



OAKLAND SIX

Noise Forum Presentation
APRIL 17, 2024

Background

- Oakland Six Departure implemented on January 25, 2024 to replace the Oakland Five Departure
 - Only available as a daytime departure (07:00 a.m. – 10:00 p.m.)
 - Changes initial departure heading from 296° Magnetic (Runway Heading) to 290° Magnetic

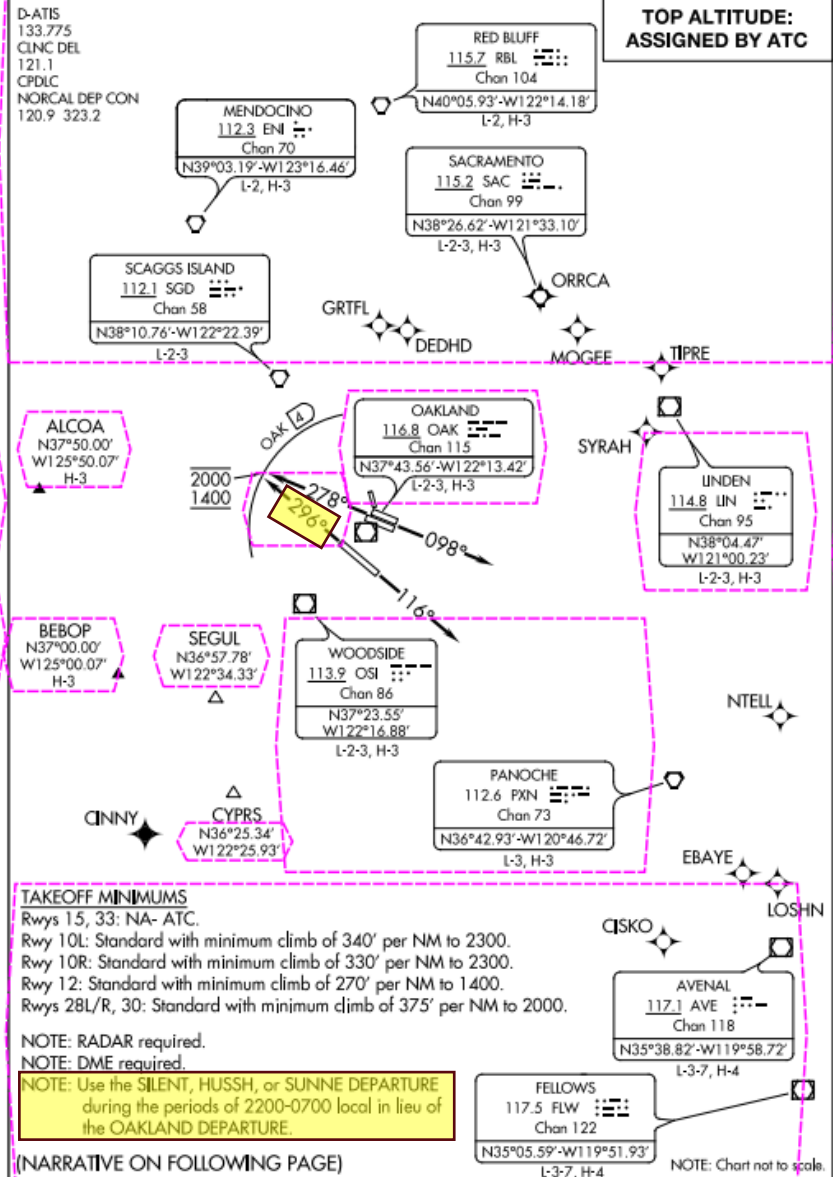




Key Points

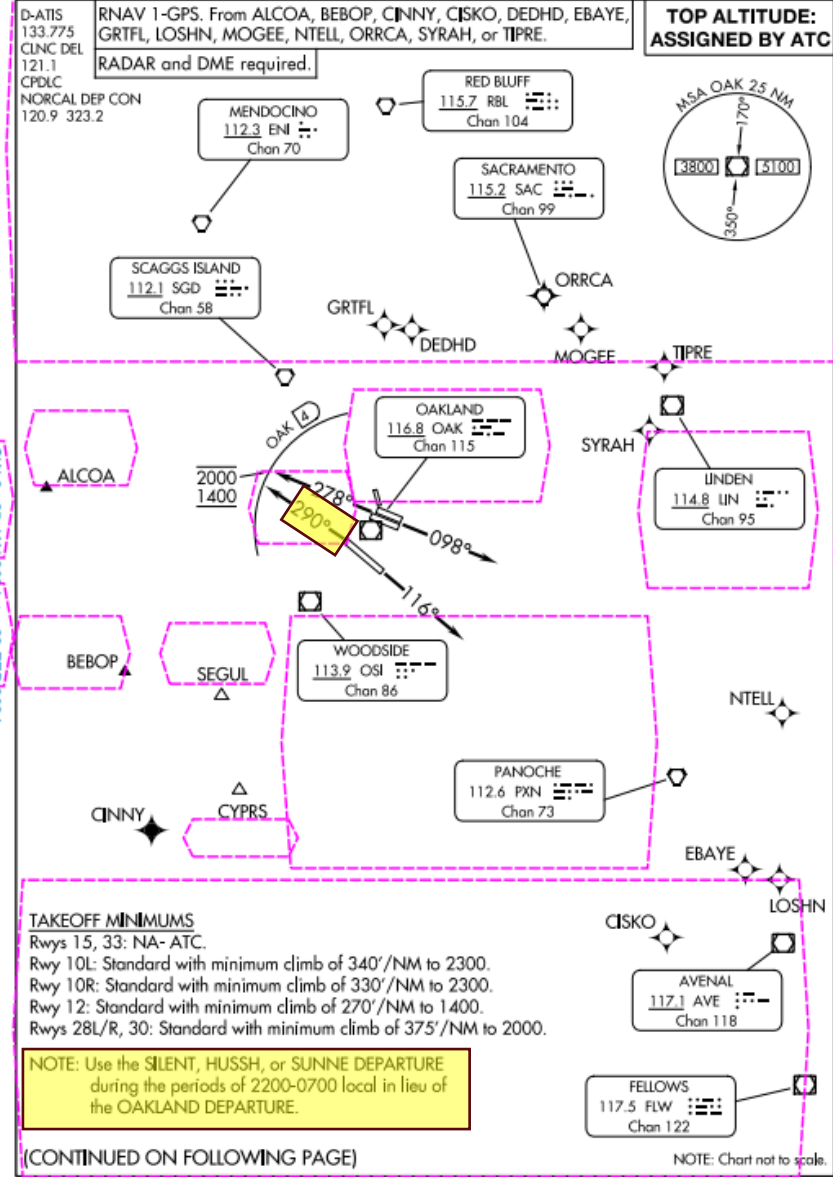
- Initial departure heading on Runway 30 changed from 296° to 290°. This change was requested by ATC for noise abatement purposes.
- Used as a daytime departure, primarily for aircraft traveling northbound and eastbound.
- Departing aircraft will still be able to utilize the CNDEL departure which maintains the 296° initial heading from Runway 30.
- CNDEL departure is used primarily by aircraft traveling southbound.

