Charlotte Airport Community Roundtable

March 10, 2021 Meeting

Handouts

- Meeting Agenda
- FAA Slate Review/Implementation Checklist
- CLT Updates
- Community Engagement Project Team Update
- Government Engagement Project Team Update
- Local Operations/Improvement Project Team Update
- Listing of Requests for Analysis and Motions from January
- Written Updates Document
- NES Webinar Key Takeaways
- Draft ACR Statement to the FAA on the NES Research
- ANE Symposium Summary

CLT Airport Community Roundtable

Meeting Agenda – 3/10/21, 6p-730p

1) **Open the Meeting (10-15 Mins.)**
   a) Call Meeting to Order – Kurt Wiesenberger, ACR Chair
   b) Describe Meeting Approach – Ed Gagnon, Facilitator
      i) WebEx Process, Confirm WebEx/Phone Functionality with Members
         (1) Use of "Raise the Hand" Function; Stating Name when Speaking
         (2) Structure of Meeting Handout Document; Screen Sharing
      ii) Review Ground Rules
   c) Approve Minutes from January – Kurt Wiesenberger, ACR Chair
2) **Receive Scheduled Public Input (Time TBD)**
3) **Update on Moving Forward – Engage, Monitor, and Improve (20-25 Mins.)**
   a) **Monitor:** CLT Updates
      i) Reminder of FAA Slate Review/Implementation Checklist – Ed Gagnon, Facilitator (1 Min.)
      ii) CLT Update – Stuart Hair, CLT Director of Economic & Community Affairs (5 Mins.)
         (1) Environmental Assessment and Part 150 Updates
         (2) CLT Written Updates on Existing Initiatives and Operations
   b) **Engage: Updates from Engagement Project Teams** (10 Mins.)
      i) Community Engagement Project Team Update – Phil Gussman, Project Team Lead
      ii) Government Engagement Project Team Update – Bob Cameron, Project Team Lead
   c) **Improve: Update from Local Ops/Improvement Project Team –** Sherry Washington, Project Team Co-lead (5 Mins.)
4) **Request/Address Additional Business (25-30 Mins.)**
   a) Unfinished Business (2 Min.)
      i) Note **Written Updates** on Motions/Requests for Support
   b) New Business
      i) Provide ACR Comment on Neighborhood Environmental Survey – NES (10-15 Min.)
         (1) NES Webinar Key Takeaways – Ed Gagnon, Facilitator
         (2) ACR Statement to the FAA on the NES Research – Kurt Wiesenberger, ACR Chair
      ii) Share ANE Symposium Results: Key Takeaways – Kurt Wiesenberger, ACR Chair (10-15 Min.)
      iii) Review of Updated ACR Mission/Charter – Dan Gardon, CLT Noise Abatement Specialist (2 Min.)
      iv) Additional New Business (2 Min.)
5) **Adjourn (2 Mins.)**
   a) Next Meeting: **May 12, 6p-8p**

Charlotte Douglas International Airport

Airport Community Roundtable

CLT ACR FAA Slate Review/Implementation Checklist – as of 1/13/21

CLT ACR Slate was submitted on July 9, 2020	Sequence				
	1	2	3	4	5
☐ 11 - National FAA: Phase 1 - Preliminary Activities - Initial Review and Baseline Analysis Report (BAR) - (May take 30 days+)					
☐ 12 - Phase 2 - Design Activities - Generate a single PBN procedure and/or route or a set of PBN procedures and/or routes that meet project objectives - (May take 12 months+)					
☐ 13 - IF there are triggers in the area under the proposed procedure, perform noise screening/analysis to help assess the impacts					
☐ 14 - Phase 3 - Development and Operational Preparations - Develop procedures and/or routes and complete all pre-operational items necessary to implement the procedures and/or routes - (May take 6 months+) **					
☐ 15 - Phase 4 - Implementation - Implement the procedures and/or routes as designed					
☐ 16 - Phase 5 - Post-Implementation - Ensure that the new or amended procedures and/or routes perform as expected and meet the mission statement finalized during the Design Activities phase					

** Step 14 Update from FAA on 3/9/20: *The FAA approval process is still the same, however the duration for Step 14 is really indefinite and will be based on many different variables, including workload at the time, complexity of the submittals, and the prioritization process.*

CLT Update

Environmental Assessment: The Major Capacity Projects Environmental Assessment (EA) has been progressing, and we are on schedule for completion this summer. Recently, the Preliminary Draft EA has been submitted to the FAA for their review. This is the step prior to publishing the Draft EA for the public. We are currently planning for the third set of public meetings and the public hearing for the Draft EA. We are expecting those meetings to take place in May. Recognizing the COVID-19 environment is still unknown, the public meetings and hearings will be held virtually.

