



Aircraft Noise and Overflight Dispersion: Opportunities and Challenges

Aviation Noise & Emissions
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Introduction

- Dan Gardon, Noise Abatement Specialist
 - 5+ years experience in Noise Abatement
 - 3+ with Charlotte Douglas International Airport

- Contact: daniel.gardon@cltairport.com

Changing Noise Environment

- Source of many noise complaints is shifting
 - Previously single loud events lead to complaints
 - 'Frequency' or number of flights within a time period is becoming dominant source of complaint

A Heavy Lift:

- One method of resolving complaints:

Dispersion of flights

Methods of Creating Dispersion

- Procedural Dispersion
 - Preferential runway usage
 - Offset approaches
- At CLT, usage of Open SID procedures mimic pre-PBN procedures

CLT Background

- 570,000+ flights in 2019, making CLT the 7th busiest Airport by operations count
- 3 parallel runways (a 4th crosswind runway is rarely used)
- Easternmost runway 18R/36L is used only for arrivals
 - Almost 300,000 departures on only two runways

CLT Background

- CLT has historically favored the concept of dispersion
 - Dispersed procedures are considered more equitable
- Part 150 measures laid groundwork for procedures to implement dispersed patterns
- In 2015 implementation of the Charlotte Metroplex allowed for FAA design dispersed departure procedures

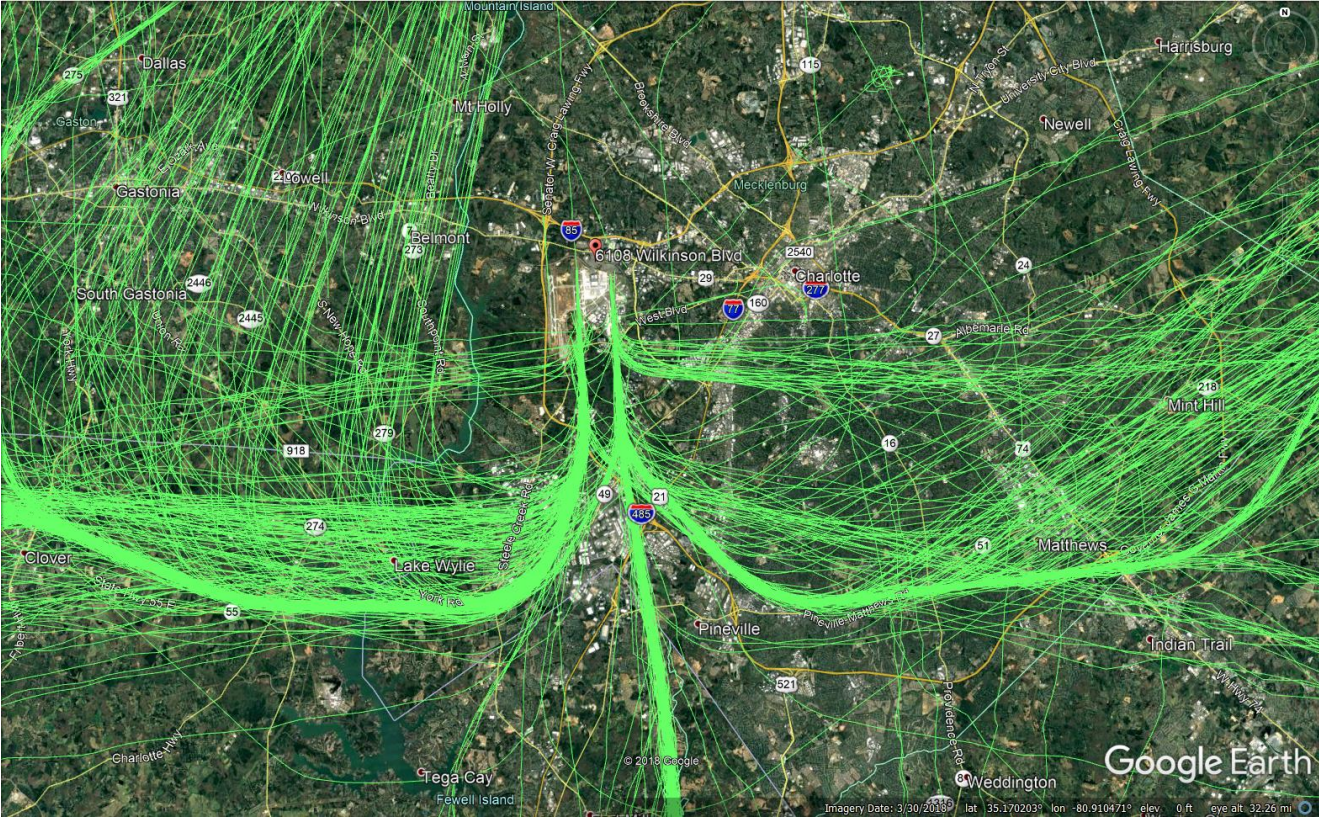
Open SID

-Definition: A PBN departure starting and ending with a defined path but containing a manual termination leg within the procedure