(OAK5.OAK) 21168
OAKLAND FIVE DEPARTURE METRO OAKLAND INTL (OAK)
 OAKLAND, CALIFORNIA



OAKLAND FIVE DEPARTURE
 (OAK5.OAK) 30JAN20

(OAK6.OAK) 24025
OAKLAND SIX DEPARTURE METRO OAKLAND INTL (OAK)
 OAKLAND, CALIFORNIA



OAKLAND SIX DEPARTURE
 (OAK6.OAK) 25JAN24

Chart Comparison



(OAK5.OAK) 21168
OAKLAND FIVE DEPARTURE

AL-294 (FAA)

METRO OAKLAND INTL (OAK)
OAKLAND, CALIFORNIA

DEPARTURE ROUTE DESCRIPTION

TAKEOFF RUNWAYS 10L/R: Climb on heading 098° for RADAR vectors to assigned route/fix, thence. . . .

TAKEOFF RUNWAY 12: Climb on heading 116° for RADAR vectors to assigned route/fix, thence. . . .

TAKEOFF RUNWAYS 28L/R: Climb on heading 278° for RADAR vectors to assigned route/fix. Cross 4 DME northwest of OAK VOR/DME at or above 1400 and at or below 2000, thence. . . .

TAKEOFF RUNWAY 30: Climb on heading 296° for RADAR vectors to assigned route/fix. Cross 4 DME northwest of OAK VOR/DME at or above 1400 and at or below 2000, thence. . . .

. . . .maintain ATC assigned altitude. Expect filed altitude ten minutes after departure.

LOST COMMUNICATIONS: If not in contact with departure control after reaching 5000', continue climb to assigned altitude and proceed direct to assigned route/fix.

OAKLAND FIVE DEPARTURE
(OAK5.OAK) 30JAN20

OAKLAND, CALIFORNIA
METRO OAKLAND INTL (OAK)

(OAK6.OAK) 24025
OAKLAND SIX DEPARTURE

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TAKEOFF RUNWAYS 28L/R: Climb on heading 278° for RADAR vectors to assigned route/fix. Cross 4 DME northwest of OAK VOR/DME at or above 1400 and at or below 2000, thence. . . .

TAKEOFF RUNWAY 30: Climb on heading 290° for RADAR vectors to assigned route/fix. Cross 4 DME northwest of OAK VOR/DME at or above 1400 and at or below 2000, thence. . . .

. . . .maintain ATC assigned altitude. Expect filed altitude ten minutes after departure.

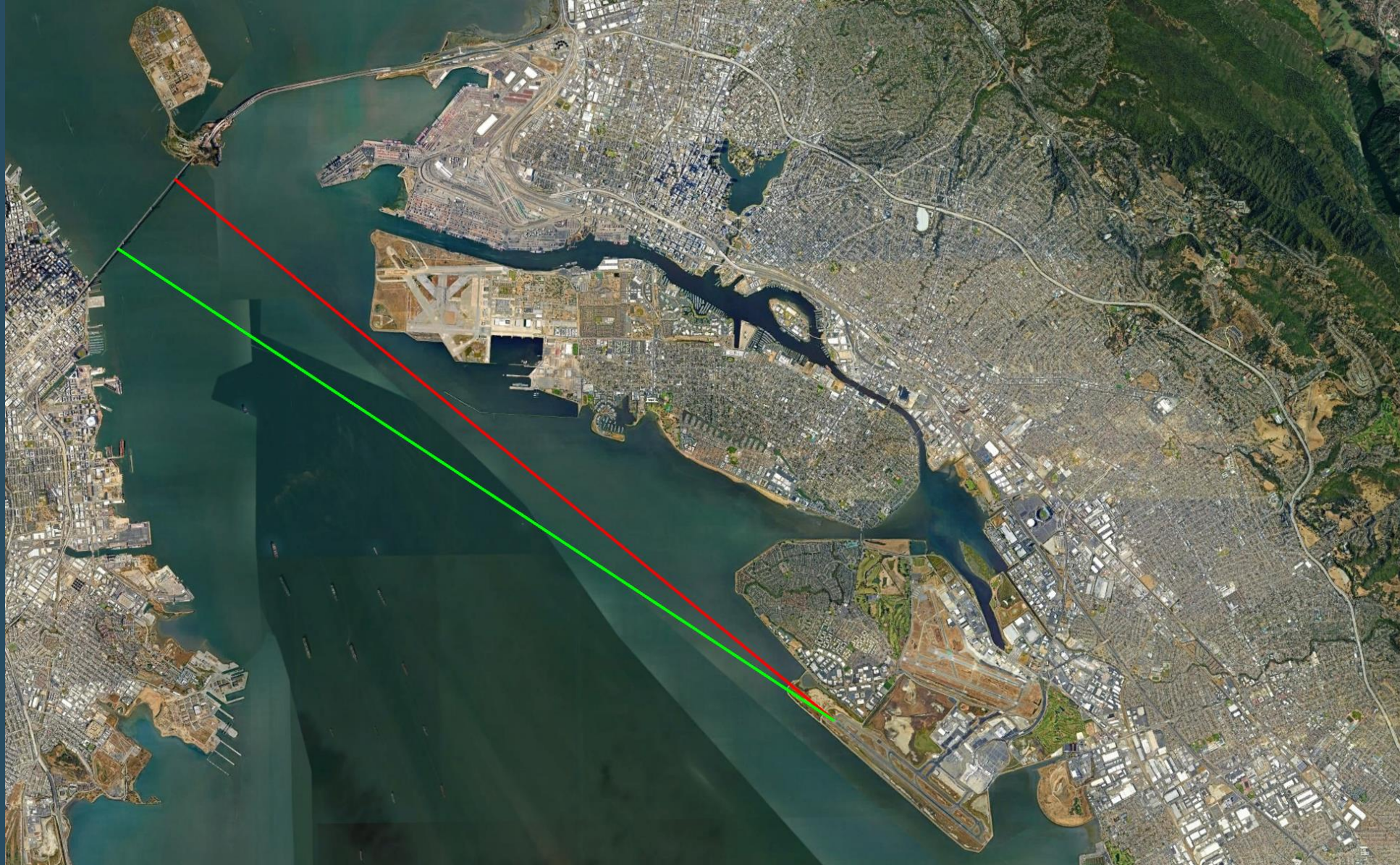
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OAKLAND SIX DEPARTURE
(OAK6.OAK) 25JAN24

OAKLAND, CALIFORNIA
METRO OAKLAND INTL (OAK)

Chart Comparison





OAKLAND SIX Initial Departure Heading Comparison

Red Track = OAKLAND Five
/ CNDEL Five (296°
Heading)

Green Track = OAKLAND
Six (290° Heading)



Noise Metric Definitions

Sound Exposure Level (SEL) :

A metric that represents all the acoustic energy (a.k.a. sound pressure) of an individual noise event as if that event had occurred within a one-second time period. SEL captures both the level (magnitude) and the duration of a sound event in a single numerical quantity, by "squeezing" all the noise energy from an event into one second. SEL provides a uniform way to make comparisons among noise events of various durations.

