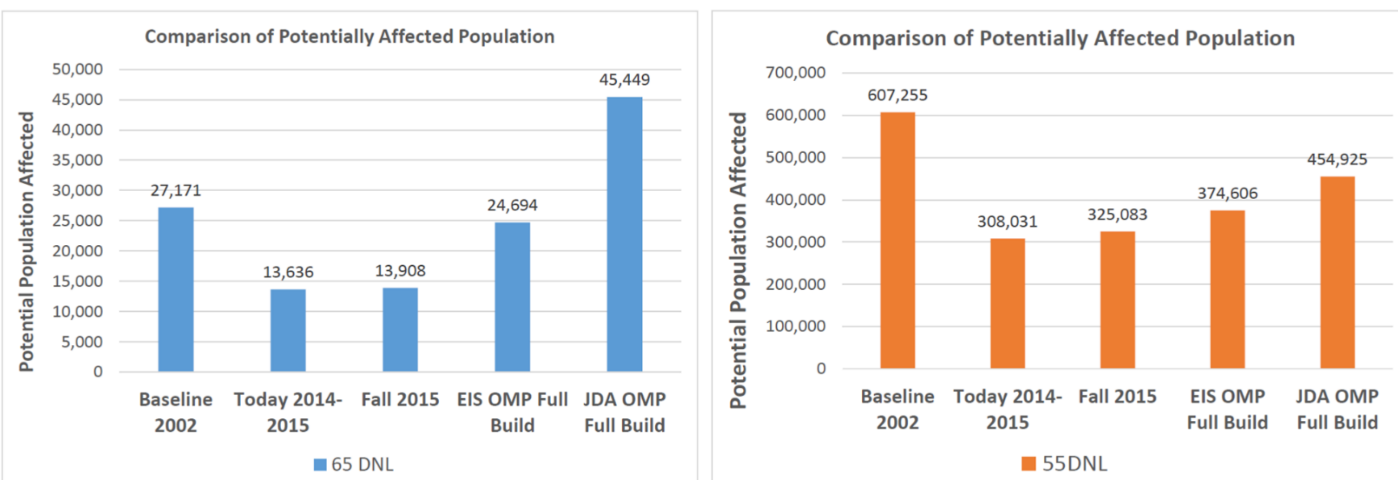

Figure 4: Potential Population Impacts of Various ORD Contours Modeled.

The analysis shows that the size of the area within the 65 DNL contour and the size of the affected population with the 65 DNL contour has decreased between the 2002 baseline and the 2014 airport. This change in the location and size of the impacted geographic area and size of the impacted population appears attributable to three factors. First, the level of annual operations in 2014 is 55,000 less than the 2002 baseline. Second, there has been a considerable shift since 2002 to increased use of regional jets (RJs) which produce less noise than full sized commercial jets. Finally, the directional headings of many of the runways have significantly changed leading to changes in the geographic distribution of noise.

b. JDA INM Team Recommendation Summary

JDA INMR-1: The FAA Re-evaluation noise analysis should report noise contours using the actual aircraft fleet mix observed at the airport in the interim conditions 2015.

JDA INMR-2: The FAA Re-evaluation noise analysis should revise the number of nighttime operations used in the noise analysis for the airport interim conditions 2015.

JDA INMR-3: The OMP EIS noise analysis should revise assumptions about future fleet mix to include larger regional jets operating at ORD. The larger capacity aircraft would be consistent with the FAA forecast of faster growth in enplanements at the airport compared to flight operations.

JDA INMR-4: The OMP EIS analysis should revise the number of nighttime operations used in the noise analysis for future airport conditions. Airline scheduling practices and network delays make it difficult to justify that ORD will ever have 5.6% percent nighttime operations in the future. ORD's effort to increase cargo activity has and will continue to increase nighttime operations. Future EIS analyses should examine ORD's potential plans to increase cargo operations beyond current levels.

JDA INMR-5: Any future INM contour analysis should include measures of variability in the results presented in the EIS OMP noise contour analysis and should describe sources of uncertainty in the noise contour estimates.

