

Cambridge Airplane Noise Meeting

SEPTEMBER 6, 2017

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CITY OF CAMBRIDGE COMMUNITY DEVELOPMENT AND
MASSPORT CAC REPRESENTATIVE

Topics

Background

June Stats & Construction Update

33L RNAV & RNAV Study

Runway Selection

Overnight Procedure

Runway Use Plans

Background

- Long history of airport noise in Cambridge
- Participated many years with Logan Noise Citizen Advisory Committee
- Working with Massport Advisory Committee, Massport, FAA, elected officials and neighboring communities who share similar runway impacts
- Nature of the noise changed in 2013 with new RNAV procedure
- Recent construction in spring of 2017 and possibly weather have created additional overflights and noise

Runway Selection and Use



There are four major runway configurations at Logan Runway configuration selection is made by the FAA (ATC-tower)

Weather is a big factor but demand/traffic and aircraft mix are also a major influences.

Weather is not just what is happening in your backyard or even at Logan – it can be bad weather on the Eastern Seaboard or elsewhere, variations in the jet stream, etc.

Source: <http://massportcac.org/wp-content/uploads/2017/06/Final-BOS-Update-MCAC-Logan-101-060817.pdf>

Northwest Flow Operating Configuration



Runway 4R-22L Construction

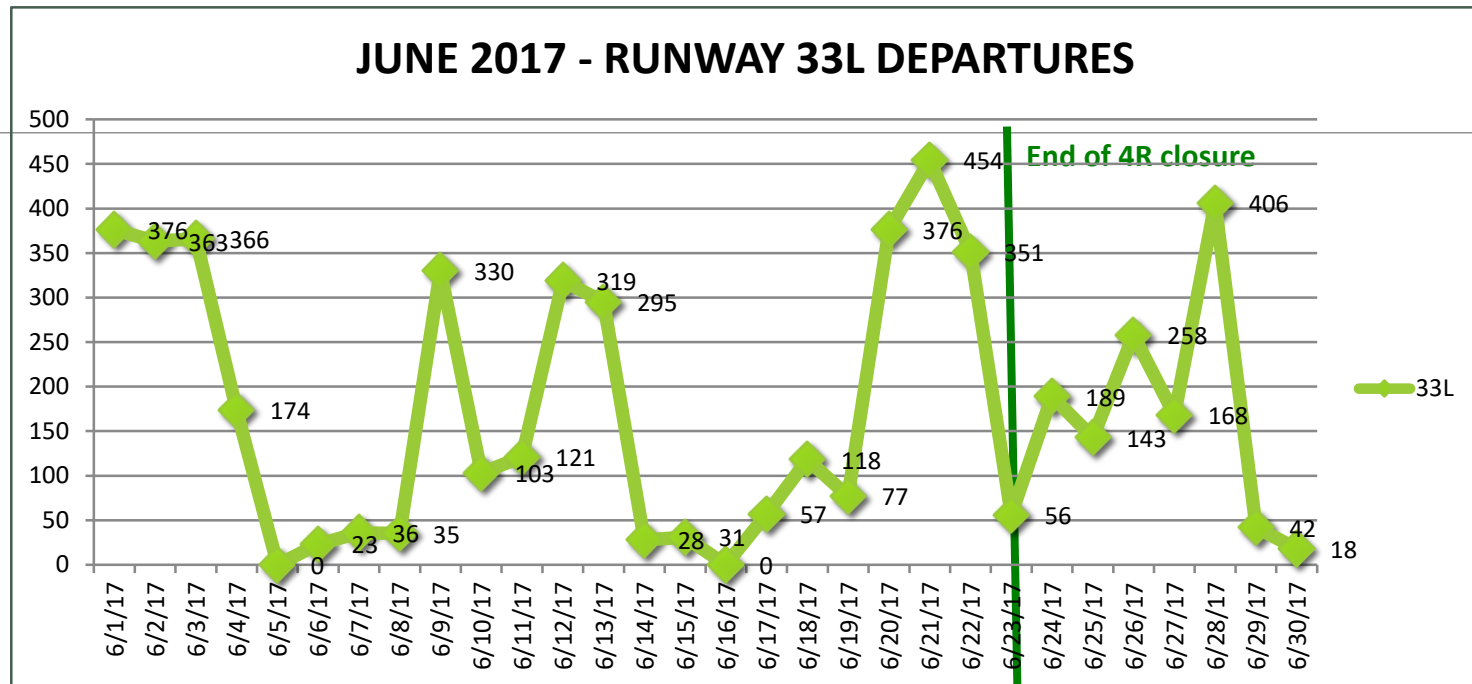
The maintenance work on the runway increased the usage of runway 33L. Work was completed on schedule and the runway reopened on June 24.