Community Noise Equivalent Level (CNEL) :

A metric used to reflect cumulative noise exposure to aircraft noise over a 24-hour period allowed by the FAA for use in California. CNEL weights evening (7 p.m. – 10 p.m.) single events by nearly 5 dB and nighttime (10 p.m. – 7 a.m.) single events by 10 dB to account for higher sensitivities to noise during those periods. The decibel weightings are equivalent to factors of three and ten on number of aircraft operations during the evening and nighttime periods, respectively.

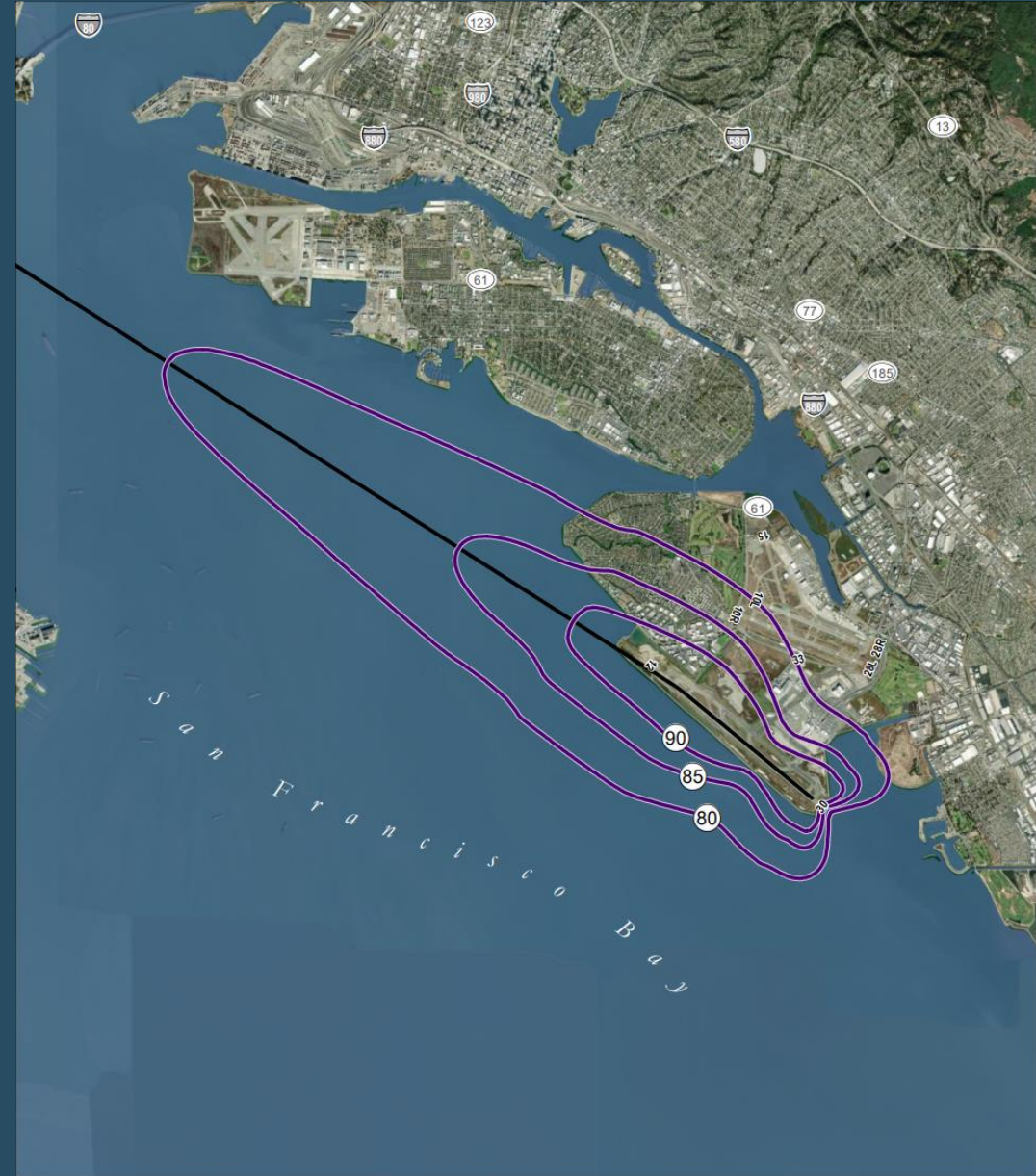
FAA, https://www.faa.gov/regulations_policies/policy_guidance/noise/basics

FAA, https://www.faa.gov/regulations_policies/policy_guidance/noise/community

Sound Exposure Level (SEL) Noise Contour Comparison

OAKLAND FIVE

OAKLAND SIX





Sound Exposure Level (SEL) Noise Contour Comparison

OAKLAND FIVE
(Green) &
OAKLAND SIX
(Purple)