JDA INMR-6: Utilize the metric of equivalent overflights (giving appropriate weight to night time flights) to devise a runway rotation plan during fly quiet hours to minimize noise impacts for the maximum population.

JDA INMR-7: Utilize INM to quantify Fly Quiet Recommendations such as optimal departure headings and use of a third runway on a rotating basis to reduce noise impacts.

JDA INMR-8: Encourage voluntary changes to airline scheduling practices to reduce the number of nighttime operations at ORD.

JDA INMR-9: CDA should undertake a careful examination of existing and future approach and departure flight tracks and quantify their noise impact to develop a "Playbook" of runway strategies for ORD that from inception considers noise as a key design element.

JDA INMR-10: Given the number of noise complaints by communities outside the 65 DNL contour, both FAA and CDA should consider Dr. Fidell's recommendation to utilize 55 DNL as a valid threshold for noise compatibility studies.

c. Real Time Sharing of Noise Data with Community Members

Our research found a very broad range of noise impact information sharing globally. It should be no surprise that best noise management practices recognized in the industry maximize information available to and collaboration with the public.

Two software systems stood out in our research – Casper's Noise Lab and Bruel and Kjaer's WebTrak. Noise Lab was unique in both quantity and quality of information and WebTrak appears to be dominant in the market with approximately 63 major airports globally utilizing the system to share noise information including the Port Authority of New York and New Jersey, Los Angeles International Airport, and Denver International Airport. Both systems have similar capabilities. They combine noise data collected through traditional noise monitoring systems with flight track data. The technology enables near real time display of noise monitor levels associated with each flight track. This data can be further compiled and analyzed to produce noise reporting tailored to specific needs and metrics.

Airports differ in their use of the systems with some showing flight tracks, some showing flight tracks and noise monitor measurements and some going as far as to display flight tracks, noise monitor measurements and current noise contours. Quality and quantity of noise information is key to productive dialogue with communities to address and manage noise impacts.

Since our initial recommendation to SOC to explore WebTrak on April 1st of this year, Chicago O'Hare has implemented WebTrak and is now displaying flight tracks in near real time for public viewing. After implementing flight tracking on WebTrak, CDA personnel reported to the ONCC technical committee that CDA does not support providing noise monitor information via WebTrak even though many other major airports do such as the Port Authority of New York and New Jersey.

SOC, other impacted O'Hare communities and neighborhoods, and the City of Chicago can benefit by expanding the use of ANOMS with WebTrak to collaborate on best management of ORD's current and future noise environment. Noise impacts from current plans for infrastructure changes can be predicted, optimized to minimize noise impacts and monitored for accountability. The system can be utilized to improve transparency. Data that we believe can and should be provided include but are not limited to:

- Historic and current flight track data identifying aircraft type, airline, flight number XY coordinates, altitude and speed
- Map changing values of noise monitor measurements as aircraft fly over changing color with noise level
- Map gate locations relative to flight tracks to monitor aircraft to determine if aircraft followed various noise abatement procedures such as the Fly Quiet program

- Map INM annual DNL contours as compared to predicted contours for 55, 60, 65 and 70 DNL
- Map daily DNL contours for the purpose of understanding peak and off peak impacts
- Alternate metrics such as CNEL, N70, N60 and Time Above as determined necessary to tailor noise information to community concerns
- Map noise complaint locations relative to flight track data and current noise contours

Having taken the first step to empower community collaboration, we recommend the City of Chicago reconsider expanding the use or WebTrak to further inform the surrounding communities and improve collaborative noise management.

4. Fly Quiet Analysis and Operational Changes at ORD

JDA assembled a team of air traffic experts with significant experience – both at O'Hare and the FAA's Elgin Regional Air Traffic Center (TRACON) to conduct the analysis of Fly Quiet and provide recommendations as to potential remedial measures. The JDA team of air traffic experts consists of Rob Voss, Jim Krieger and Craig Burzych. Jim Krieger and Craig Burzych have over four decades of hands on operational experience in air traffic control at the O'Hare tower. Rob Voss has extensive experience with systems operations and the Air Traffic System Command Center and based at the FAA's Great Lakes Regional Office in Des Plaines, IL.