Part 150 Update: Following the EA, the Airport will initiate a Part 150 study to update the Noise Compatibility Program and the Noise Exposure Maps.

Updates on Existing Initiatives and Operations: January 2021 Results: Flights were down 32%, and passengers were down 49% compared to 2020. February data not yet available. No relevant updates to initiatives.

Community Engagement Project Team Update

Project Team Members: Phillip Gussman (Lead), Walter Ballard, Mark Loflin, Priscilla Johnson, Sherry Washington, Robert Cameron

Goals for 2021

A) Increase awareness among residents and businesses of aircraft-related noise concerns, how to voice issues and convey viewpoints, how to suggest improvements

B) Build awareness of the ACR and its purpose

C) Share progress made to-date by the ACR and upcoming plans

Update Since the Last Report

- March Action Item: *Develop and complete documents addressing each of the Team Goals, Refine contacts and distribution.*
- Status:
  - Currently developing our messaging documents and distribution.
  - **ACR Member Request -** We need more community outlets for our messaging!
    - Do you have a community newsletter or paper (printed or online) in your area? We need YOU to provide us an Email contact for that newsletter. Please Email me at **Phil@gussmanconsulting.com** Name, email and the community covered by the newsletter or media.

Government Engagement Project Team Update

Project Team Members: Bob Cameron (Lead), Sayle Brown, Phil Gussman, Mark Loflin, Sean Muckenfuss, Natalie Rutzell, Kurt Wiesenberger.

Purpose Statement: *To build governmental/political awareness, energy, focus, and support for noise improvement needs and initiatives.*

2021 Goals and Update Since the Last Report

- A. Increase relevant government representatives' awareness and understanding of the CLT noise issue, and of the CLT ACR purpose, progress, and upcoming activities.
  - **Update:** All members of the Charlotte City Council and the Mecklenburg County Commission have been contacted with an invitation to join the ACR virtual meeting in March and/or in May. To date, following Commissioners have agreed to attend the March meeting: Elaine Powell, Laura Meier, Susan Rodrigues-McDowell, and Leigh Altman. Mayor pro tem Julie Eiselt of the Charlotte City Council has agreed to attend the May meeting. Several representatives of both bodies have not yet replied to the invitation
- B. Define the type of support desired from government officials, and seek same.
  - **Update:** While there are currently no bills in any legislative houses that pertain, we are asking that U.S. Congress Representative for Mecklenburg, Alma Adams, to join the Quiet Skies Caucus of the House of Representatives. General support and awareness is being sought at all levels
- C. In support of the above two goals, utilize the GEPT PowerPoint briefing developed during year 2020, amended and updated with results of ACR Slate feedback from the FAA, status of the 4th Runway Environmental Assessment, and any other major germane developments.
  - **Update:** That briefing is prepared and awaiting our ability to meet in person

Local Operations/Improvement Project Team Update

Project Team Members: Sherry Washington (Co-lead), Kurt Wiesenberger (Co-lead), Mark Loflin, Thelma Wright.

