

SMAQMD
AREA SOURCE SUMMARY - SACRAMENTO COUNTY

Section ##
Other Mobile Sources - Aircraft

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EMISSION INVENTORY SOURCE CATEGORY

Aircraft

EMISSION INVENTORY CODES (CES CODES) AND DESCRIPTION

810-810-1400-0000 (47555) – Jet Aircraft – Commercial
810-808-1400-0000 (47571) – Jet Aircraft – Military
810-812-1400-0000 (47589) – Jet Aircraft – Civil
810-802-1140-0000 (57315) – Piston Aircraft – Commercial
810-800-1140-0000 (57323) – Piston Aircraft – Military
810-804-1140-0000 (57331) – Piston Aircraft - Civil

METHOD SUMMARY

This emission category accounts for all aircraft exhaust emissions (excluding agricultural crop dusting) which occur below 2000 feet altitude, including takeoff, climbout, approach, taxiing and idling, at Franklin Field, Natomas, Rancho Murieta, Rio Linda, Sacramento Executive, Sacramento Metropolitan, Sunset Sky ranch, McClellan and Mather airports. A survey questionnaire (see attached) requesting data on aircraft and engine type and associated number of landing-and-takeoff and touch-and-go cycles is sent to each airport. California Department of Transportation (CALTRAN), Garth Hopkins, 916-654-4232, is also contacted to obtain aircraft operational data (same as FAA data). CALTRAN's aircraft operation data for the small non-FAA airports tends to be on high side. If an airport does not provide data to the District, CALTRAN activity and number of based aircraft will be used to estimate number of operations associated with each type of based aircraft.

Aircraft emissions are estimated using emission factors from either AP-42 (Volume II: Mobile Sources), International Civil Aviation Organization (ICAO), or FAA Aircraft Engine Emissions Database (FAEED). Typical minutes in each mode of operation (time-in-mode, i.e. idle-taxi, takeoff, climbout, approach, taxi-idle) during the landing-takeoff cycles (LTO's) and touch-and-go cycles (T/G's) listed in AP-42, Table II-1-3 and II-1-4, are used to estimate emissions if time-in-mode (TIM) for the aircraft were not provided by the airport. The following equations adjust approach and climbout time-in-modes to represent local mixing height of 2000 feet: $TIM_{adjusted-app} = TIM_{default-app} * (H/3000)$; $TIM_{adjusted-clm} = TIM_{default-clm} * [(H-500)/2500]$, where Default mixing height is 3000 feet and H is mixing height used in air quality modeling.

ACTIVITY DATA SOURCE: 1999 survey data for an airport if submitted, otherwise, FAA Form 5010 from CALTRAN.

EMISSION FACTOR SOURCE: AP-42, ICAO, FAEED.

TEMPORAL DATA:

Daily Activity: 18 hours per day.
Weekly Activity: 7 days per week.
Monthly Activity: Uniform.

DATE OF THE LAST UPDATE: February 19, 1992, 1996 aircraft data was collected.
GROWTH PARAMETER: Public Service.

EMISSION SUMMARY (1999 - ANNUAL AVERAGE TONS/DAY) UNRECONCILED

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<u>CES#</u>	<u>TOG</u>	<u>ROG</u>	<u>CO</u>	<u>NOX</u>	<u>SOX</u>	<u>PM</u>	<u>PM10</u>
47571	0.04	0.04	0.07	0.07	0.0	0.04	0.04
47555	0.30	0.27	0.79	0.87	0.01	0.03	0.03
47589	0.01	0.01	0.03	0.02	0.0	0.0	0.0
57331	0.03	0.03	1.65	0.01	0.0	0.0	0.0
74323	0.0	0.0	0.0	0.0	0.0	0.0	0.0

NEEDED CLARIFICATIONS/CORRECTIONS TO CURRENT METHOD

None.

FUTURE PLANS FOR METHOD UPDATE/REVISION

None.