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DEC 11 1990

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CITY CLERK

DEPARTMENT OF  
PLANNING AND DEVELOPMENT

December 11, 1990

City Council  
Sacramento, California

Honorable Members In Session:

Subject: METRO AIRPORT NOISE ABATEMENT STUDY (M90-045)

CITY OF SACRAMENTO  
CALIFORNIA

1231 I STREET  
SACRAMENTO, CA

ADMINISTRATION  
ROOM 300  
95814-2987  
916-449-5571

ECONOMIC DEVELOPMENT  
ROOM 300  
95814-2987  
916-449-1223

NUISANCE ABATEMENT  
ROOM 301  
95814-3982  
916-449-5948

Summary

The consulting firm of KPMG Peat Marwick, under contract with the County Department of Airports, has released its Draft Final Report entitled Airspace Management Study: Noise Abatement Alternatives, Sacramento Metro Airport. The report is intended to provide input into the Federal Aviation Administration's (FAA's) ongoing Northern California Airspace Management Study, which is scheduled to be completed in August 1991. The overall purpose of this airspace management study is to identify and evaluate the feasibility of alternative flight procedures that would minimize aircraft noise exposure to populated areas.

Background

Sacramento Metro Airport airspace is one small part of the overall Northern California airspace. Other airports (e.g., Woodland, Sacramento Executive Airport), and Department of Defense (Mather, McClellan, Travis), may be impacted by changes in Metro airspace.

The FAA has commenced a study (ATAC, Inc.) to improve the airspace boundaries and air traffic procedures in Northern California. The FAA study is scheduled for completion in August 1991. The County Dept. of Airports has contracted with KPMG Peat Marwick to analyze a subset of alternative flight tracks and procedures within Sacramento. The Board of Supervisors is scheduled to recommend on December 19, 1990, a specific set of alternatives to the FAA for analysis into the overall network.

The objectives and axioms of the study are as follows:

1. Minimize flights over populated areas or areas designated by adopted plans for future growth;
2. Runways are oriented north/south. Arrivals and departures must also be oriented north/south;
3. Separate horizontally by at least 3 miles the arrival and departure flight tracks;
4. Separate vertically by at least 1000 feet the jet aircraft from the general aviation aircraft;
5. Separate horizontally by at least 15° the jet aircraft from the general aviation aircraft;

6. Arriving flights can descend rapidly at minimum power settings, and therefore, do not create the same types of noise impacts as departing flights;
7. The adopted Comprehensive Land Use Plan for Metro Airport identifies 60 CNEL as the noise level below which residential uses are compatible.
8. Noise impacts are related to weather conditions, altitude of overflight, weight of airplanes, and type of aircraft engine (Stage II airplanes will be phased out by 1999).

#### Existing Procedures

Most of the departures from and arrivals to Metro Airport follow a south flow traffic pattern because of prevailing wind and air traffic conditions. Eastbound and southbound traffic follow the same initial heading for the 1st eight nautical miles. Both eastbound and southbound south flow departure procedures require straight out (Heading 165°) climb until an altitude of 600 feet is reached, at which point aircraft turns southeast (Heading 120°) over downtown Sacramento.

#### Southbound Procedure

Traffic is routed over downtown and Land Park for southbound traffic. The southbound flight tracks (FROGO--the Standard Instrument Departure route that passes over Calaveras County) routes traffic over downtown and Land Park/Curtis Park. These areas have registered complaints about aircraft noise, although considered outside of the 60 CNEL contours.

#### East Vector Procedure

On February 12, 1990, the "east vector" procedure was re-established for eastbound air traffic (DUDES--the Standard Instrument Departure route that passes over a Dude Ranch near Lake Tahoe). This procedure was used by the FAA prior to August 1987. Eastbound flights are vectored eastward by the FAA at about I-5/I-80 (traffic permitting), overflying South Natomas and East Sacramento. The old procedure routed all traffic over downtown and Land Park before turning east. Thus, the new procedure is designed to reduce flights over Land Park and Pocket and, as a result, increases flights over Natomas and East Sacramento.