Certain restrictions stayed in place due to the use of tall cranes at the end of the runway for a companion project to install a safety approach light pier which may have added flights to 33L.

The work utilizing the cranes on the pier was completed by the end of August and all runway restrictions were anticipated to end at that time, subject to wind and weather.

Source: <http://www.massport.com/logan-airport/about-logan/noise-abatement/complaints/>

33L Flights in June 2017



Source data from Massport

4R/22L closure from May 15- June 23

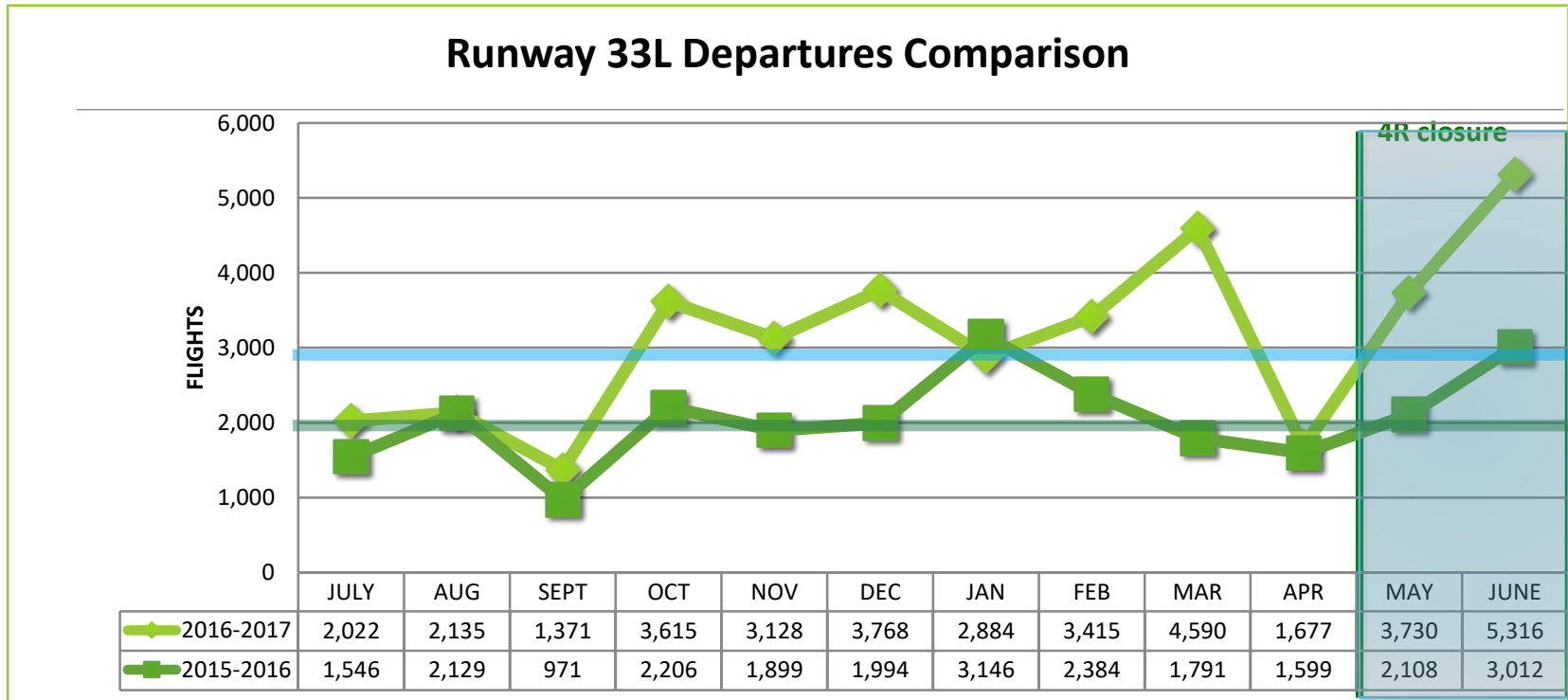
5316 departures on 33L (see next slide)

Most in one day 6/21 = 454, 81% of all departures

Most in one hour 39 (7-8pm on 6/21)

**High use on 6/28 – after 4R reopened because of weather (W/NW winds
<http://bit.ly/2uZ84s0>)**

33L 12-month comparison



Source data from Massport Runway Use Reports

52% increase in use past 12 mos. vs. prior 12 mos. (45% excluding May-June)

Monthly average 33L departures = 3000 vs. 2000 prior 12mos.

Change in weather pattern likely an influencing factor – still investigating.