Purpose Statement: *Identifying/implementing additional locally-controlled noise and other environmental improvement opportunities associated with the Charlotte airport that would benefit individuals and organizations with a special focus on those with outdoor activities in the region.*

Update Since the Last Report

- Held Two Meetings (1/28/21, 2/25/21)
- Confirmed continuous process approach to be used by the Project Team for uncovering, vetting, analyzing, and implementing noise improvements.
- Reviewed results from the 2020 Member Idea Generation Survey, CLT's feedback on survey results, and North v. South Flow Decisioning Communications, CLT's response to LOIPT follow-up questions, and existing airport/roundtable benchmarking information.
- Decided to design and conduct a benchmarking process with other airports and roundtables to gain a solid sense of what other communities are doing to make noise improvements that align to the Project Team's purpose.
- Meet with HMMH to uncover what other communities are doing that relates to this Project Team's charge.
- Continue to evaluate North v. South Flow Decisioning Document as well as Member Survey results to uncover more locally-based improvement ideas to consider suggesting to the ACR.
- **Request interest from ACR membership to join our Project Team!**

Charlotte Douglas International Airport

Airport Community Roundtable

Analysis/Support Requests and Motions from the January 2021 Meeting

Requests for Action

Share FAA Noise Survey Results and Supplemental Information (FAA/CLT)

The FAA mentioned that a Noise Annoyance Survey has been completed and results are available. They stated that they'd share the link to the results with the ACR. In addition, CLT noted that they'd provide the ACR with supplemental information about the study, including a brief summary developed by HMMH.

Provide Response and Updates on Slate of Recommendations to the ACR (FAA)

The FAA committed to provide another progress update on the review of the Slate at the March ACR meeting. They also committed to provide a response to the three arrival-related Slate recommendations at the May ACR meeting.

Provide Update on EA Process (CLT)

CLT noted that they'd provide an update on the EA process to the ACR via a web link.

Provide Part 150 Overview (CLT)

CLT is in the process of refining an overview document on the Part 150. When complete, CLT will send the overview to the ACR.

Share City Council Representative Comments with Government Engagement Project Team (CSS)

CSS will pull comments from the City Council Representative who attended the October 2018 ACR meeting. This information will be sent to the Government Engagement Project Team lead to share the representative's guidance on how to appropriately/effectively engage Council members.

Update CLT ACR Mission/Charter (CLT)

CLT is in the process of updating the ACR Charter to reflect the current focus/scope of the Roundtable's work and to make other minor meeting/membership-related updates. CLT will work with the Chair/Vice Chair over the next month to refine the document and then bring to the ACR for a vote when ready.

CLT Airport Community Roundtable

Updates on Requests/Motions – 3/10/21 ACR Meeting

Community Engagement/Communications Updates

Requests for Support – Communication Plan Development – CLT Staff

Dan J. Gardon, Noise Abatement Specialist, CLT on March 9, 2021

No further update on the CLT Communication Plan Development.

FAA-Related Items

Understanding of Internal FAA Review Process relating to CAATT/EPAYE Raising Altitude Motion

John Carraher, Office of the ASO Regional Administrator - Senior Advisor, FAA on March 9, 2020

We can arrange to have someone at the April or May ACR meetings to discuss the process for the CAATT/EPAYE Raising the Altitude motion with the understanding that the ACR would like to better understand the process while they finalize the rest of the slate.

Request of FAA for Tower Orders (FOIA)

Dan J. Gardon, Noise Abatement Specialist, CLT on March 9, 2021

No updates to share on the FOIA request at this time.

Airlines-related Updates

Update on NADP-2 Recommendation

Dan J. Gardon, Noise Abatement Specialist, CLT on March 9, 2021

No further update on the NADP-2 recommendation.

American Airlines Retrofit of Airbus Aircraft with Vortex Generators

Tracy Montross, American Airlines Regional Director of Government Affairs as of February 15, 2021

We have now modified 238 of 283 aircraft with vortex generators. No changes to the due date (The due date for completion of the EO is 01Mar2022)

Voluntary Restraint Program (Scheduling of Flights at Night)

Dan J. Gardon, Noise Abatement Specialist, CLT on March 9, 2021

No further update on the Voluntary Restraint Program.

CLT Airport Community Roundtable

FAA's Neighborhood Environmental Survey (NES)

Summary of Results from FAA Webinar on 2/22/21

Background

On February 22, the FAA provided summary results of the Neighborhood Environmental Survey in a webinar format which included a post-presentation panel discussion. Noted below are some of the key findings and conclusions from the survey as well as from the presentation and panel Q&A session:

- Full panel is available at: https://www.youtube.com/watch?v=Mku13gL0xGc
- Panelists were from the FAA, HMMH, and Westat.
- At one point, over 500 people were attending the webinar.