#### North Flow Procedure

On April 1, 1990, the north flow procedure was instituted. This allows nighttime (10 p.m. to 8 a.m.) flights to depart to the north, winds permitting, thereby reducing the impact on population centers to the south. The rules were recently amended to expand the use of this procedure when the winds are less than 7 knots, compared to the old rule at 5 knots. Winds permit the use of the north flow procedure about 60% of the time during the hours of 10 p.m. and 8 a.m.

#### New Alternatives Explored in the Airspace Management Study

#### Extend Hours of North Flow Procedure

At present the north flow noise abatement procedure is used during the nighttime hours, wind conditions permitting. This alternative would utilize the procedure throughout the day, wind conditions permitting. Considering climatological conditions, this procedure could be used at least half the time on a 24-hour basis. The procedure is further limited by Air Traffic Control radar positions and potential airspace conflicts between arrivals and traffic operating south of the Airport. An alternative departure route is being considered that would also require mitigation of conflicts with McClellan AFB arrivals and Mather AFB high-altitude arrivals.

### Modified South Flow Departure Alternatives

At present, south flow departure procedures require straight out (Heading 165°) climb until an altitude of 600 feet is reached, at which point aircraft turns southeast over downtown Sacramento. Three categories of alternative departure procedures were considered during south flow:

**Straight-out departure (Heading 165°):** Turbojet aircraft would climb straight out for approximately 10 nautical miles before turning eastbound. In essence, jet traffic would proceed nearly south over the Yolo Bypass. Propeller aircraft, however, because of their slower speeds, would cause significant delays, unless alternative departure routes were used for propeller aircraft. This secondary route, however, would conflict with Travis AFB air space, and would require major reconfiguration of air space. An additional refinement to this procedure would be to add a new navigational aid or to relocate the existing VORTAC (Very high frequency Omnidirectional Range collocated with TACTical air navigation facility).

**Looping Right-Turn Departure Procedure:** Departing eastbound and northeast-bound flights would be required to perform a 270° right turn and recross the Airport (at higher altitude) heading east. These aircraft would overfly the far-northern Natomas area at higher altitude, and would avoid most of the developed areas. This procedure could potentially conflict with Travis airspace. Additional navigational aids may also be required on-airport.

**Right Turn Departure Procedure:** Departing eastbound jet flights would turn right 15° to a heading of 180° (due south) until about 10 nautical miles south of the Airport (5,000 foot altitude) before turning to eastbound over the Sacramento VORTAC and afterward would resume the Dudes and Froggo departure routes. This procedure would overfly undeveloped areas to a greater extent than existing procedures. However, this procedure elongates aircraft flight paths and would require vertical separations of turboprop and jet aircraft. Preliminary evaluations indicate that this procedure is the most feasible of the modified south flow departure procedures.

### South Flow Arrival Alternatives

Alternative standard terminal arrival (STAR) procedures were considered for Metro Airport in order to reduce or eliminate potential airspace interactions with the proposed alternative departure procedures. Several of these alternatives require upgrades to (or new) navigational aids. Some of these arrival alternatives, while resolving conflicts with certain departure routes, create other conflicts, and are therefore not immediately feasible.

### Noise Implications

The potential changes to the arrival procedures would not affect the arrival tracks close enough to the airport to have an effect on the noise analyses. Therefore, the noise analysis focuses on departure procedures for southbound (Frogo) and eastbound (Dudes) routes.

Noise contours were calculated using the FAA's Integrated Noise Model (version 3.9). Minor variations in the contours took place in areas north and west of the City boundaries. Each of the alternatives studied resulted in noise contours less than 60 CNEL throughout the City. Most of the variations in the noise levels occurred at levels below 60 CNEL (the City's adopted standard for noise from Metro Airport).

At present, areas registering noise complaints include East Sacramento, South Natomas, and Land Park. All of the procedures now under consideration would relocate aircraft flight paths from highly developed / densely populated areas including the City of Sacramento. Of significant importance, these procedures represent a true improvement, rather than mitigating noise impacts in one community at the expense of another community.