The JDA team's investigation included:

- An operational review of the City of Chicago's current "Fly Quiet" program at O'Hare
- A review of the noise abatement programs at 15 major U.S. airports and several overseas airports for possible initiatives that might be used at O'Hare
- Development of recommendations for operational changes at O'Hare that could provide potentially significant noise relief for O'Hare area communities – particularly at night
- Four interim reports addressing visual approaches, crosswind/diagonal runway usage, intersection departures and the need for additional runways at O'Hare

a. The Air Traffic Team's Recommendations

JDA FQ-1: The CDA should develop a more comprehensive, aggressive Fly Quiet program, with a strong mission statement demonstrating its commitment to the highest level of resources to establish and maintain the quietest environment practical for all nearby communities.

JDA FQ-2: The CDA should leave a third runway open during Fly Quiet hours, including at least one diagonal runway, to disperse airport noise effects and to reduce flying distances over communities.

JDA FQ-3: The FAA should encourage operational decision-making personnel to avoid terminating Fly Quiet departure procedures prematurely.

JDA FQ-4: The CDA should continue encouraging ATC compliance with recommended procedures, through on-going recurrent controller education efforts, timely compliance reporting and follow-up activity.

JDA FQ-5: A Continuous Descent Approach should be developed by the FAA for each arrival runway and used during Fly Quiet hours.

JDA FQ-6: The CDA should conduct a review of Noise Abatement Departure Procedures (NADPs), revise as appropriate, coordinate with users and advertise the NADP policy within the Fly Quiet Program Manual.

JDA FQ-7: The SOC, CDA and FAA coordinate to assess departure flight paths from ORD's newest runways and preferred runway usage, to determine the best runway configurations and departure headings for noise abatement and include these within the Fly Quiet Program Manual.

JDA FQ-8: All of the current recommended departure headings should be assessed to determine whether they are actually achieving the goal of directing flights over less-populated areas and revised as required to minimize population impacted by noise on a rotating basis every evening to the extent practical. The CDA should utilize a computer driven model to best determine how to distribute fights over the region on an objective bases to minimize the impact on any particular community. Take-offs should be evenly disbursed over the entire population.

JDA FQ-9: Enact a mechanism to facilitate the periodic review of the Fly Quiet Program Manual, to ensure that it is up-to-date and continues to reflect changes to the airfield and surrounding communities.

JDA FQ-10: The FAA should reevaluate RNAV arrival and departure procedures to determine whether amendments or new procedures could be designed and implemented to provide additional noise benefits.

JDA FQ-11: The areas in which over flights create the least disturbance should be specifically identified by the SOC and nearby communities by correlating noise complaint numbers with population density and flight track analysis. The SOC, CDA and FAA should then collaborate and review whether higher altitudes for initial turns, compound procedures or extended distances on initial headings will reduce noise impacts during Fly Quiet hours.

JDA FQ-12: Throughout each day, during light traffic periods, or during weather events where departures are restricted to a single heading, controllers should use the published Fly Quiet noise headings as "default" departure headings, even outside of normal Fly Quiet hours.

JDA FQ-13: The CDA should continue advocating the use of minimal reverse thrust and for pilots to avoid use of early runway exits during Fly Quiet hours, unless operationally necessary.

JDA FQ-14: The CDA should encourage airlines to avoid using old generation aircraft such as the MD80 and DC10 during Fly Quiet hours.

JDA FQ-15: The CDA should coordinate with other major airport operators to encourage airlines using A320 aircraft to retrofit their fleets with vortex generator modifications for reducing airframe noise.

JDA FQ-16: The CDA should enhance the report card program to measure and publicly report on airlines and cargo operator's noise mitigation performance metrics and the CDA, FAA and airlines collaborate to minimize scheduled operations during Fly Quiet hours.