NES Methodology - Key Points

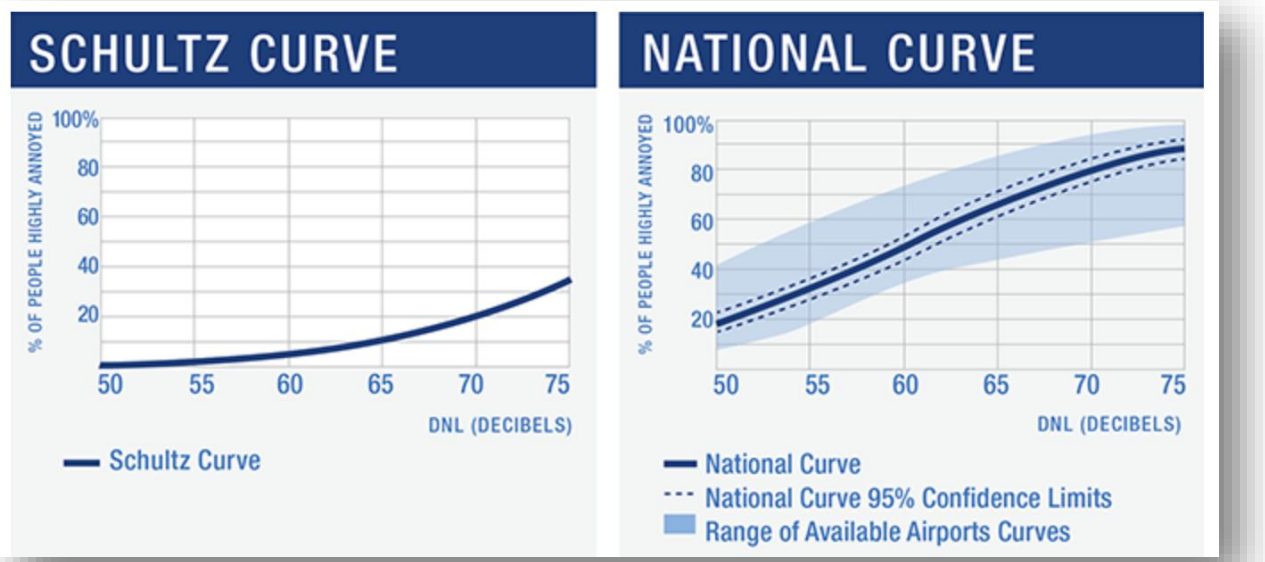
- Twenty (20) airports included in the research – cross-section of country based on location, weather, population, flight volume, fleet mix, etc. CLT was not included.
- Survey conducted with knowledge of respondent's DNL, so responses could be associated with current DNL noise level (from DNL 50 to 75 dB).
- Timeline
  - Research process started around 2011/12
  - Research conducted from October 2015 through September 2016
  - 2018 FAA Reauthorization Bill required releasing results by October 2020
  - Results released in January 2021.
- Predominantly a mail survey process, with 10,328 completed surveys by residents (about 500/airport).
  - Research conducted in 6 waves (2-months each) to adjust for seasonality.
  - Follow-up calls were made with respondents for additional information, and about 20% of respondents provided more in-depth information to aid overall analysis of results – identify possible additional contributing factors.