## Implementation Plan

The Department of Airports, through the Board of Supervisors is considering requesting the FAA to consider immediate implementation of the preferential north flow alternative on a 24 hour basis, weather permitting. The Dept. of Airports may also request the FAA to consider immediate implementation of a [to be determined alternative] south flow procedure on a trial basis in order to provide valuable field data to its Northern California Airspace Management Study. Finally, the FAA should include navigational aid enhancements in its budgeting and programming cycle for the earliest possible implementation.

The Department of Airports is holding its final public meeting on December 19th. Thereafter, the Department will provide its final recommendations to the FAA. It is anticipated that the FAA will require a minimum of several months to consider and implement any of the proposed alternatives.

## Impact on other Jurisdictions

Communities not now experiencing overflight will perceive the greatest impact. Woodland, Davis and El Macero, for example, would experience overflight, although these flights would be high altitude and result in noise impacts below 60 CNEL.

Woodland is particularly concerned because the overflight areas under the modified south flow procedures would be in the eastern portion of Woodland, envisioned for future growth. Growth is preferred for the eastern portions of Woodland, since this area hosts poor agricultural soils. Growth is not preferred for western portions of Woodland (west of overflight area), since this area host prime agricultural soils.

Sutter County will be opposing the north flow procedures because of planned growth in the south portion of the County. The County is currently circulating a Notice of Preparation for an EIR for a major employment and housing master plan development in South Sutter County. The north flow procedures would overfly South Sutter County.

Finally, the California Department of Fish and Game will be reviewing the procedures that direct flights over the Yolo Bypass. The Bypass is being considered for wildlife mitigation area. There is concern that nesting Swainson's Hawks may be disturbed by overflights.

## FINANCIAL DATA

No impact.

## VOTE OF THE PLANNING COMMISSION

This issue was brought to the Planning Commission as an informational item on December 6th.

## POLICY CONSIDERATIONS

Modification of flight procedures will have a measurable positive impact by reducing slightly the 60 CNEL contours. Existing policy is to recognize aircraft noise below 60 CNEL as acceptable for residential land uses. Modelling of noise contours below 60 CNEL is inaccurate and therefore not of any value. Nonetheless, substantial complaints have been received in areas where noise levels are below 60 CNEL. The City may wish to request that additional noise criteria be formulated that might better address the aircraft noise problem.

## MBE/WBE IMPACTS

There are no MBE/WBE impacts associated with this item.

**RECOMMENDATION**

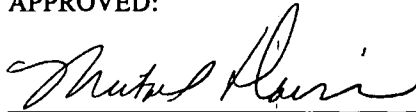
Staff recommends that the Council support the County Department of Airports in its effort to seek noise abatement procedures that minimize low altitude flights over populated areas, while maintaining the utmost in safety considerations. If the Council has specific comments, staff will represent these comments to the Board at their December 19th meeting.

Respectfully Submitted,



SCOT H. MENDE  
Senior Planner

APPROVED:



MICHAEL M. DAVIS,  
Director of Planning and Development

APPROVED FOR COUNCIL INFORMATION:



WALTER J. SLIPE  
City Manager

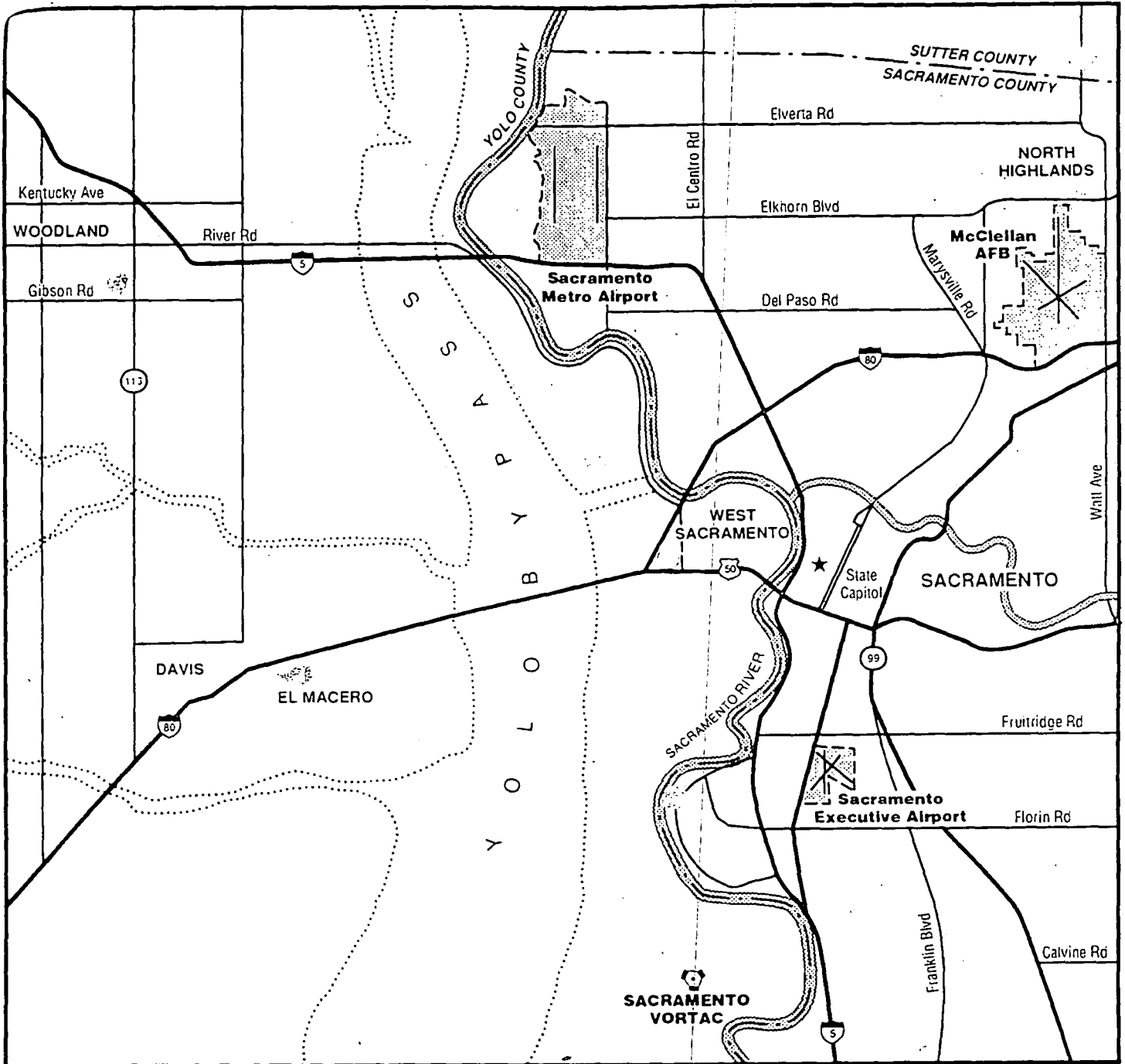
Contact Person:

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(916) 449-5381

SHM\AIRSPACE.CC

December 11, 1990  
All Council Districts

# GENERAL VICINITY MAP



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Exhibit **Z**

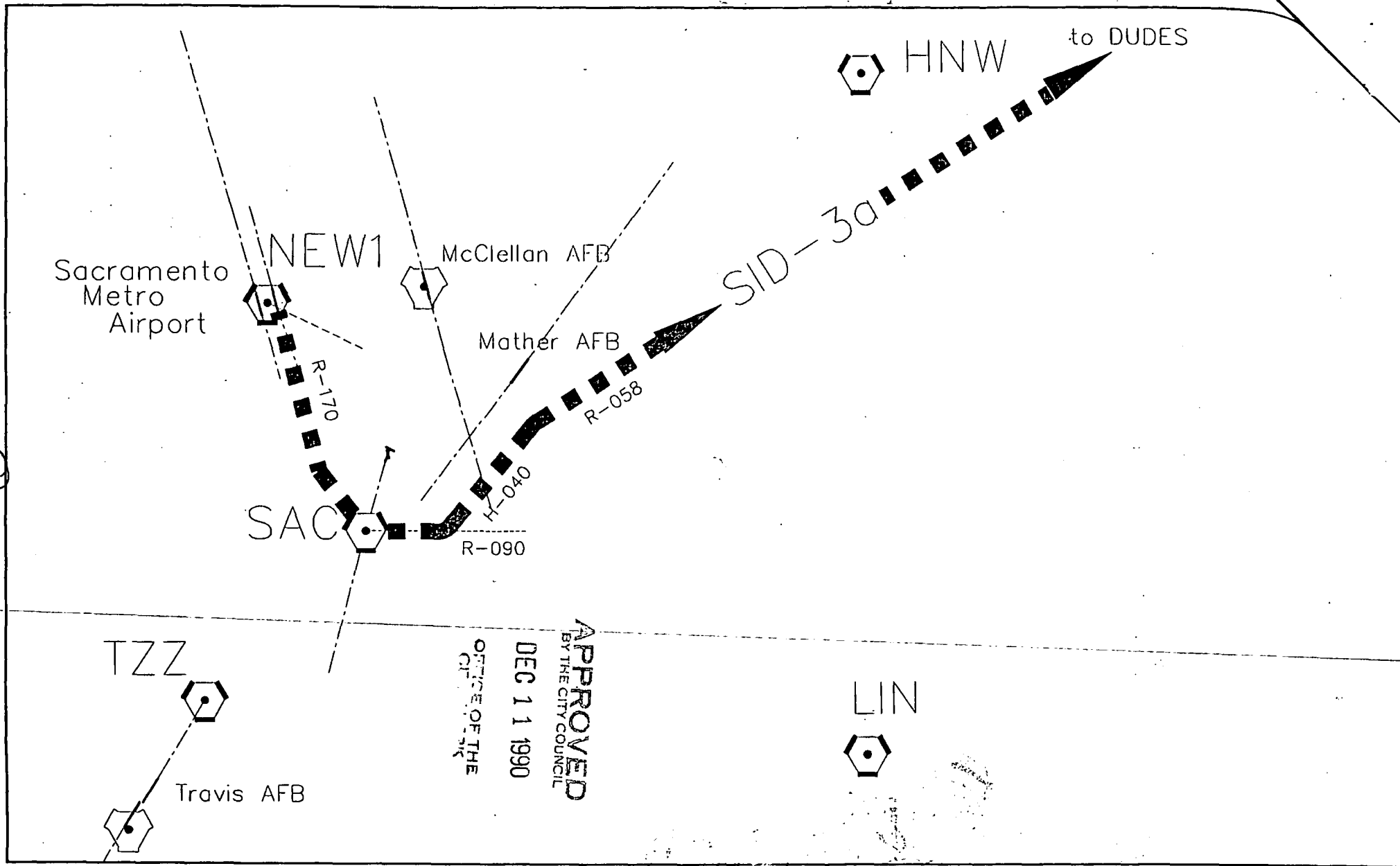
## NOISE EVALUATION SITES

Sacramento Airspace Management Study  
Sacramento County Department of Airports

KPMG Peat Marwick

November 1990

# STRAIGHT OUT DEPARTURE



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- Legend:
- Standard terminal arrival route (STAR)
  - Standard instrument departure (SID) route
  - Tactical air navigation (TACAN) facility
  - Very high frequency omnidirectional range collocated with TACAN equipment (VORTAC)
  - Sacramento terminal radar approach control