RWY 30 Daytime Departures Jan-Dec 2023

48,561 Total Aircraft



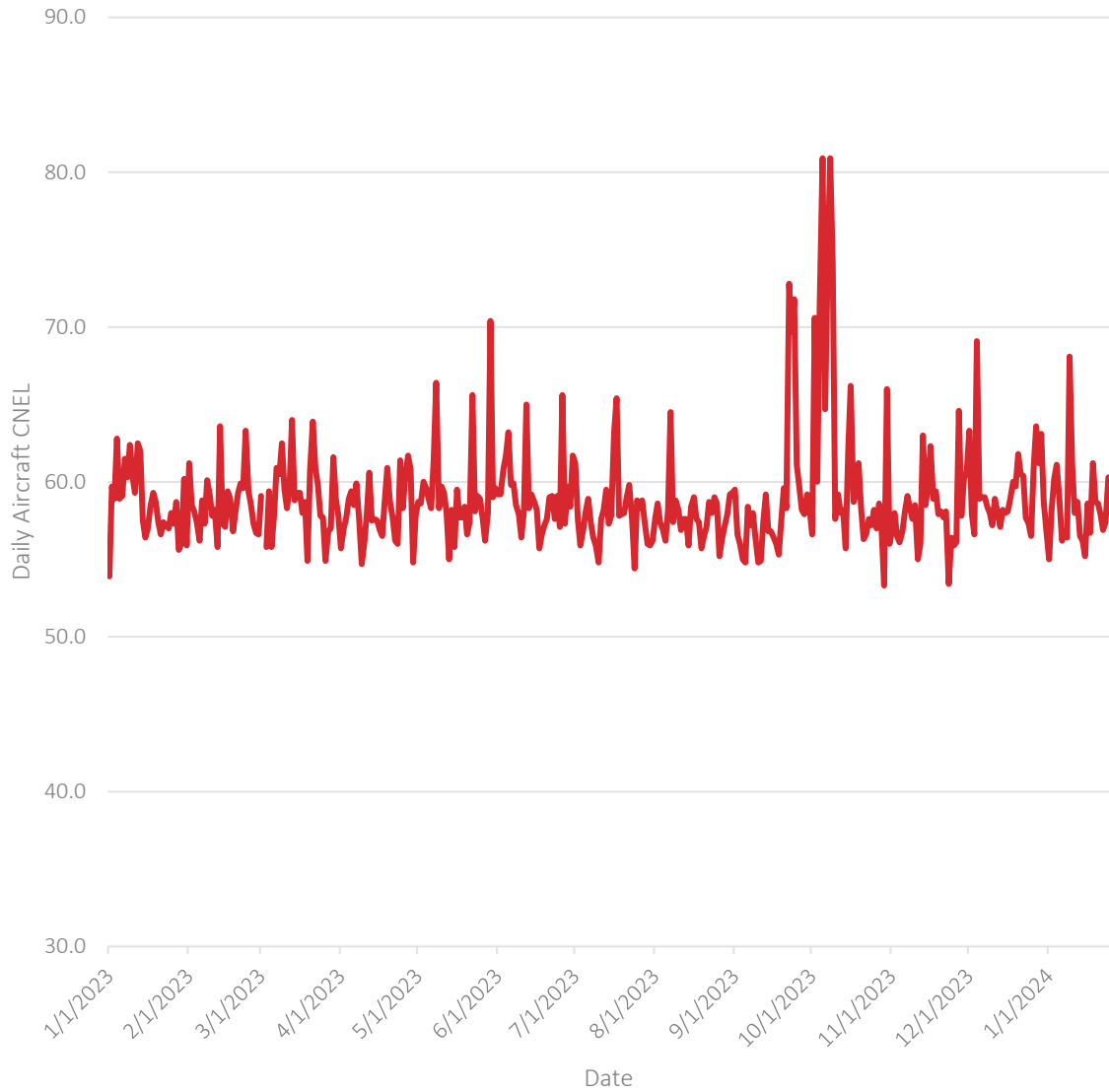
RWY 30 Daytime Departures Feb-Mar 2024

6,745 Total Aircraft
1,882 (28%) Utilizing OAKLAND
SIX Departure



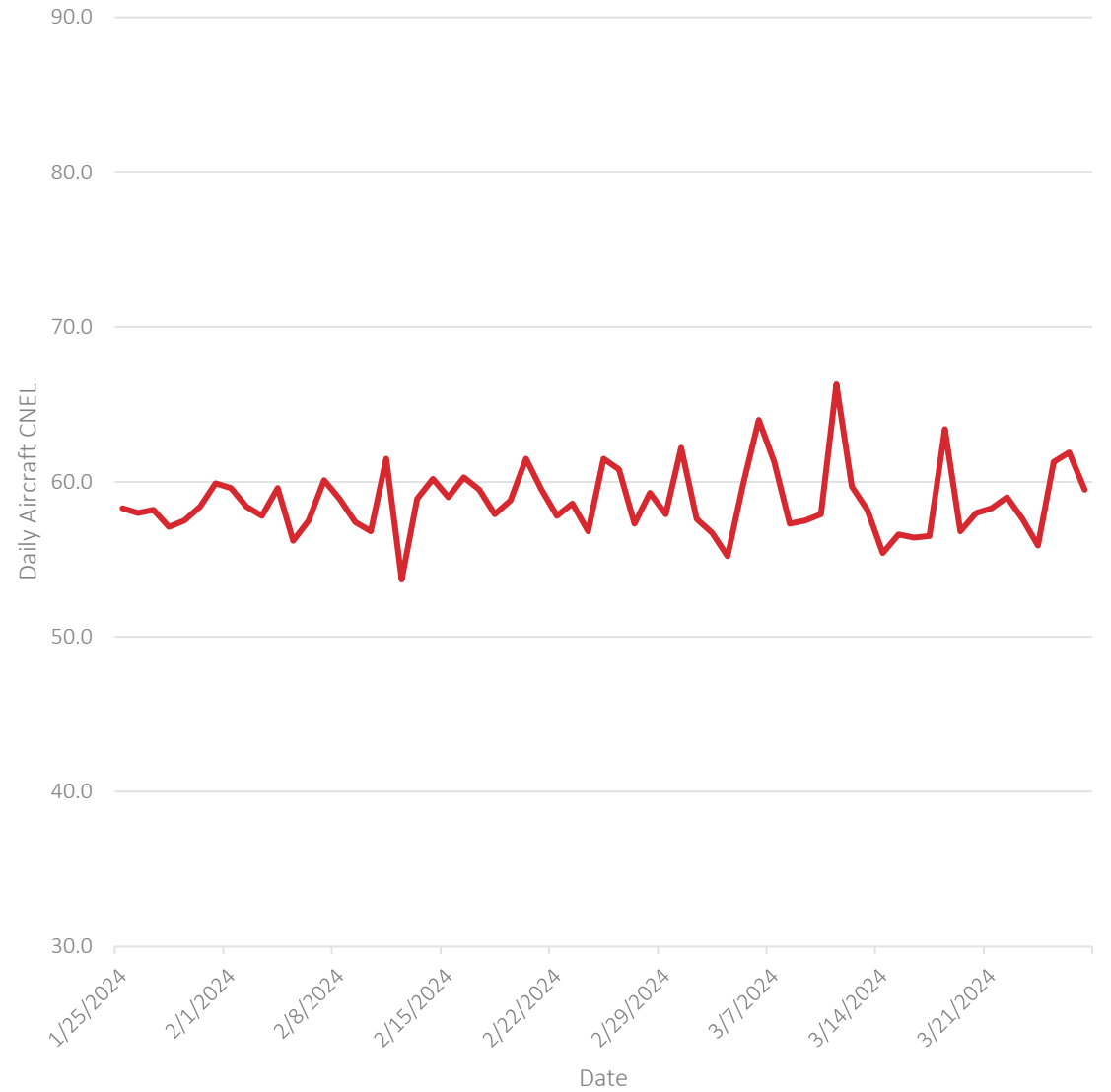
Noise Monitor Locations Evaluated

NMT5 Daily Aircraft CNEL



Average Community Noise Equivalent Level (CNEL): 62.6

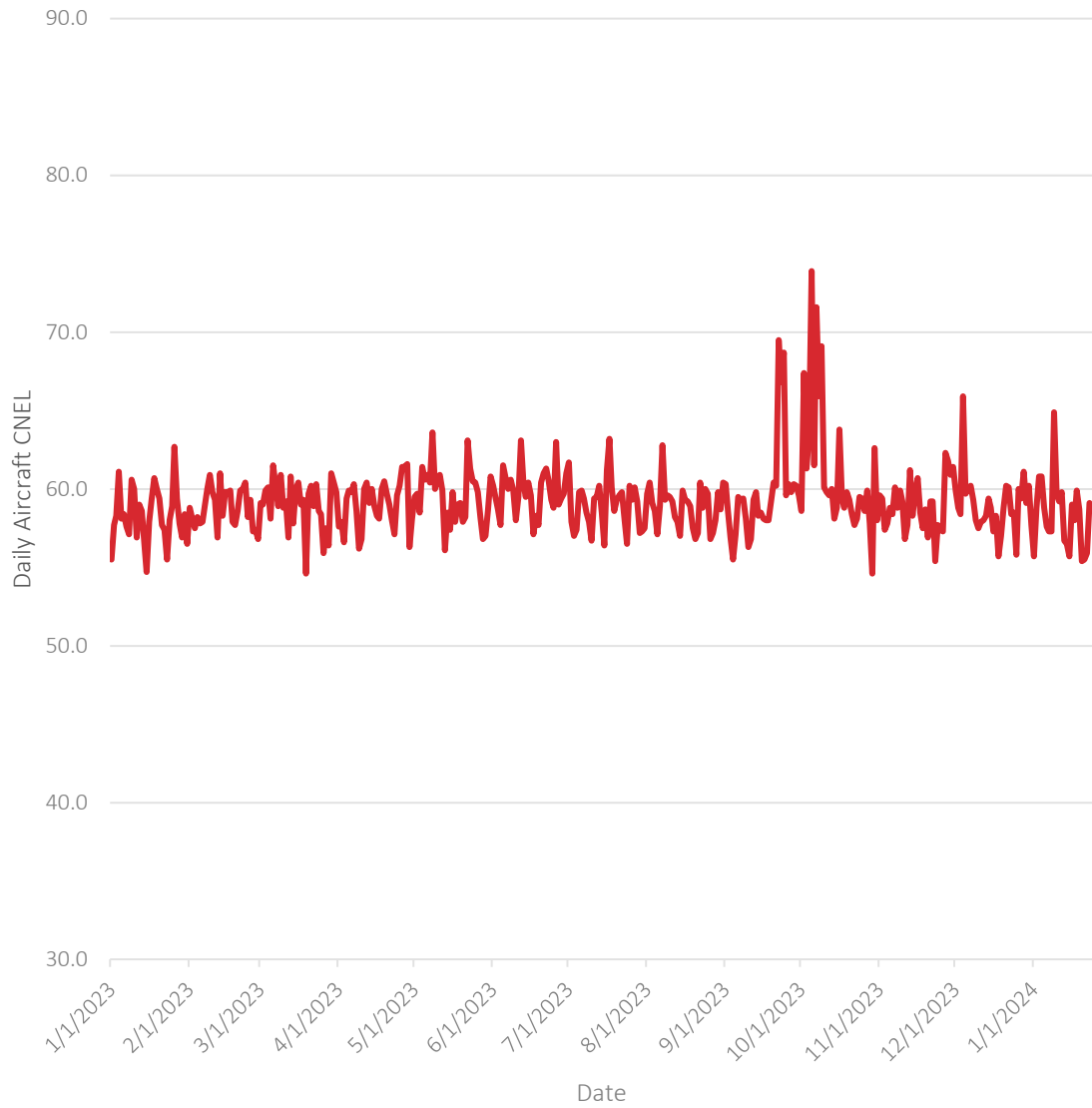
NMT5 Daily Aircraft CNEL