NES Results

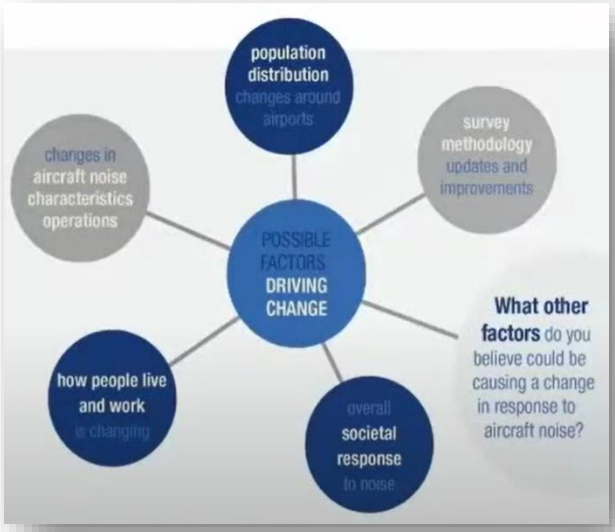
- Preliminary results overwhelmingly suggest 65 DNL is no longer an appropriate measure of being highly annoyed.
  - 65 DNL in 1992 validated as **the** measure of "Significant impact."
    - When Schultz curve was drawn (1978, validated in 1992), about 10% of residents highly annoyed at 65 DNL level.
      - At the same time, at the 60 DNL level, only 6% highly annoyed.
    - Per NES results, roughly 70% and 50% annoyed at the 65 and the 60, respectively.

Please see the graphs on the following page for illustrations.

- Below, the "Shultz Curve" – representing transportation noise – reflects the percentage of people annoyed based on DNL level in 1992. The "National Curve" reflects the percentage of people annoyed based on DNL level in the most recent NES study (research conducted 2015-16).



The FAA identified some potential factors that could have caused the change including what's noted in the graphic to the right.



Q&A Period/Panel Discussion

- There were many clarification questions about the methodology:
  - Respondents were not told it was a noise survey, so as not to bias results. Fewer than half the questions were about noise.
- Why conduct the survey?
  - Get updated information on how people perceive aircraft noise.
- What is happening as a result of the survey?
  - FAA looking at potential supplemental metrics.
  - No plans to resurvey since NextGen, etc. already implemented. More focused on the metric.
  - No timeframe for addressing anything from a policy perspective. Focus is obtaining information and determining next steps.
  - Not sure when or how this will be used to change measurements of noise annoyance.
- How can roundtables get involved?
  - Review report.
  - Comment individually and as a group.
  - Suggest how roundtables think FAA could work with them.

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FAA's Neighborhood Environmental Survey (NES)

ACR Comment on Results – v1

These comments are being sent by Phillip Gussman, Vice Chair of the Charlotte Douglas International Airport Community Roundtable (ACR), on behalf of the entire ACR.

1) The CLT ACR members are all residents of the community affected by CLT flights. We are very familiar with airport operations, flight traffic routes, noise physics, and the changes that the Metroplex project created.
2) The FAA's NES confirmed that the 65 DNL metric is an inadequate measure of noise annoyance.
3) Our ACR has noted that frequency of flights has a strong effect on annoyance. With DNL essentially being calculated as a 24-hour average, it doesn't accurately reflect the annoyance level felt by residents who experience periods of high frequencies of flights. These periods of frequent overflights may not last all day, but they can be significant for multiple 2-3 hour stretches during the day - when flights can go over the same areas only 45 seconds to one minute apart.
4) In addition, having a single measure to assess "Significant Impact" with 65 DNL leads to a lack of concern or action taken to address those negatively affected by overflights but living outside of the 65 DNL.
5) The volume and frequency of flights can make potential homebuyers less likely to want to live in certain areas (thus creating a negative economic impact) and also have environmental and other social/health effects.

Based on the NES results as well as our experience in evaluating the effects of noise, we're providing the following Recommended Actions:

1) Develop a new metric and/or approach to measuring annoyance that clearly takes into account periods of high frequency. The ACR developed a hybrid approach that addressed a level of annoyance based on whether residents either experience higher dB flights, higher frequencies of flights, or both. Locations could be identified as being in a Comfort, Concern, or No Go area based on some combination of their noise level and frequency. Therefore, in addition to having a hybrid approach that takes into account shorter periods of high frequency flights, it also created 3 levels of annoyance instead of just the one resulting from use of the 65 DNL.
2) Ensure that the metric doesn't have a limited application to determining what can be done to mitigate noise only in areas in close proximity to the airport (such as what occurs with the current 65 DNL threshold).
3) Engage Roundtables such as the ACR for input and feedback on metric design and application.
4) Identify scheduling approaches and operational procedures that would address the noise level AND frequency concerns that create annoyance as well as economic, environmental, and health concerns. Share potential scheduling approaches and operational procedures with Roundtables for them to consider for their airports.