## STANDARD INSTRUMENT DEPARTURE — SID-3a

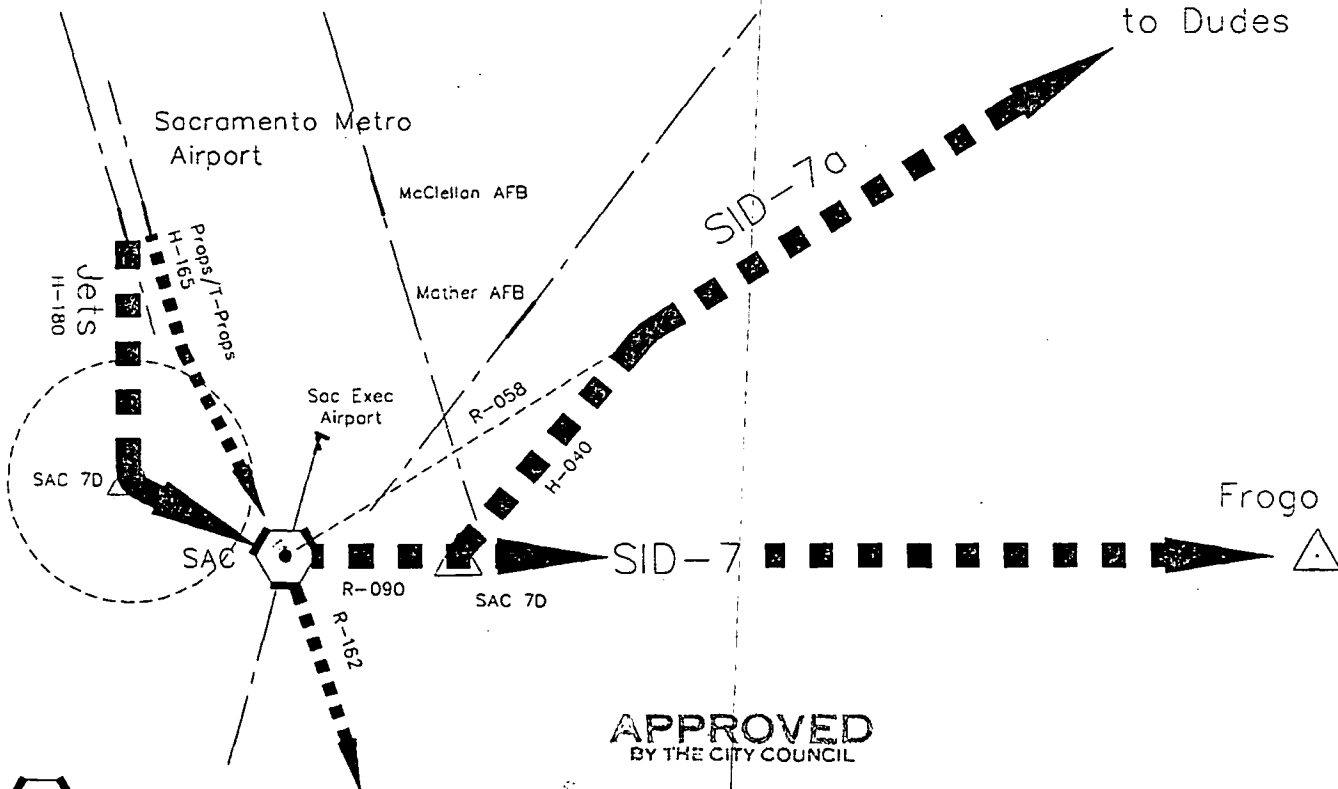
Sacramento Airspace Management Study  
Sacramento County Department of Airports

Exhibit **K**

# RIGHT TURN DEPARTURE

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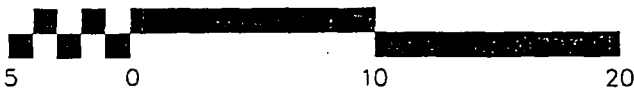
Travis AFB

LIN

LIN

**Legend:**

- Standard terminal arrival route (STAR)
- Standard instrument departure (SID) route
- Tactical air navigation (TACAN) facility
- Very high frequency omnidirectional range collocated with TACAN equipment (VORTAC)
- Sacramento terminal radar approach control (TRACON) airspace area boundaries



