



# Bureau of Justice Statistics Special Report

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## Aviation Units in Large Law Enforcement Agencies, 2007

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During 2007, about 1 in 5 large law enforcement agencies had a specialized aviation unit operating at least one fixed-wing plane or helicopter. These 201 aviation units, located in departments of 100 or more sworn officers, employed about 3,400 persons, operated almost 900 aircraft in 46 states and the District of Columbia, and logged an estimated 363,000 flight hours. The units performed functions ranging from general operations, such as engaging in pursuits and responding to calls for service, to more specialized operations, such as homeland security, emergency medical services (EMS), special weapons and tactics (SWAT), and firefighting missions.

This report is based on data from the 2007 Census of Law Enforcement Aviation Units (CLEAU), which collected information on the characteristics, expenditures, equipment, personnel, functions, and training and safety requirements of aviation units found in law enforcement agencies with 100 or more sworn officers. The CLEAU is the first nationwide study to examine the nature and extent of airborne law enforcement.

### Major findings from the 2007 Census of Law Enforcement Aviation Units include—

- Aviation units from large departments provided aerial law enforcement coverage in 46 states and the District of Columbia.
- A greater percentage of units had helicopters (88%) than planes (50%). In absolute numbers, units operated more than twice the number of helicopters (604) than planes (295).
- Aviation units spent an estimated total of \$300 million in 2007 on aircraft purchases, leasing and financing, and maintenance and fuel.

Select operations performed by aviation units, 2007

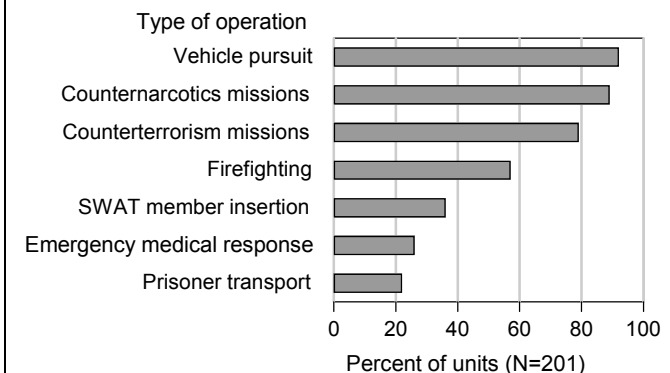


Figure 1

- About two-thirds (68%) of aviation unit aircraft were acquired through outright purchase, and about a fourth (24%) were secured through a government surplus program. Approximately half of the aircraft in operation were at least 20 years old.
- Aviation units logged a median of 1,100 flight hours per unit in 2007. State police units had the greatest median number of hours per unit (2,000).
- In 2007, 92% of aviation units engaged in vehicle pursuits. Almost 90% of units performed counternarcotics missions, and about 80% conducted counterterrorism missions. Nearly 70% of units engaged in firefighting activities. Fewer units reported using aircraft for SWAT member insertions (36%), emergency medical response (26%), and prisoner transport (22%) (figure 1).
- About half of aviation units required new pilot candidates to have law enforcement experience. Over 60% required that they hold prior pilot ratings.

## Aviation units assist in law enforcement missions

Law enforcement aviation units are thought to be beneficial supplements to traditional ground units. An aircrew typically has a broader field of vision than an officer does on the ground, allowing airborne officers to give ground units advanced alert on upcoming dangers or opportunities that may not be observed otherwise. Airborne officers can monitor situations from a level at which they can go undetected by the suspects involved, and be removed from any danger that may unfold. Additionally, aircraft can cover more distance in less time than ground units, allowing airborne officers to respond to some calls for service or requests for assistance in a more timely manner. While the rationale for aviation units has been articulated, there have been few studies that examine the nature and function of law enforcement aviation units.

## Three in 4 agencies with 1,000 or more sworn officers had aviation units

Approximately 20% of all agencies with 100 or more sworn officers had aviation units in 2007.<sup>1</sup> The percent of agencies with aviation units varied depending on agency type and size. Approximately 75% of the 89 agencies with 1,000 or more sworn officers had aviation units, compared to 6% of agencies with less than 250 sworn officers (table 1). Ninety percent of state police, 38% of county police, 23% of sheriffs' offices, and 13% of municipal police agencies operated aviation units during 2007.

## Aviation units in large law enforcement agencies provided aerial coverage for more than 90% of the nation

The 201 aviation units provided aerial law enforcement coverage in 46 states and the District of Columbia (not shown in a table). Thirty states had an aviation unit responsible for full state coverage and at least one additional unit within a specific city or county jurisdiction. Fifteen states and the District of Columbia had one aviation unit covering the entire jurisdiction. Aviation units in South Carolina provided local coverage, not full state coverage. In four states—Wyoming, Vermont, Rhode Island, and Idaho—none of the agencies with 100 or more sworn officers reported having an aviation unit. (See appendix table 1 for aviation units by state.)