Since 2007, runway 33L has averaged ~17% of all departures at Logan. Prior to 2007 and the opening of runway 14/32 it was 6%.

How did we get here? Runway 33L RNAV Process:

Logan Citizens Advisory Committee, Noise Study Phase II

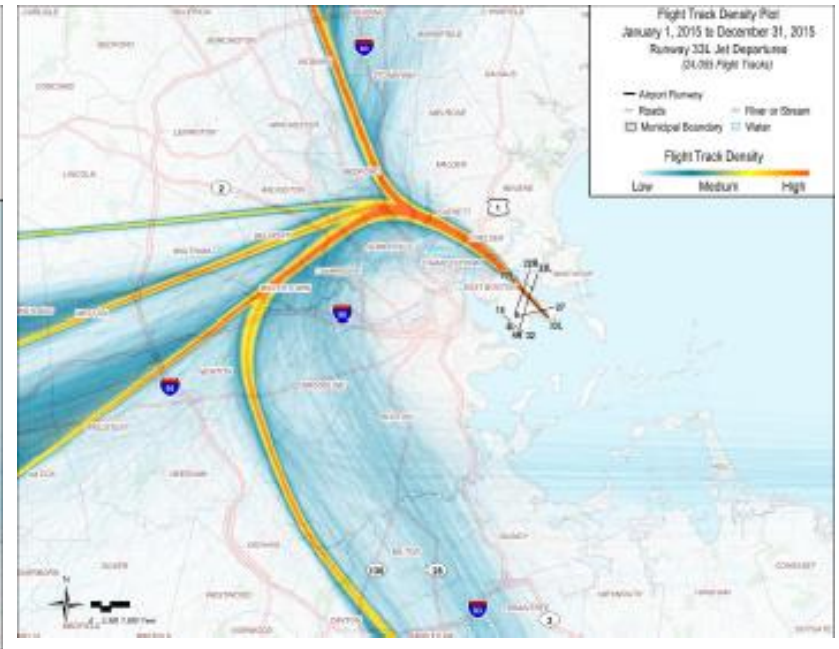
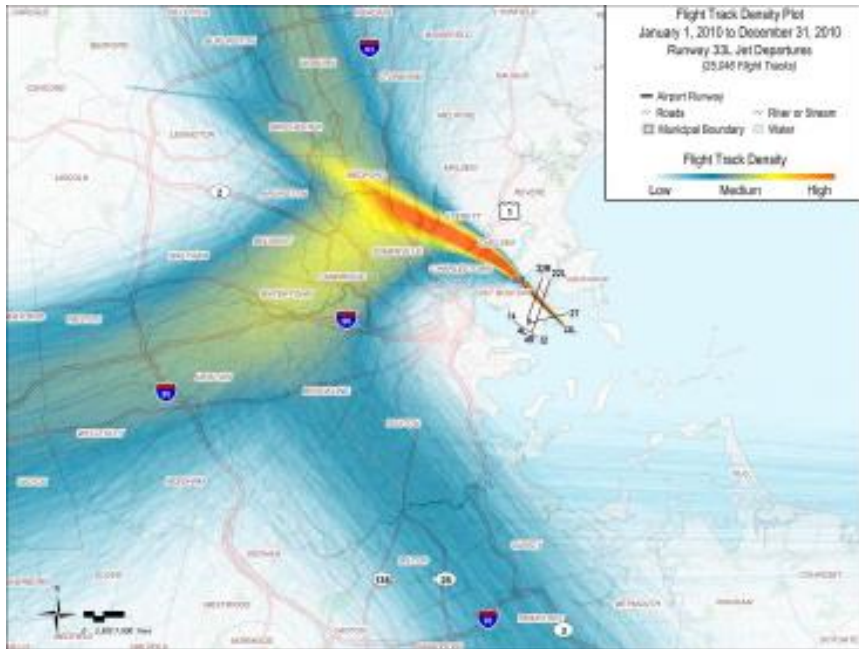
Starting in 2008 several alternative RNAV (Area Navigation) options for runway 33L were evaluated.

Intention was to reduce noise for everyone, brings planes out over less dense areas and to a higher altitude before turns

Proposed RNAV options were rejected by FAA for operational reasons

FAA suggested their own RNAV since runway 33L was the only runway without one

Runway 33L Departures Density Plots 2010 vs. 2015



RNAV Study Update

- Memorandum of Understanding (MOU) entered into in October 2016 between FAA & Massport to cooperate in analyzing opportunities for noise reduction through changes or amendments to PBN procedures.
- MIT Lab for Aviation and the Environment engaged to manage the RNAV Study.
- Public briefing held on February 22, 2017 at State Transportation Building
- Initial study results split opportunities into short and long term opportunities (Block 1 and Block 2).
- Several opportunities for improving 33L situation.