Average Community Noise Equivalent Level (CNEL): 59.4

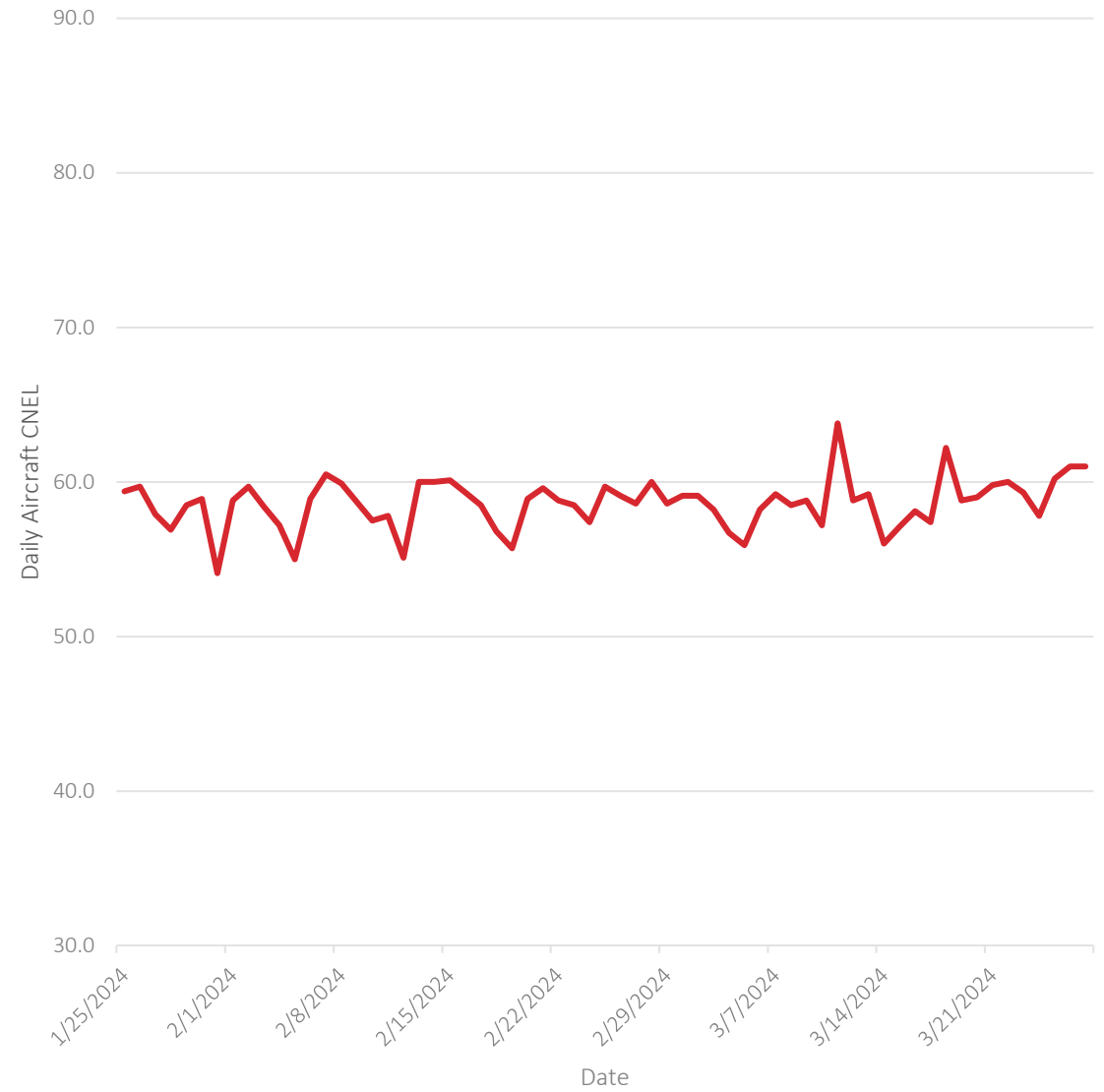


NMT6 Aircraft CNEL



Average CNEL: 60.2

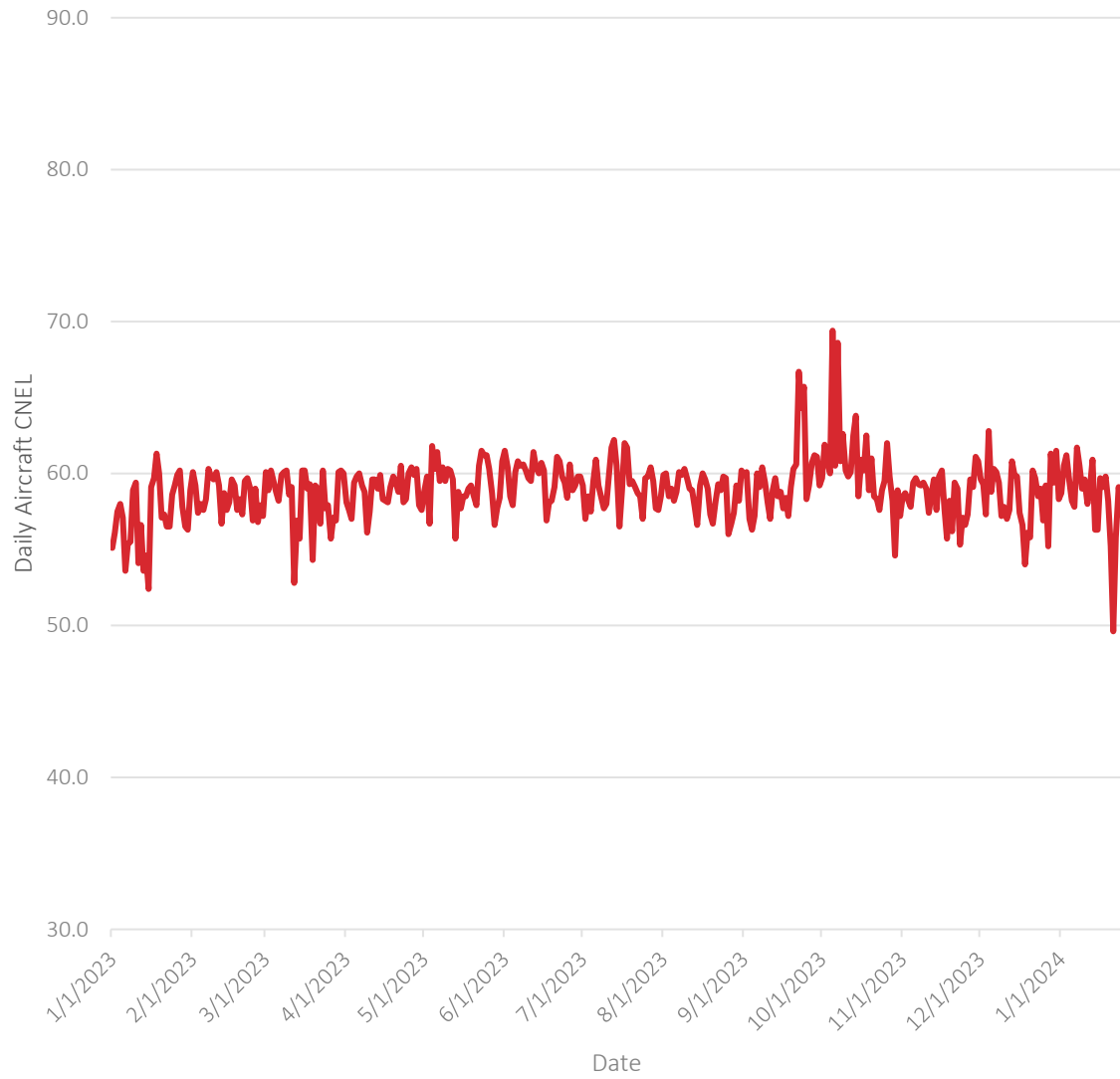
NMT6 Aircraft CNEL



Average CNEL: 58.9

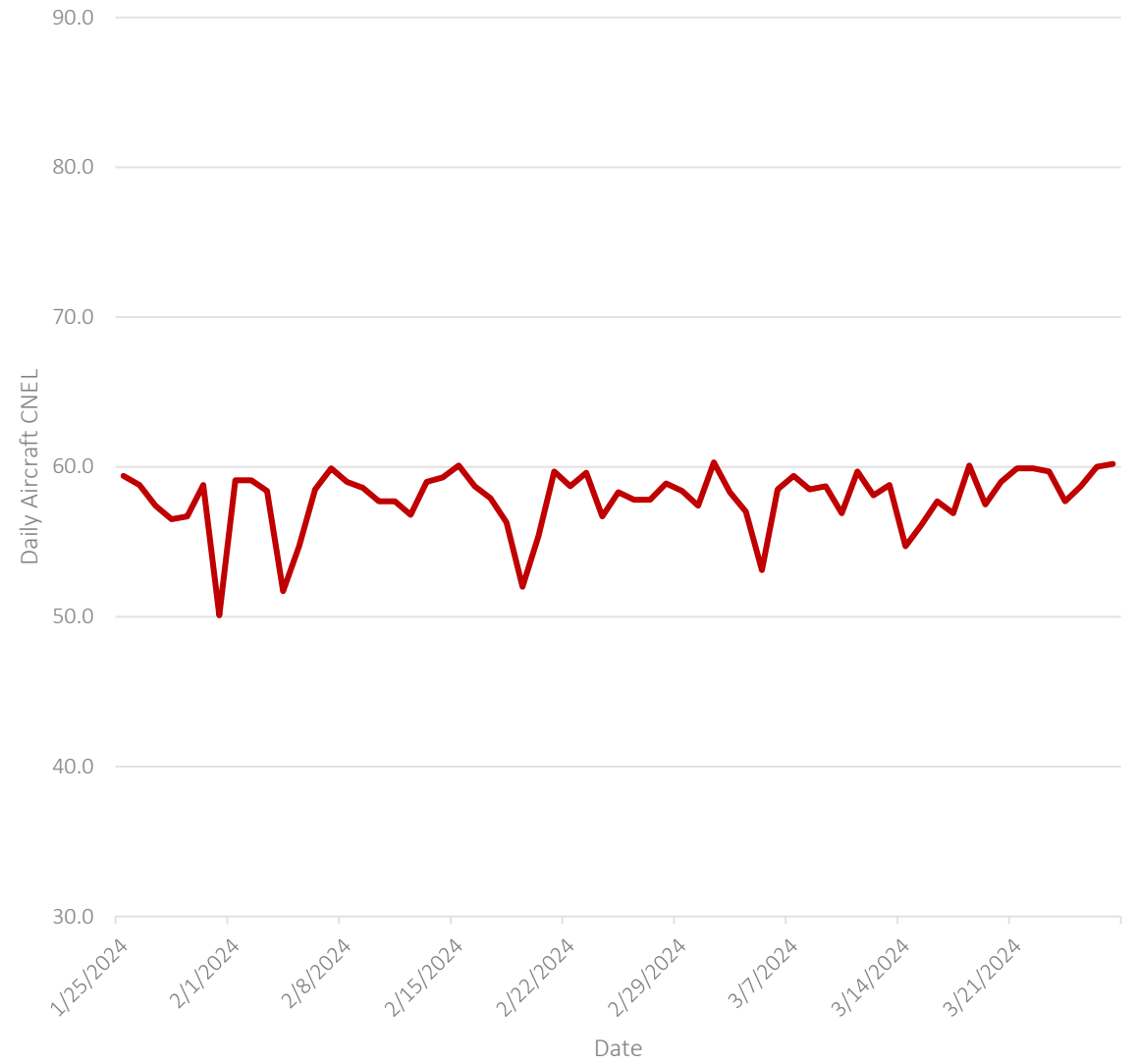


NMT7 Aircraft CNEL



Average CNEL: 59.4

NMT7 Aircraft CNEL



Average CNEL: 58.3





February 6, 2024

296° (Red)
Sound Exposure Level
NMT 5: 78.7
NMT 6: 80.5
NMT 7: 81.4