CLT Airport Community Roundtable

UC Davis – Aviation Noise & Emissions Symposium (Feb. 23-26)

Summary of ACR Participant Comments – Categorized

The following ACR Members participated in the Symposium: Sherry Washington, Natalie Rutzell, Mark Loflin, Bob Cameron, Sayle Brown, Kurt Wiesenberger, Phillip Gussman. Ed Gagnon (ACR Facilitator) also participated. Dan Gardon was a speaker for the session titled: ***Aircraft Noise and Overflight Dispersion: Opportunities and Challenges***

- **General Comments**
  - Mark Loflin: Dan's talk was most enjoyable to me.
  - Bob Cameron: Good info all around. Excellent work by Dan Gardon, of course.
  - Sayle Brown: I really enjoyed the presentations all four days. Very informative and enjoyed seeing all the comments that were presented down the right-hand side of the screen while the presentation was ongoing. It sounded a lot like the same struggles, concerns, suggestions, and avenues that our ACR has been navigating.
  - Phillip Gussman: A virtual conference certainly has some trade-offs; while it was certainly easy to make all the sessions it missed out on all the understanding that can come from the "group reflection" and networking of a Live event. I did enjoy the presenters and the format; our team was well represented with its members and staff throughout the event; thank you to everyone that attended.
- **Noise Metric/NES Survey**
  - Mark Loflin: Need for the day 65 standard to change to truly reflect the actual noise.
  - Bob Cameron: The NES's "National Curve" and how it differs from the "Schultz Curve" is something that I think the ACR members in general should be aware of.
  - Kurt Wiesenberger
    - In addition to 65 dB DNL as a metric of noise near airports, a better metric for further locations is "n Above' as in # of flights above 55 dB in a given time period.
    - Book entitled "A Guide to US Aircraft Noise Policy" by Fidell and Mestre is a good resource we should read. E.g. The 65 dB DNL was established by Air Force base leaders to appease nearby military housing residents. Reduced thrust take offs were first dismissed when proposed to reduce noise. When proposed as a means to reduce fuel on take offs, it was adopted. Airframe noise is very significant on arrival noise; engines more significant on take offs.
  - Phillip Gussman: Noise Metric NES survey was a significant change in the way FAA was considering Noise levels and will prove to be a fundamental change in the way groups like ours and airports address the issue of noise. I do think we will need to build on our understanding of noise with some new contour maps or education on the "National Curve."

- Ed Gagnon: Why did NES show such a large change in levels of annoyance?
  - Schultz Curve included road and rail (so actual % in 1992 for aircraft-only noise annoyance may have been closer to 30%)
    - Acoustic v. Non-acoustic influences are why 65 DNL, in the NES, was found annoying by - on the low-end - 40% of respondents at one airport and 80% - on the high-end - of respondents at one airport
      - Panelist thinks non-acoustic factors drove the variations from airport-to-airport (e.g., fear, lack of trust in government; people around airports fear loss of control because residents constantly told "ANCA can't let us do that")
  - Policy change is more important than discussing metric

❖ **Advanced Air Mobility**

- Sayle Brown
  - One of the presentations I thought that could be a concern to our ACR in the future is the AAM (Advance Air Mobility) UAM (Uran Air Mobility) and UAS (Unmanned Aircraft Systems).
  - With the electric EVTOL (electric vertical take-off and land) short-haul helicopter traffic which will invade the lower airspace (surface up to approx 2,000' AGL) and maybe a distance of 100 miles max, the noise of the electric engine may not be too loud, however, the helo blade rotation (Whop Whop Whop) might be somewhat annoying let alone the increased low altitude traffic. Instead of UBER Car, you will now have UBER Helo and UBER Amazon Helo delivery. I believe this is all being created in order to work our way to eventually achieving Net Zero Fuel Emissions, however, I don't believe Electric is the answer. Not enough power and not enough distance for the usable leg segment. While BIO fuel has less CO2, NOx (oxides of nitrogen), VOC (volatile organic compounds) than traditional jet fuels, the really only acceptable aviation fuel if you want to meet Zero Fuel Emissions, is Hydrogen, which the development is really not in our near future.
- Ed Gagnon: Advanced Air Mobility includes short trips around communities with small, often electric aircraft – alternative to driving. Would land/take off from helipads or vertiports. Cost/user would be somewhat similar to ride-sharing. Many integration and policy considerations. Application a few years off.

