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## MEMORANDUM

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To: Dr. Frances Sherertz  
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From: Steve Alverson

Date: 7 July 2003

Subject: Final Report on the Mather Airport Aircraft Overflight Noise Group

Reference: HMMH Job Number 299061

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### Introduction



This memorandum provides an overview of the Group's meeting schedule, composition, and accomplishments. The memo also documents actions that the SCAS attempted to implement the nine recommendations made by the Group and approved by the Board at the 15 January 2003 meeting. Finally, the memo briefly describes a number of the work products that resulted directly from the Group's request for information as a part of their work effort including a brief synopsis of the results of noise measurements made in Rescue, El Dorado Hills, Folsom, Rancho Cordova, Sloughhouse, and south central Sacramento County under the approach and departure corridors to Mather Airport.

### Meeting Location, Frequency, and Structure

All of the Group meetings were held in the large conference room at the Airport Administration building at Mather Airport. Meetings were held from 6:00 to 8:00 pm on Wednesday nights beginning on August 21, 2002 and continuing through June 18, 2003. Meetings were held at a pace of approximately one meeting every two weeks with a couple of the exceptions due to scheduling conflicts. The Group met a total of nineteen (19) times. In addition, most of the Group's members attended the January 15, 2003, Board of Supervisors meeting on the Mather noise issue.

A portion of each meeting was dedicated to educating the Group on the terms, acronyms, and technical complexities associated with airspace usage and aircraft noise as well to reporting back to the Group on specific assignments such as noise measurements, flight track analyses, or updates on the Mather Master Plan. The majority of the time at the meetings was spent adding to a matrix of potential solutions to the problem. A portion of each meeting was reserved for comments from the public on the Group's discussions at that night's meeting.

### Group Composition

The Mather Airport Aircraft Overflight Noise Group was composed of volunteers designated by members of the Sacramento and El Dorado County Board of Supervisors and the Folsom City Council who represented interested community members, an air cargo operator (United Parcel Service), the FAA, and the SCAS. Two of the Group's regular members hold Airline Transport Pilot (ATP) certificates, which provided the pilot's perspective of the feasibility of the potential measures. In addition, five of the Group's members (Bill Bryant, Geoff Simcoe, Herb Garms, Kevin Hoffmann and Mike Gallagher) also served on the Mather Master Plan Working Group. One member (Patty Daniel) sits on the Mather Master Plan Technical Support Group.

Although there were areas of disagreement in Groups of this type, the Group members made a continuous effort to work in a cooperative manner listening to and offering up divergent viewpoints on the Mather Airport aircraft noise issue.

Table 1 below identifies each of the members, his/her affiliation, and level of participation in the 19 meetings that were held between August 21, 2002 and June 18, 2003. As Table 1 indicates, the majority of the members attended most of the meetings. It is important to note, as is detailed in the Table 1 footnotes, that several members were invited to participate on the Group after the January 15, 2003 special Board meeting. Therefore, although these members had a high level of participation in the Group's meetings from February through June 2003, they attended about half as many meetings as those members who began with the Group in August 2002.

**Table 1: Mather Airport Aircraft Overflight Group Membership and Attendance**



<b>Member</b>	<b>Representing</b>	<b>Meetings Attended</b>
Mr. Bill Bryant	City of Folsom	16
Mr. Chuck Coalson	City of Folsom	19
Mr. Bruce McLeod	El Dorado County	17
Mr. Larry Brilliant	El Dorado County	15
Mr. Mike Gallagher	Rancho Cordova	17
Mr. Ken Cooley <sup>1</sup>	Rancho Cordova	8
Mr. Jack Toigo	Gold River	14
Mr. Geoff Simcoe	Fair Oaks	5
Mr. Herb Garms	East County Land Owners	15
Mr. Dick Owens <sup>2</sup>	Silver Springs	8
Mr. Jack Copeland <sup>3</sup>	Rancho Murieta	8
Mr. Gregory Michael <sup>4</sup>	FAA, Sacramento Flight Standards	7
Ms. Patty Daniel <sup>5</sup>	FAA, Northern California TRACON	13
Mr. Kevin Hoffmann	UPS, Air Cargo Carrier	11
Dr. Frances Sherertz	Sacramento County Airport System	19
Mr. Steve Alverson	Facilitator, Harris Miller Miller & Hanson	19

<sup>1</sup>Given the November 2002 election results that approved Ranch Cordova for city hood, an invitation was extended to Rancho Cordova City elected officials to have their own appointed representative sit on Group. They accepted and Ken Cooley began attending the meetings on December 4, 2003.