290° (Green)
Sound Exposure Level
NMT 5: 77.6
NMT 6: 80.1
NMT 7: 81.0

*737-800 Aircraft



February 13, 2024

296° (Red)
Sound Exposure Level
NMT 5: 79.9
NMT 6: 81.8
NMT 7: 82.9

290° (Green)
Sound Exposure Level
NMT 5: 79.2
NMT 6: 81.9
NMT 7: 81.2

*737-800 Aircraft

Questions?

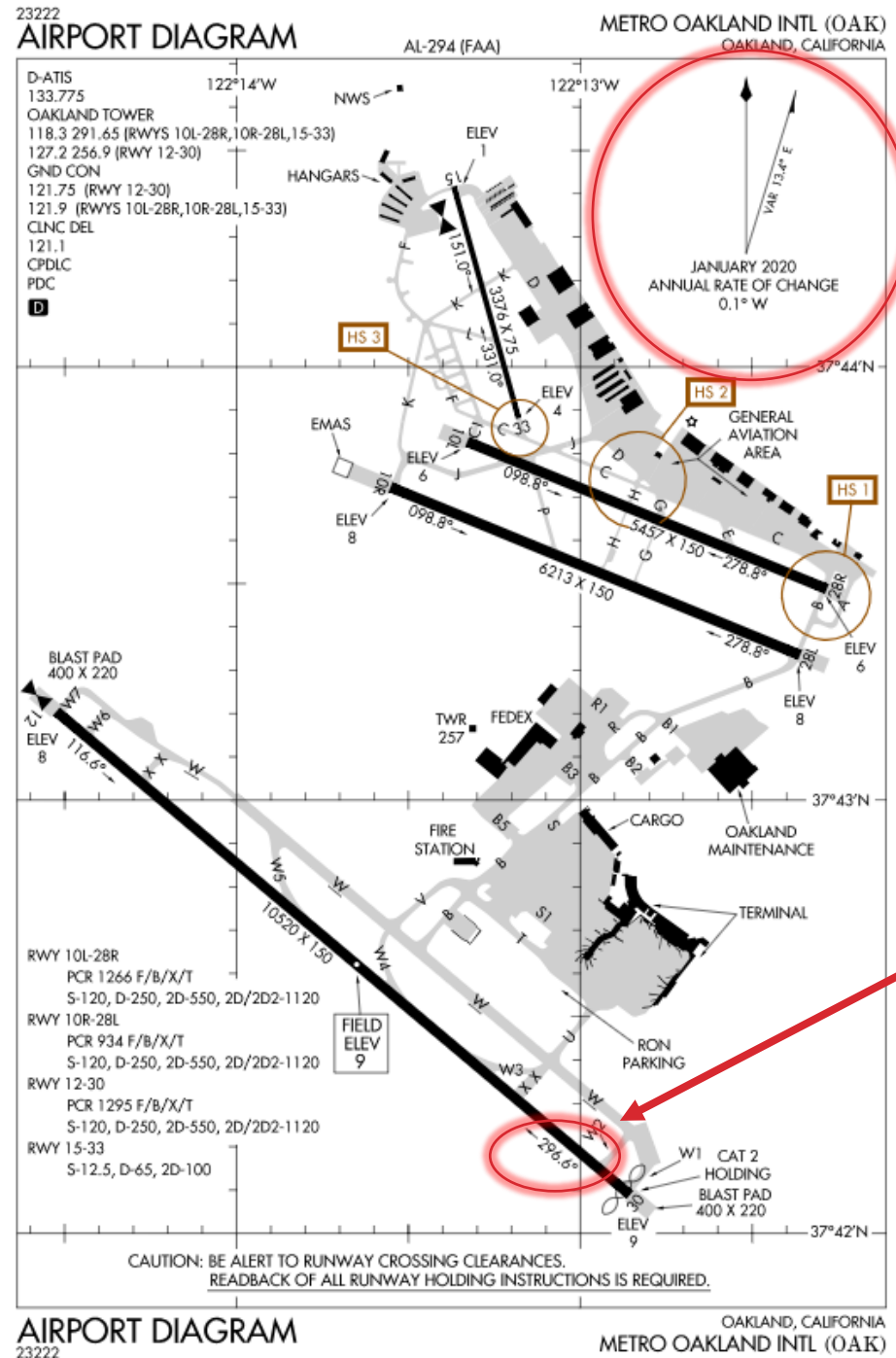


Thank you

Supplemental Slides

Airport Diagram

- Runway heading for Runway 30 is 296.6°
- MAGVAR is 13.4° E