❖ **Government Engagement**

- Bob Cameron: There is no NC rep on the "Quiet Skies Caucus" of the US House of Representatives. That is a potential tool for us to use, and the Government Engagement Project Team is going to try to get our CLT Rep., Alma Adams' attention, and hopefully her agreement to join that (it's 47 Democrats and 1 Republican, so she should be amenable if we can get her attention). Certainly, the Congressman with the 6th busiest (read noisiest) airport in the country should be on that.
- Sayle Brown: While we have already decided to include and involve our local, state, and federal representative in the ACR's concerns, I would advise we work with our local municipalities to make them aware of future noise pollution created by low-level traffic (e.g., Advanced Air Mobility) they can adjust and update their local noise ordinances and any possible privacy concerns (ie Drones with cameras).
- Kurt Wiesenberger: Key messages for more government engagement and support, write and call person in officials office who is responsible for transportation-related matters. Tell them "this is really important to me," be politely persistent, explain your experience, meet with them, ask for their support. Get them to join the Quiet Skies Caucus. The airline industry spends $48 million per year lobbying Congress.

- Phillip Gussman
  - We have a much better than average relationship with the FAA than most parts of the country. While we certainly wish to see them move quicker, they have remained responsive to our questions and collaborative in demeanor.
  - After a few years on the ACR and some discussion (online chats at the symposium) I do feel we need to move well beyond the local governance and insure our concerns are heard and represented by our federal officials.

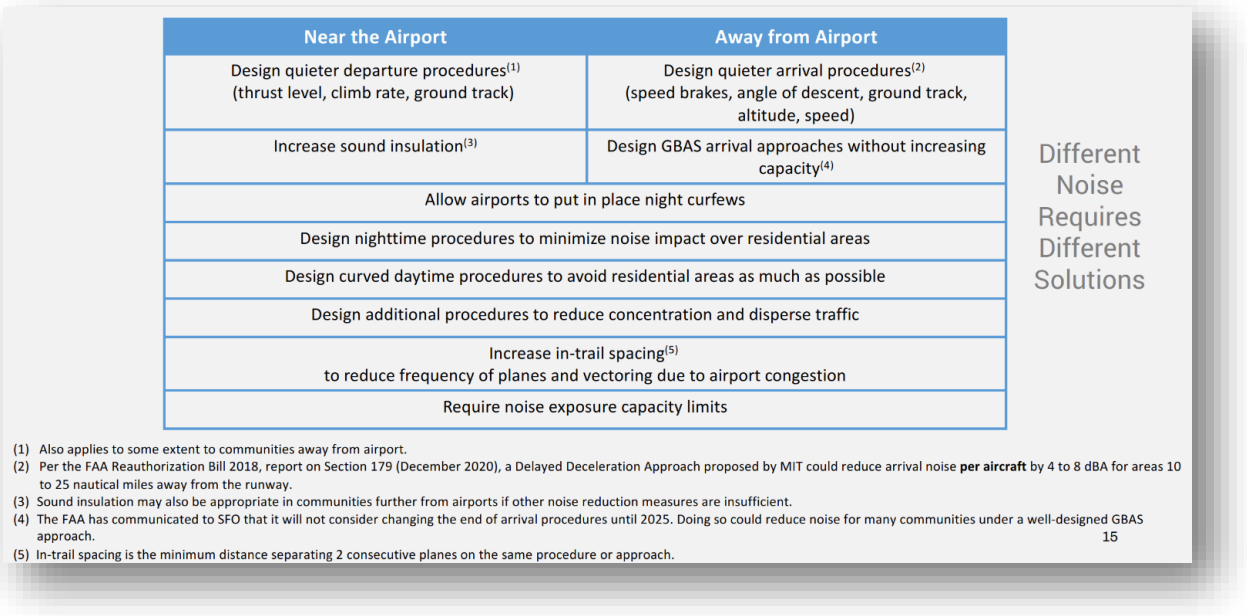
❖ **Additional Considerations Other than Noise**