<sup>2</sup>After the January 15, 2003 special Board meeting, at which the Group was tasked by the Board with investigating departure noise issues, Supervisor Notoli invited Silver Springs to participate in the Group. They accepted and Dick Owens began attending the meetings on February 26, 2003.

<sup>3</sup>After the January 15, 2003 special Board meeting, at which the Group was tasked by the Board with investigating departure noise issues, Supervisor Notoli invited Rancho Murieta to participate in the Group. They accepted and Jack Copeland began attending the meetings on January 29, 2003.

<sup>4</sup>After the January 15, 2003 special Board meeting, the SCAS recognized the need for participation by a member of the Sacramento Flight Standards Office. Gregory Michael agreed to participate in the group and began attending the meetings on February 26, 2003.

<sup>5</sup>Donald Kirby from the Northern California TRACON attended the final two meetings in place of Patty Daniel who had prior commitments on those dates.

## Group Accomplishments

In addition to developing a greater understanding of the complexities of the airspace usage, aircraft noise, air cargo operations, air traffic control procedures, land use planning, airport master planning, federal aviation regulations, etc., the Group came to general agreement on the following seven concepts:

- Reduce the overall aircraft noise
- Do a better job at informing the pilots about Mather's Noise Abatement Procedures
- Regularly review the flight track/altitude data from ANOMS
- Install web-accessible flight track system
- Update the airport facilities directory with more informative noise abatement language
- Conduct approach noise measurements before and after the approach plate is changed
- Conduct departure noise measurements along the Mather departure paths

The Group also developed a matrix of 49 potential noise abatement, land use, and implementation measures that served as the cornerstone of the Group's deliberations. The final version of the matrix is provided in the Appendix of this memorandum. The potential measures were categorized into seven major areas. These categories mirror the categories recommended for use in Federal Aviation Regulation Part 150 aircraft noise and land use compatibility studies. The Table 2 below identifies each of these categories and summarizes the number of potential measures discussed as well as the number of measures recommended by the members.

**Table 2: Categories of Potential Measures**

<b>Category</b>	<b>Number of Measures Discussed</b>	<b>Number of Measures Recommended</b>
<b>Preferential Runway Use</b>	0	0
<b>Changes in Cockpit Procedures</b>	5	5
<b>Changes in Flight Track Geometry or Usage</b>	9	5
<b>Airport Use Restrictions</b>	4	1
<b>Changes in Airport Layout</b>	2	1
<b>Land Use Measures</b>	5	3
<b>Implementation Measures</b>	24	18
<b>Total</b>	49	33

## Recommended Measures

As Table 2 indicates, 33 or two-thirds of the 49 potential measures discussed by the Group were recommended for consideration by the SCAS. The Group recommended all of the "changes in cockpit procedures" measures. These measures generally seek to reduce noise on the ground by having the pilot operate the aircraft in as quiet a manner as possible. Only one measure in the airport use category, restrict aircraft and/or engine types, was recommended by the Group. The Group understands that existing federal law (the Airport Noise and Capacity Act of 1990) severely limits the County's ability to restrict aircraft types and/or engines, but felt it was important to convey its interest in allowing only the quietest aircraft available to operate at Mather Airport. Only one of the two "changes in airport layout" measures, a conditional use



limit on extending Runway 22R, was recommended by the Group. The Group would like to see conditions that limit the extended Runway 22R to a redundant-only runway role and to see that the County is making progress on implementing the recommended noise measures. The Group recommended three of the five land use measures that attempt to protect people from the aircraft noise and the airport from encroachment by people.

Finally, more than half (18) of the recommended measures were in the “implementation” category, which included measures such as informing pilots of the County’s noise abatement procedures, conducting noise measurements, using the County’s Aircraft Noise and Operations Monitoring System (ANOMS) to monitor aircraft performance relative to the noise abatement procedures, and to make the flight track data more accessible to the public via the Internet.

Some of these measures have been implemented (see SCAS implementation actions below) as a result of the Group’s first set of nine recommendations provided to the SCAS in January 2003. To review the all of the measures, both recommended and not recommended, see the Matrix of Potential Noise Abatement Measures in Appendix A of this memorandum.

## **SCAS Implementation Actions**

At the end of the Group’s original term in December 2002, the Group recommended nine measures to the SCAS for consideration and possible implementation. At the 15 January 2003 Board meeting, the Board directed the SCAS to implement the nine measures listed in Table 3 below. The SCAS has made substantial progress toward implementing these measures.

Although not an original (January of 2003) recommendation of the Group, the SCAS is also supporting the FAA’s 120-day test of the VORDME approach to see if there are any noise benefits to increasing the use of this approach. The SCAS will conduct public briefings, collect noise and operations data, receive and document public input, and prepare a report for the FAA’s use in evaluating the test.