- Annual Rate of change is .1° W



Magnetic Variation at OAK = 13.4° E as of January 2020

Runway heading for RWY 30 is 296.6° (M).



(OAK6.OAK) 24025

OAKLAND SIX DEPARTURE

AL-294 (FAA)

METRO OAKLAND INTL (OAK)

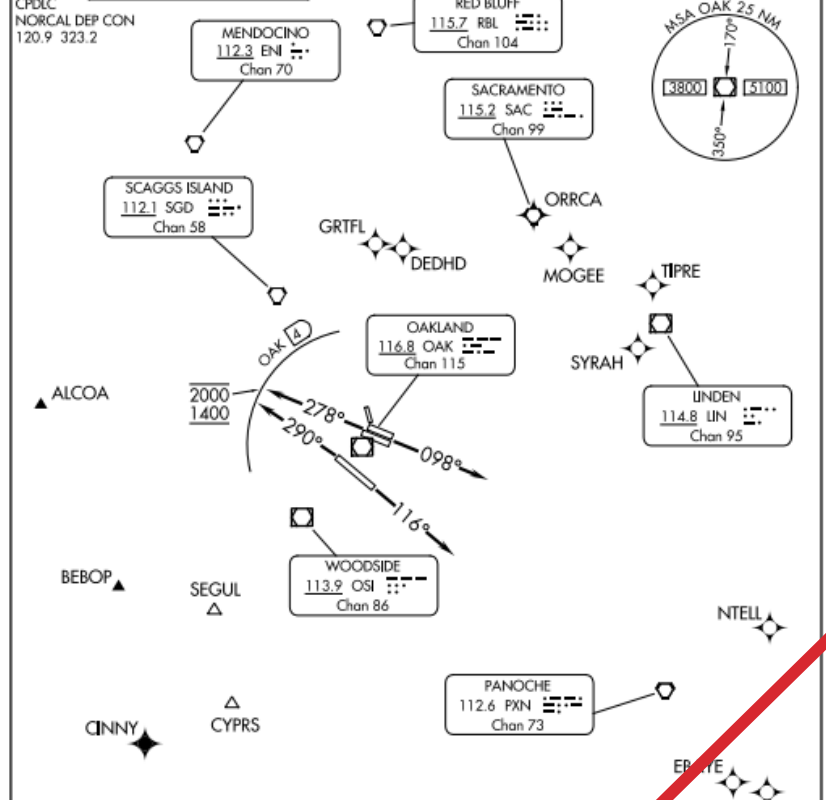
OAKLAND, CALIFORNIA

D-ATIS 133.775
 CLNC DEL 121.1
 CPDLC
 NORCAL DEP CON 120.9 323.2

RNAV 1-GPS. From ALCOA, BEBOP, CINNY, CISKO, DEDHD, EBAYE, GRTFL, LOSHN, MOGEE, NTELL, ORRCA, SYRAH, or TIPRE.