JDA FQ-17: Utilize two or more departure runways during Fly Quiet hours, along with a wider range of departure headings, allowing air traffic control to expedite traffic and draw overall aircraft operations per impacted area down to lower traffic levels more quickly in the busier shoulder hours.

JDA FQ-18: The CDA should implement a Runway Rotation Plan to avoid concentrating flights over the same communities and equitably distribute noise during the Fly Quiet hours.

JDA FQ-19: The FAA (O'Hare Tower) should refrain from using intersection departures during Fly Quiet hours.

JDA FQ-20: FAA should consider eliminating visual approaches during fly quiet hours.

5. Top Ten Achievable Remedial Measures

1. CDA must lead the FAA in collaboration with communities surrounding O'Hare and all stakeholders to evaluate all the noise reduction opportunities and implement those that can be demonstrated to reduce impacts
2. Define and implement fly quiet noise headings for all new runways
3. Review and revise existing fly quiet noise headings as required to minimize noise impacts
4. Design and implement RNAV procedures and utilize ANOMS/Webtrak to monitor and report compliance
5. Use a third runway during fly quiet to distribute noise
6. Establish a runway rotation plan to best distribute noise impacts during fly quiet
7. Expand use of WebTrak to report real time noise monitor readings to improve transparency, track progress, monitor compliance and gain trust
8. Collaborate with eight other million plus operation airports to define new mitigation strategies to propose to the FAA

9. Analyze existing complaint data to better understand noise impacts of past changes to anticipate and mitigate impacts of future changes
10. Implement a report card and publicity program to encourage airline support of noise reduction initiatives including scheduling to reduce nighttime operations

6. Opportunities Going Forward

a. CDA Roundtables

The proposed CDA roundtables are the logical next step to collaboratively seek noise mitigation solutions. The noise abatement initiatives described in the JDA Fly Quiet recommendations and in the reports by Dr. Fidell and Dr. Trani should be evaluated by FAA Air Traffic officials in coordination with the Chicago Department of Aviation, the airlines, and community stakeholders such as SOC, ONCC, state and local officials and community organizations such as FAIR. INM modeling should be used to validate and target the best combination of operational parameters to minimize noise impacts.

The JDA team stands ready to provide expert technical assistance to SOC communities and other stakeholders in conducting such evaluations.

b. NextGen Metroplex Design

The Chicago Metroplex is one of many metroplexes nationwide being redesigned to implement NextGen improvements including precision based navigation or RNAV. The CDA and communities collaborative round table forum is the appropriate venue to invite FAA to engage stakeholders in the future O'Hare Metroplex NextGen RNAV design.

It is critical that SOC and surrounding communities understand the implications of the RNAV design and seek participation in the design process. The existing flight track paths in Chicago are widely dispersed scattered (see figure 5).