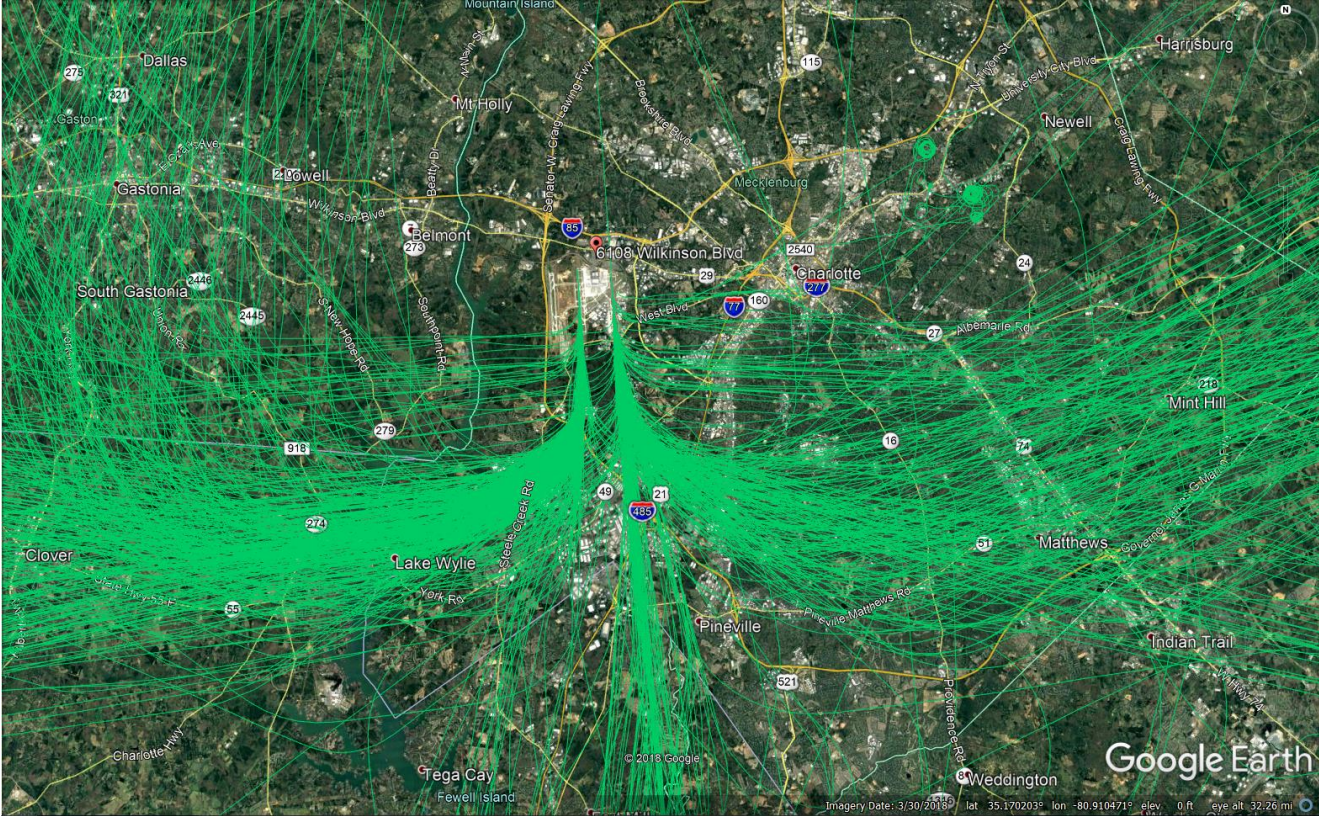
CLT uses a similar procedure

Specifically: aircraft fly runway heading for 2 miles, then are manually vectored to a fix some 20 miles away.

Departure Flight Tracks (2014)



Departure Flight Tracks (2019)



A Less than Perfect System

- Unable to disperse arrival traffic
- **More** Residents Affected (albeit affected by fewer overflights)
- Technical difficulty in implementation

Takeaways

These procedures can reduce repetitious flights over areas affected by departure streams

Open SID procedures *can* provide a benefit to a region, but not a complete solution to noise issues

For further questions/information, please reach out

Daniel.gardon@cltairport.com