**TOP ALTITUDE:
 ASSIGNED BY ATC**

RADAR and DME required.



TAKEOFF MINIMUMS
 Rwy 15, 33: NA- ATC.
 Rwy 10L: Standard with minimum climb of 340'/NM to 2300.
 Rwy 10R: Standard with minimum climb of 330'/NM to 2300.
 Rwy 12: Standard with minimum climb of 270'/NM to 1400.
 Rwys 28L/R, 30: Standard with minimum climb of 375'/NM to 2000.

NOTE: Use the SILENT, HUSSH, or SUNNE DEPARTURE during the periods of 2200-0700 local in lieu of the OAKLAND DEPARTURE.

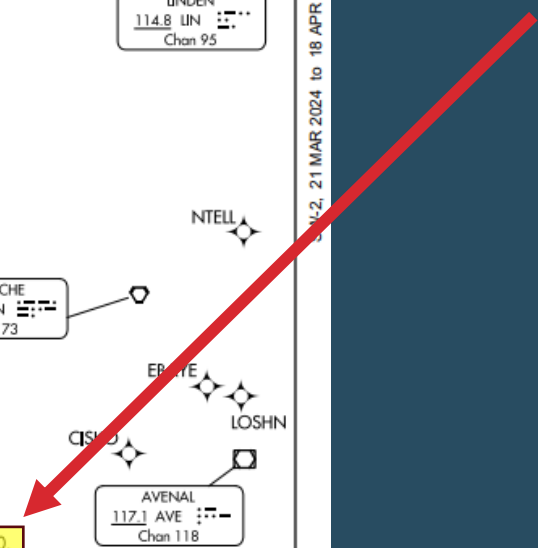
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NOTE: Chart not to scale.

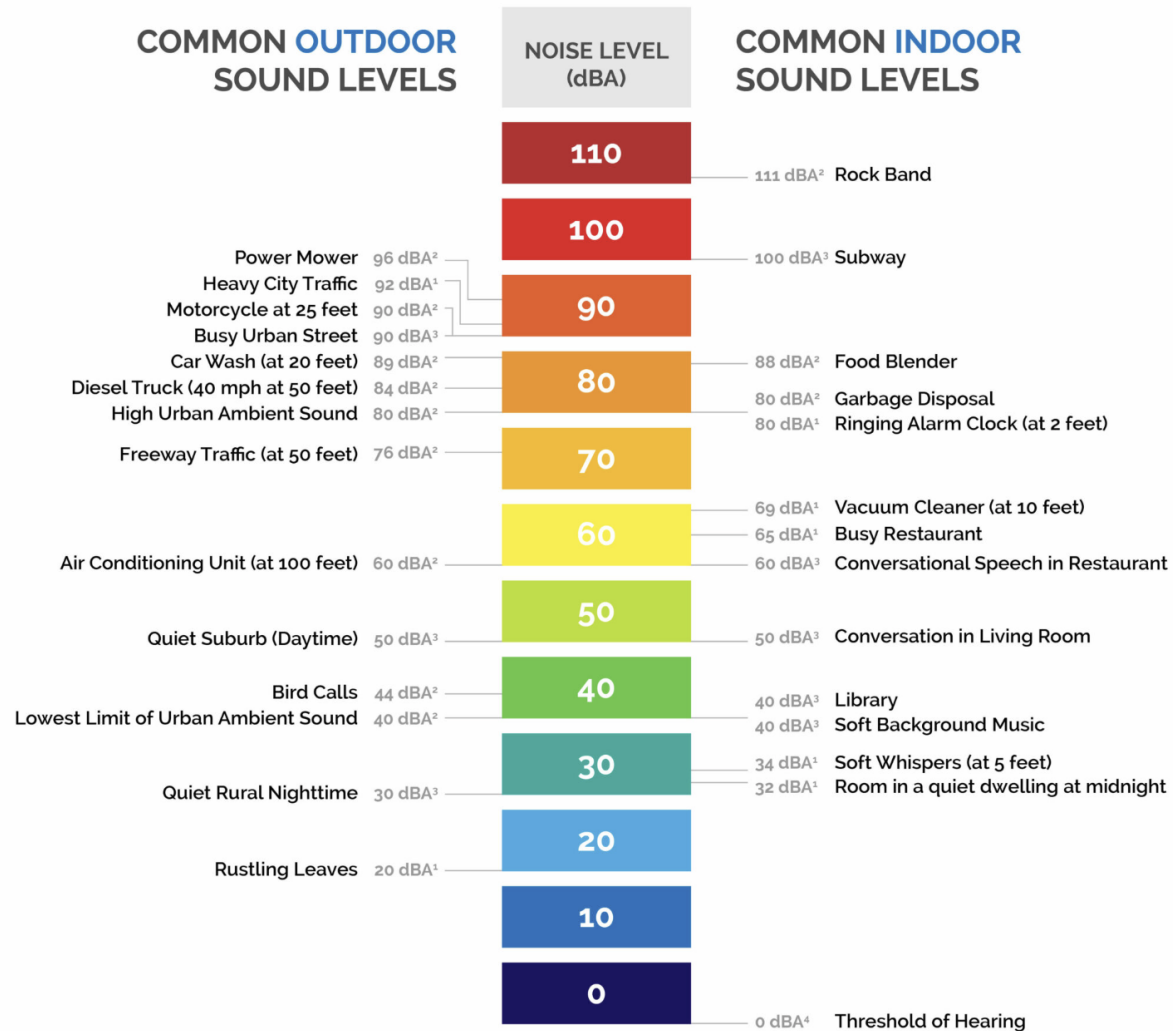
OAKLAND SIX DEPARTURE
 (OAK6.OAK) 25JAN24

OAKLAND, CALIFORNIA
 METRO OAKLAND INTL (OAK)

The 375 ft. climb gradient to 2000 ft. is used on procedure to ensure aircraft reach minimum vectoring altitude (MVA) in sufficient time for ATC to initiate radar vectors and keep aircraft in the 2000 ft. MVA if operational hold down is necessary



Comparative Noise Levels (dBA)



Single Event Sound Level

