

June 1, 2016  
Palo Alto, California

Mr Glen Martin  
Regional Administrator, Western-Pacific Region  
Federal Aviation Administration

Dear Mr. Martin,

We are grateful for your willingness to consider suggestions from community organizations for modifications to the airspace around SFO. We are not professional airspace designers, but have strong technical backgrounds and have, by necessity, studied the situation in some detail over the year.

While the PBN principle of concentrating flight paths into narrow corridors offers predictability and efficiency, it creates “sacrificial noise corridors” that cause excessive disruption to people who live underneath them. Highways of concentrated low altitude air traffic are harmful. Affected residents all over the country and around the world are outraged.

We believe that most people would be willing to accept a little noise in the interest of equity. The British Civil Aviation Authority (CAA) recently published a document ([Performance-based Navigation. Airspace Design Guidance: Noise mitigation considerations when designing PBN departure and arrival procedures, CAP 1378](#)) describing a variety of feasible design philosophies that take advantage of PBN, some of which distribute noise more equitably.

We submitted requests through Rep. Eshoo’s office in the past. We would like again to offer some general design principles and suggestions that we think should be investigated by the FAA.

We offer these as our two main design principles:

- Noise should be eliminated for everyone as much as possible
- What noise cannot be eliminated should be dispersed so that everyone who benefits from the airport bears a share of the noise burden, to the extent reasonably possible.

In the long run, the only solutions that will gain wide community acceptance are ones that explicitly address noise and distribute it more equitably.

We understand that *perfectly* equitable distribution is impossible, but we can certainly improve on the situation we have now. We also understand that achieving these goals will necessitate an ongoing process.

Here are some specific requests that we would like the FAA to consider:

**1. Abandon the use of the MENLO waypoint.**

- a. A 4000-foot waypoint over a densely populated area is unacceptable, unsustainable, and unnecessary when a huge body of water is directly available less than 2 miles away (see Figure 1).
- b. Adopt one or more waypoints east or southeast of MENLO to enable arrivals to fly at higher altitudes over residential areas and take full advantage of the length of the Bay.

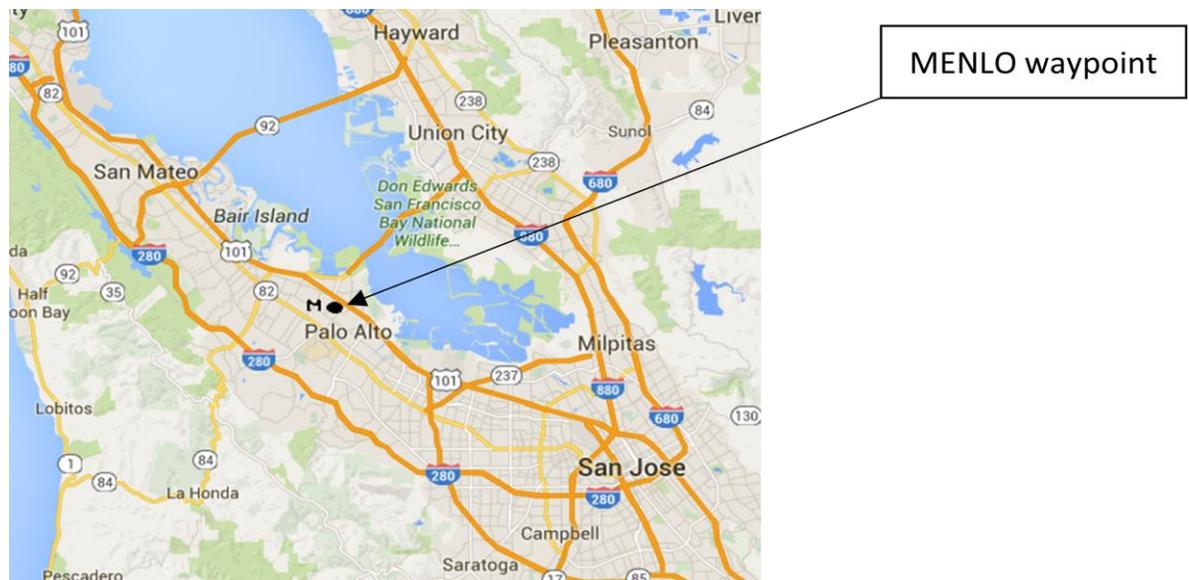


Figure 1 – The 4,000-ft MENLO waypoint is located in a residential neighborhood even though the Bay is less than 2 miles away.

- 2. Direct Pt Reyes arrivals to use primarily the Pt Reyes east leg (over the Bay) for immediate relief. Then address, if necessary, the concentration issue of low altitude Pt Reyes west leg arrivals over Palo Alto.**
- 3. Take advantage of the full extent of the Bay for descents.**
  - a. Guide arrivals from the south up the uninhabited or industrial areas east of the Santa Clara Valley/US 101 so that planes avoid residential areas.
  - b. Then guide arrivals through one or both traffic gaps as shown in figure 2 to get to the Bay for final approach.