## **Presentations, Technical Analyses, and Work Products**

As a result of the Group’s investigation into the aircraft noise issue, several technical analyses were carried out including two sets of arrival noise measurements, one set of departure noise measurements, an analysis of aircraft arrival altitudes, an analysis of departure flight tracks and departure altitudes, and a demonstration of recorded aircraft noise levels and their decibel levels.

The work product of these efforts included three noise measurement reports, several PowerPoint presentations, two web-accessible flight track site demonstrations, and an acoustic demonstration of measured noise levels.

The Group also received presentations on several closely related topics including one on the Northern California airspace, two on the Mather Airport Master Plan, one on the County’s environmental assessment process for the Mather Master Plan, and one on land use planning near airports.



**Table 3: Implementation Status of the Original Nine Recommended Measures**

RECOMMENDED MEASURE	STATUS
1. Encourage aircraft (including VFR) to fly a 3-degree or higher approach	County to add phone number for pilots to call to obtain specific information on Mather's noise abatement procedures. Operational on July 7, 2003.
2. Prepare Jeppesen insert on Mather noise abatement procedures with graphics	Assigned to HMMH. To be prepared after final Group recommendations.
3. Monitor noise before and after implementation of the new approach plate	Completed March 2003.
4. Conduct and participate in chief pilot or airline representative meetings to review current noise abatement measures and airline performance	First meeting in Dec. 2002. Implement quarterly reports to tenants. Next: September 2003
5. Update Airport Facilities Directory to reflect noise abatement procedures	County to add phone number for pilots to call to obtain specific information on Mather's noise abatement procedures. Operational on July 7, 2003.
6. Update other listings of noise abatement procedures: Boeing/NBAA/ALPA/ATA	County to add phone number for pilots to call to obtain specific information on Mather's noise abatement procedures. Operational on July 7, 2003.
7. Regularly disseminate noise abatement procedures to operators with positive follow-up.	Briefing on 3/26/03. Redistribute at quarterly Mather tenant meetings. Next September 2003.
8. Establish web-accessible flight track display system	Operational on June 2003. Improvements in progress.
9. Use ANOMS to monitor aircraft performance relative to noise abatement procedures	Nighttime Noise Abatement Procedures Report established January 2003. Daytime altitude report established May 2003. Ongoing.



## Aircraft Noise Measurements

Three sets of aircraft noise measurements were completed in response to the Group's request for noise data: two sets of measurements were made on approach and one set on departure. The first set of approach noise measurements were described in detail in the first report to the County on the Group's activities through December 2002. The second set of approach noise measurements were made after the approach plate was changed. The second set of measurements yielded similar results. A summary of this effort is included in Appendix B.

At the 15 January Board meeting, the Board directed the Group to develop a better understanding of Mather's departure noise issue. In response to the Board's direction, departure noise measurements were made at the request of the Group to gain a better understanding the magnitude of the departure noise issue. Four locations along the departure paths out of Mather were chosen for the weeklong, 24-hour a day noise measurements. A summary of this effort is included in Appendix B.

In each case, the noise measurements revealed that none of the aircraft noise levels exceed the Local, State, and Federal aircraft noise standards for incompatibility with noise sensitive (e.g., residences and schools) uses. In addition, the measured levels are well below (4 to 17 decibels) the levels the Environmental Protection Agency has deemed as requisite to protect public health and welfare. However, community aircraft noise complaints and the Group's mere existence indicates that there is community concern about the aircraft noise levels even if they do not exceed the standards for cumulative noise impact.

Accordingly, the Group's and the community's focus has been on the single-event aircraft noise levels that can interfere with human activity, namely speech interference and sleep disturbance. The noise measurements support this focus indicating that some of the events have the potential for speech interference and sleep disturbance. As a result, a great deal of the Group's attention has been focused on minimizing the impact of individual aircraft noise events, which in turn benefits the cumulative noise levels as well.

## Conclusion

During the ten months the Mather Airport Aircraft Overflight Noise Group has met, it has made significant recommendations that may have the potential to minimize noise exposure of aircraft arriving at and departing from Mather Airport. In addition, it has served to better inform aircraft operators of Mather's noise abatement procedures, and also to better inform the community of aircraft flight and air traffic control procedures at Mather Airport.

Although the Group has made significant progress in its recommendations, they feel they have not "solved" the problem for everyone. However, it is expected that when their recommendations are implemented, they will help some people.

Now that the Group's work is complete, the SCAS has the responsibility of evaluating the Group's recommendations and implementing those measures that are consistent with the County's vision for Mather Airport.



## **Appendices**

Appendix A: Mather Airport – Matrix of Potential Noise Abatement Measures

Appendix B: Aircraft Noise Measurements