- Mark Loflin: Heard quite about effects of the noise that I haven't thought of and we may want to start emphasizing more like effects on heart conditions, loss of sleep and economic factors of being under runway paths.
- Sayle Brown
  - This leads me to a topic I just learned about. High Altitude Contrail Cirrus. (I always knew what created the Contrails).
  - It appears that the impact of burning Jet fuel at high altitudes which creates Contrails is a significant contributor to global warming. This is accomplished (supposedly) by the ice crystals (water in jet fuel that is not burnt) attaches to the soot/carbon from the jet exhaust and causes pollution in the higher altitudes that is more destructive to our environment than automobiles, industrial exhaust, spray deodorant, and even volcano eruptions on the earth's surface. It appears that it takes a long time for the pollution on the surface to get up to the ozone layer while the jet exhaust is there almost immediately.
- Kurt Wiesenberger: Direct and indirect impacts of Aviation on Human Health. Study showed a 22% decreased birth weight in babies born near airports. Study showed increase in pre-term birth weights from UFP ultra fine particles from jet exhaust near airports. Univ. of Penn is conducting a study mentioned in FAA Environmental study on noise effect on human sleep and related health.
- Phillip Gussman: Many groups like ours also carry the responsibility of addressing other environmental concerns related to airports and aviation. I feel this is a direction we should consider. Our City (Et Al.) strives for sustainability; so should our airport.
- Ed Gagnon: One panelist noted that emissions higher than 3000' above ground level are generally considered to have minimal effect on ground-level air quality.

❖ **Noise Reduction**

- Kurt Wiesenberger
  - Operational dispersion is a helpful process. Natural dispersion works on departures but is technically challenging on arrivals. Controllers rely on ISD routing from 20 miles out on arrivals to keep flights in order. It's an issue of sequencing and safety and concern over controller (ATC) workload. Teeterboro, NJ and Denver are working on this.
  - Implementing noise reductions during Recovery. Retiring old louder aircraft like A320s, 319s, MD80, MD90s. Adding more efficient and quieter aircraft, e.g. A220s. While passenger volume has been down, air cargo traffic has increased.
- Ed Gagnon
  - Dispersion on approaches/arrivals not very feasible. Today, it's more about sequencing than procedure design. It's about getting planes safely/efficiently in line and in a way that's manageable for ATCs.
  - Arrival systems being tested, but not yet perfected. One panelist referred to these systems as "time-based flow management."
  - Reducing noise at the source is more beneficial than anything else.

- Potential noise solutions to consider (some of which may require legislation) as shared by panelist representing SFO:



Near the Airport	Away from Airport
Design quieter departure procedures[1] (thrust level, climb rate, ground track)	Design quieter arrival procedures[2] (speed brakes, angle of descent, ground track, altitude, speed)
Increase sound insulation[3]	Design GBAS arrival approaches without increasing capacity[4]
Allow airports to put in place night curfews	
Design nighttime procedures to minimize noise impact over residential areas	
Design curved daytime procedures to avoid residential areas as much as possible	
Design additional procedures to reduce concentration and disperse traffic	
Increase in-trail spacing[5] to reduce frequency of planes and vectoring due to airport congestion	
Require noise exposure capacity limits	

- Session: Community Groups and Organizations Workshop (Book Authors spoke)
  - Airport Noise Mitigation Options
    - Control at the Source (FAR Part 36)
    - Operational Controls: thrust cutbacks, flight track alteration, preferential runway use, optimized performance descent
    - Operational Restrictions: limits on number and time of operations, noise-based landing fees, all effectively prohibited by 1990 ANCA
- Reduced thrust takeoffs
  - Small impact on noise
  - Huge impact on emissions

❖ **FAA Definition of Community**

➢ Bob Cameron: Interested in a point that Darlene made in the last session, that "community" comprises 6 different constituents in the FAA's viewpoint, of which "public" is only one (airport, airlines…& public). So, when the FAA mentions "community involvement" and "community feedback," they're not necessarily meaning "public."