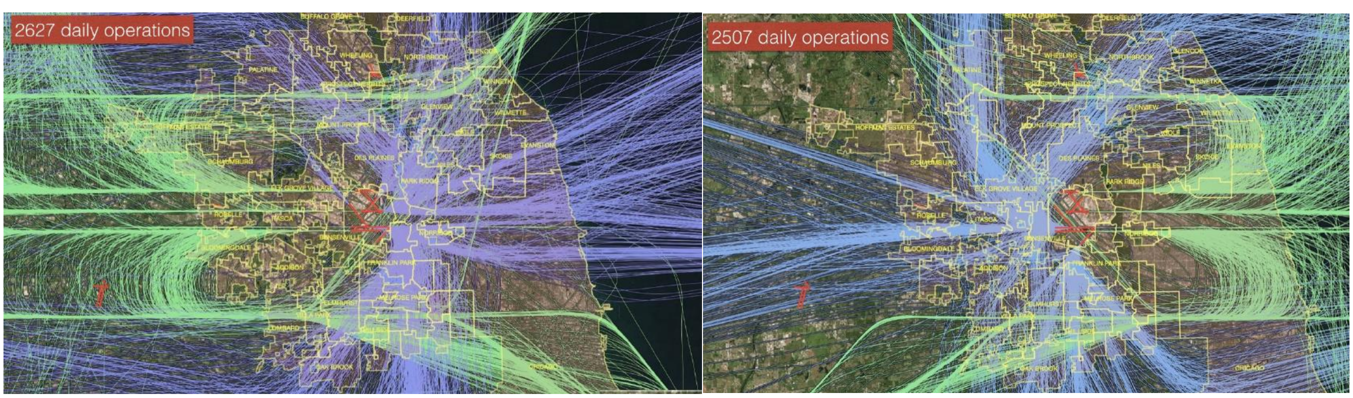

Figure 5: Chicago O'Hare Existing Flight Track Paths for East and West Flow.

Figure 6 depicts the pre and post flight paths for Atlanta International Airport and Dallas Fort Worth Airport. RNAV procedures narrow the flight path dispersion to more concise corridors. Capacity also increases because the aircraft location is known to a higher level of precision which allows a lesser degree of separation (ie. more operations). This will reduce the area impacted by noise but increase the impact and frequency to the area under the designated flight paths.

Communities like Atlanta and Denver utilized the round table concept to engage stakeholders to successfully implement RNAV procedures by collaborating with stakeholders to identify flight paths that minimize impacted area and population.

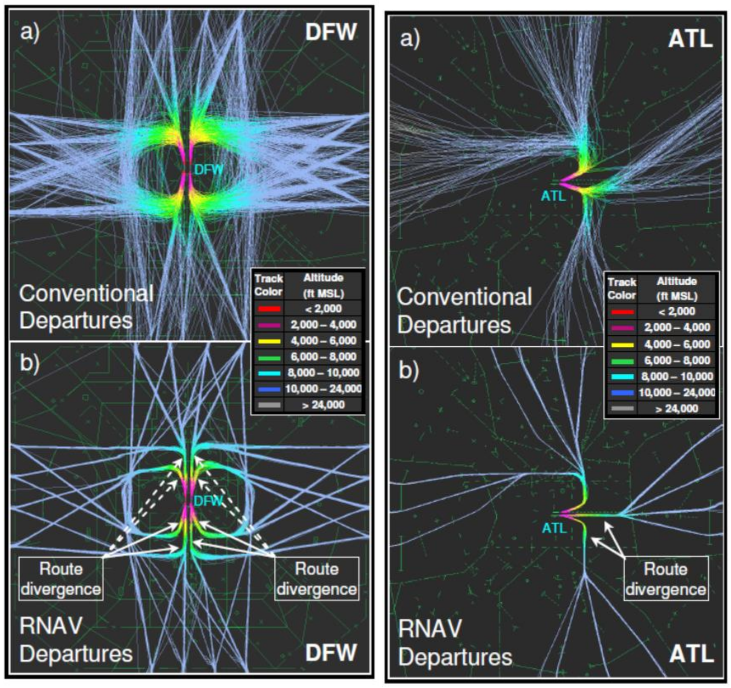

Figure 6: Pre and Post RNAV Precision Based Navigation Flight Paths DFW and ATL

7. Recommendations

In addition to the recommendations found in each of the whitepapers, we would also recommend the following:

1. Every opportunity to mitigate noise at ORD should be explored and those that can demonstrate benefit should be implemented as possible on a 24 hour basis not just during fly quiet hours.
2. The Chicago Department of Aviation should request an equal role with the FAA in the design of the Chicago Metroplex to assure the communities' interests are protected.
3. Expand the use of WebTrak to improve stakeholder access to real time noise information. The commitment to transparency will demonstrate CDA's willingness

to empower the community with the hard facts to be an effective partner in finding solutions.

4. The Chicago Department of Aviation should join with the eight peer airports that exceed a million operations per year (superhubs) and especially those with similar encroachment related noise problems to brainstorm and organize recommendations to submit to the FAA to improve Part 150's mitigation tools for such super hubs.