RNAV Study Focuses

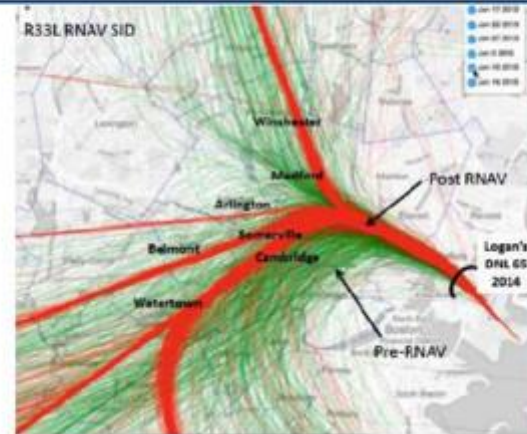
Study Focus is on Noise Impacts from RNAV and ID Solutions to Reduce Noise

- Reducing Concentration
- Finding opportunities for more over water flights
- Increasing altitude on departures
- Increasing altitudes on arrivals (steeper descent)
- Alternative precision over compatible land use
- Use alternative metrics to evaluate noise changes
- Focused, ~18 month study (to be completed spring 2018)
- Fast track ideas that are technically feasible and provide noise benefits with minimal or no noise dis-benefits

Runway 33L Departure Concepts

- **Thrust and Speed Management**
 - Fleet-specific performance analysis and noise modeling
- **Flight track dispersion**
 - **Discontinuous (Open SID) procedures**
 - Initial RNAV segment on departure, transition to vectors to introduce dispersion, return to RNAV

Review R27 and R4R departures also requested through public input



2015-2016 Noise Complaints at BOS with 12 Days of Departure Tracks



RNAV Study Schedule

- Initial results presented to Massport Advisory Committee Aviation Operations Subcommittee on May 5th
- Concepts currently under review by FAA.
- Next update at to-be-scheduled MCAC Subcommittee meeting (Sept.)
 - Block 1 to have more refined proposals
 - Block 2 more detailed analysis
- Finalize Recommendations - Winter 2017/2018
- Implementation/Final Report – Spring 2018

Overnight Procedure

- FAA Noise Abatement Order BOS ATCT 7004.1H, Effective October 28, 2007 defines an overnight procedure as:
 - Late Night Operations – when practical and traffic permits, the preferable runway configuration between midnight and 6:00 a.m. is Land Runway 33L, depart Runway 15R.
- This is also called a “head-to-head” procedure and was actually suspended by the FAA for a time in 2012-13 because of safety concerns.
- Massport and FAA say that the Airport Noise And Capacity Act Of 1990¹ (“Anca”) prevents setting curfews or denying requested time slots (some like 4L/22R were grandfathered)
- Logan now has 47 scheduled departures from 9 pm to midnight, and 20 arrivals and 20 departures scheduled between 5 am and 6 am compared to 2010 when there were 12 departures in that evening slot and 9 arrivals and 6 departures from 5-6 am. (based on FlightStats data for a sample day in July in 2017 and 2010).
- Weather or air traffic delays can now push too many flights past midnight (delay/overflow) to use the Late Night Operations and the 5-6 am slot has way too many flights for head-to-head to be practical or safe.

Runway Use Plans

Logan's Preferential Runway Advisory System (PRAS) was a set of targets for FAA runway assignments that were established by Massport, the FAA, and community representatives in 1983. PRAS set % targets for individual runways. The Logan CAC voted to abandon PRAS in April 2012.

Phase 3 Runway Use planning was focused on testing various runway rotation plans intended to minimize the repetitive use of runway configurations (night vs. morning). There was no majority consensus of support by the Logan CAC for completing these tests or funding their analysis. Other forms of Runway Use Plans (like PRAS) look to distribute/redistribute flight volume across runways or configurations based on % targets.

The Massport CAC is taking up initiatives including Runway Use to see what elements to propose continuing with.

Information on Logan Noise Study can be found here:

<http://www.bostonoverflight.com/>

Logan Runway use statistics are published monthly by Massport:

<http://www.massport.com/logan-airport/about-logan/noise-abatement/runway-use/>

Next Steps

- September meeting of Massport CAC to get update from MIT
- Recommendations in Winter 2017-2018 by MIT
- CAC to continue considering working on a runway use plan

Links

City of Cambridge webpage:

<http://www.cambridgema.gov/CDD/Transportation/regionalplanning/logannoisestudy>

Boston Logan Noise Airport Study (BLANS) website:

<http://www.bostonoverflight.com/>

Massport CAC Website: www.massportcac.org