## Greater Bay Area – All Airports

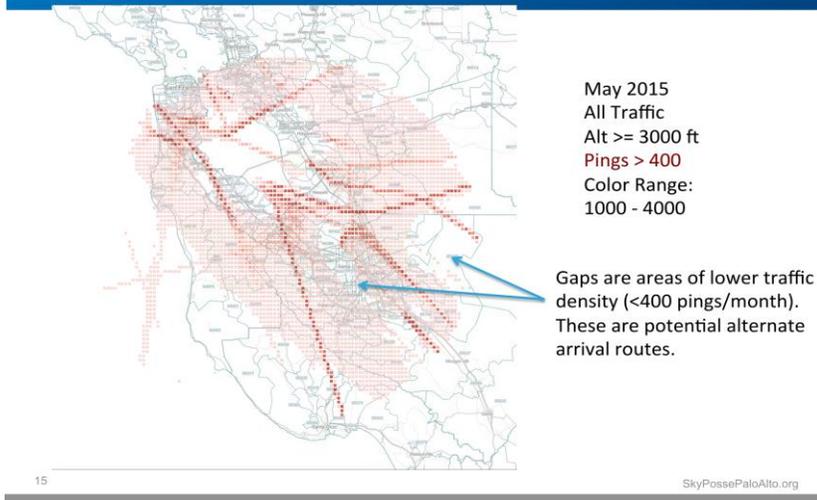


Figure 2 - May 2015 radar pings for flights above 3000 feet. Gap areas are indicated by blue arrows.

- c. Take advantage of the full length of the Bay by approaching from the southern shore of the Bay as conceptualized in Figure 3. Scenario modeling should be done to identify the optimal path that would maximize altitudes over populated areas. Given that the distance to SFO, including industrial areas north of US 101, would be at least 23 nautical miles, planes could remain at high altitudes over populated areas. As a result, airplane noise may barely be noticeable over ambient noise levels.



Figure 3 – Full-Bay conceptual approach over the Bay.

4. **Use the highest possible angle of descent.** The current angle of 2.85° is quite conservative.
  - a. See page 90 of CAA document mentioned above for a description of a slightly steeper approach.
  - b. Heathrow currently uses 3° but the aviation industry has determined that Heathrow could use 3.2° for its existing runways and a proposed new runway in 2030; according to Heathrow, 3.5° would be feasible by 2040 (see page 26, section 4.3.2 on steeper approaches of [Heathrow's North-West Runway Air and Ground Noise Assessment](#)).
  - c. The Frankfurt airport is already using a 3.2° slope on its Runway Northwest. See [http://ec.europa.eu/transport/modes/air/ses/ses-award/projects/doc/internationalairportreview\\_2015\\_q4\\_frankfurtgbas.pdf](http://ec.europa.eu/transport/modes/air/ses/ses-award/projects/doc/internationalairportreview_2015_q4_frankfurtgbas.pdf)
  - d. Hannover, Germany is testing 4.5° (<http://en.hannover-airport.tv/video.html?v=8B>)
  
5. **Route night traffic over the full length of the Bay**
  - a. SFO departures should not have exclusive use of the full length of the Bay at night, which forces night arrivals over mid-peninsula residents.
  - b. The low volume of SJC air traffic at night should allow SFO approaches from the south end of the Bay.
  
6. **Sequence planes over the ocean or unpopulated areas**, but not over residential communities to minimize the frequency of disruptions that impact the health and well-being of residents.
  
7. **Fix unstable descent and low altitude vectoring, level flying, and speed changes** which are noisy and fuel inefficient.
  
8. **Consider a 'herringbone' or 'trident' approach pattern to reduce concentration over populated areas.** This is apparently feasible in Great Britain. (See "Multiple PBN Routes for Dispersal" on page 88 of the CAA document mentioned above or page 17 of <http://www.hacan.org.uk/resources/reports/flight.paths.report.pdf>). It would take advantage of the full capability of NextGen while providing fair distribution of noise.
  
9. **Address SJC operations that impact the residential areas of the mid-peninsula**
  - a. SJC tends to go on reverse flow much more often than SFO. When in reverse mode, SJC arrivals now overfly Palo Alto at 2000 feet while crossing arriving SFO flights above Palo Alto.
  - b. SJC has regular oceanic departures over Palo Alto that thread under flights that are arriving on SERFR and other routes.
  
10. **Require airlines to install vortex generators on A320 family planes.** This inexpensive fix (estimated at \$5,000 by the SFO noise abatement office) would go far in creating community good will.

11. **Use modeling tool (AEDT 2b) to evaluate noise impact and dispersion of air pollutants for various alternatives.**
12. **Integrate noise abatement planning between SFO and SJC** given that treating them as separate airports greatly diminishes options to reduce noise.
13. **Implement a continuous improvement program** to reduce noise and emissions over heavily populated communities.

Thank you for considering our requests and suggestions. Feel free to contact us via email ([info@skypossepaloalto.org](mailto:info@skypossepaloalto.org)) if you have any questions or would like to engage in further discussions.

Sincerely,

Sky Posse Palo Alto

Cc: Joe Simitian, Chair of Select Committee  
Members of the Select Committee  
Palo Alto City Council  
Khashayar Alaei, City of Palo Alto  
Senator Boxer  
Senator Feinstein  
Representative Eshoo  
Representative Farr  
Representative Speier