SCALE OF NAUTICAL MILES



Exhibit **C**

## STANDARD INSTRUMENT DEPARTURES - SID-7, 7a

Sacramento Airspace Management Study  
Sacramento County Department of Airports

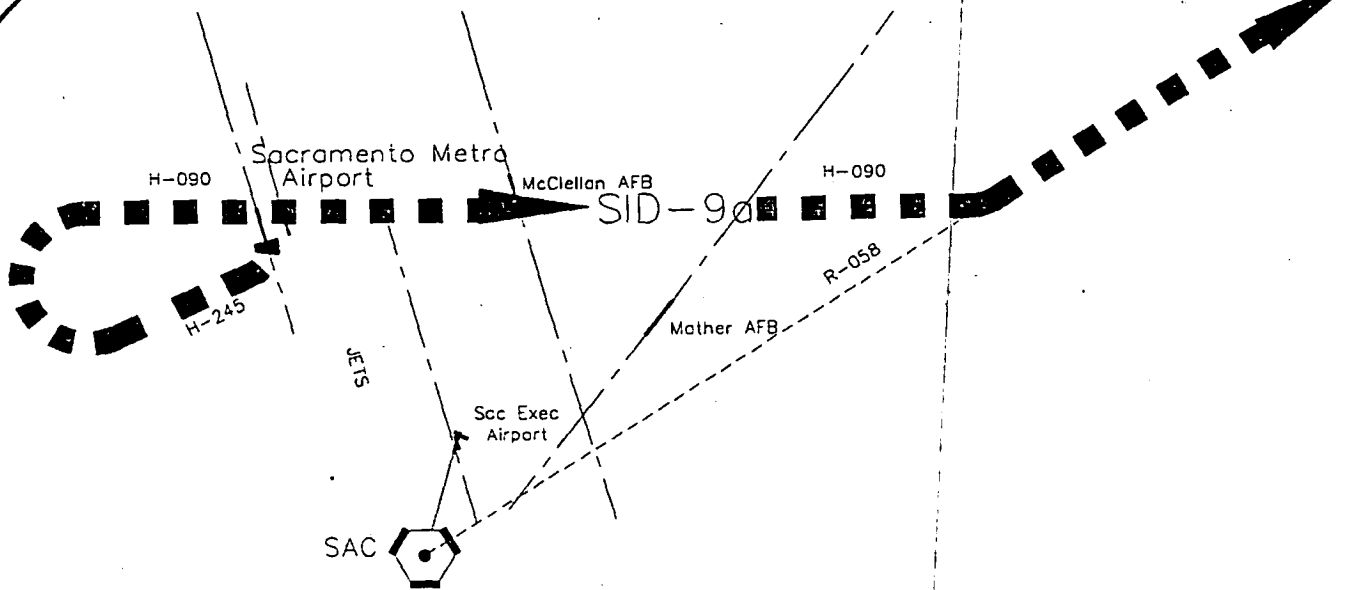
KPMG Peat Marwick

November 1990



# LOOPING RIGHT TURN DEPARTURE

to Dudes



Frogo



SUU

Travis AFB

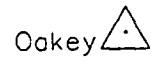


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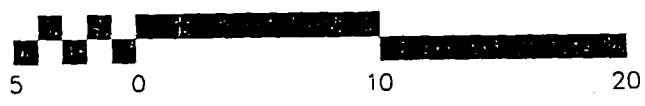
LIN



to Janey--Sunol, Risti, Cedes

**Legend:**

- Standard terminal arrival route (STAR)
- Standard instrument departure (SID) route
- Tactical air navigation (TACAN) facility
- Very high frequency omnidirectional range collocated with TACAN equipment (VORTAC)
- Sacramento terminal radar approach control (TRACON) airspace area boundaries



SCALE OF NAUTICAL MILES



Exhibit **P**

## STANDARD INSTRUMENT DEPARTURE — SID-9b

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November 1990

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