<sup>1</sup>Calculation based on the 911 agencies with 100 or more sworn officers in the 2003 Law Enforcement Management and Administrative Statistics (LEMAS) Survey. Excludes 25 agencies that reported an aviation unit in the 2007 LEMAS, but not in the 2003 LEMAS. See *Methodology* for more information.

**Table 1. Law enforcement agencies with 100 or more sworn personnel and aviation units, by agency type and size, 2007**

Agency type and size	All agencies	Agencies with aviation units	
		Number	Percent of agencies
<b>All agencies</b>	941	201	21%
State police	49	44	90
Municipal police	519	68	13
County police	34	13	38
Sheriffs' offices	337	76	23
Tribal police	2	0	0
<b>Full-time sworn personnel*</b>			
100-249	543	32	6%
250-499	208	48	23
500-999	101	55	54
1,000 or more	89	66	74

Note: Includes 941 agencies reporting 100 or more full-time sworn officers in the 2003 LEMAS and the 201 law enforcement agencies with 100 or more full-time sworn officers and operating at least one plane or helicopter in 2007. See *Methodology* for details on survey sample.

\*Agency personnel data based on the 2003 LEMAS survey.

## Sheriffs' offices accounted for about 40% of aviation units in 2007

Aviation units were most commonly found in sheriffs' offices (38%) in 2007 (table 2). Municipal police agencies operated 34% of aviation units, followed by state police agencies (22%), and county police agencies (7%).

Regardless of agency type, 60% of aviation units in large departments were located in agencies employing 500 or more sworn officers. A third (33%) of aviation units were operated by agencies with 1,000 or more sworn officers.

More than half (52%) of aviation units had 10 or fewer personnel specifically assigned to the unit, with the largest percentage (30%) having 6 to 10 employees.

Aviation units used more helicopters than planes to carry out law enforcement activities. In 2007, 88% of units had at least one helicopter and 50% had at least one plane. More than 70% of units operated more than one helicopter, compared to 25% operating more than one plane. The majority (60%) of units had between two and five aircraft. Less than 20% of the units operated one aircraft.

## Half of all units operated helicopters only

Aviation units can be characterized by whether they operate a plane, helicopter, or both types of aircraft. In 2007, half (50%) of all aviation units used helicopters only, compared to 12% operating planes only. More than a third (37%) of all units operated both helicopters and planes. (See appendix table 2 for the number of aircraft flown by type of aviation unit.)

Helicopter-only units were most commonly found in municipal police agencies (72%), county police agencies (85%), and sheriffs' offices (47%). The majority of state police units (66%) operated both planes and helicopters and had the lowest percentage of helicopter-only units (11%). Municipal police agencies had the lowest percentage of plane-only units (4%).

Type of aviation unit	All	State police	Municipal police	County police	Sheriffs' offices
Plane-only	12%	23%	4%	8%	15%
Helicopter-only	50	11	72	85	47
Both*	37	66	24	8	38
<b>Total number of units</b>	201	44	68	13	76

Note: Percentages may not add to 100% due to rounding.

\*Includes units operating planes and helicopters. Includes one unit operating a plane borrowed on an as-needed basis and one unit operating a helicopter borrowed on an as-needed basis.

**Table 2. Characteristics of law enforcement aviation units in law enforcement agencies with 100 or more sworn officers, 2007**

Characteristic	Aviation units	
	Number	Percent <sup>a</sup>
<b>Number of aviation units</b>	201	100%
<b>Agency type</b>		
State police	44	22%
Municipal police	68	34
County police	13	7
Sheriffs' offices	76	38
<b>Full-time sworn agency personnel<sup>b</sup></b>		
100-249	32	16%
250-499	48	24
500-999	55	27
1,000 or more	66	33
<b>Number of personnel assigned to unit<sup>c</sup></b>		
1-5	44	22%
6-10	60	30
11-15	45	22
16-20	20	10
21 or more	31	15
<b>Number of aircraft</b>		
1	32	16%
2-5	121	60
6 or more	48	24
<b>Number of planes</b>		
None	101	50%
1	50	25
2-5	38	19
6 or more	12	6
<b>Number of helicopters</b>		
None	25	12%
1	34	17
2-5	116	58
6 or more	26	13

Note: Includes 201 agencies owning or operating at least one plane or helicopter in 2007. See *Methodology* for details on responding agencies.

<sup>a</sup>Percentages may not add to 100% due to rounding.

<sup>b</sup>Agency personnel data based on the 2003 LEMAS survey.

<sup>c</sup>Unit personnel data available for 98% of aviation units.

## Aviation units operated nearly twice as many helicopters as planes

Nearly 9 in 10 aviation units located in agencies with 100 or more sworn officers reported operating at least one helicopter in 2007; half reported operating at least one plane (table 3). Helicopters accounted for two-thirds (604) of the nearly 900 aircraft (899) in operation, and planes accounted for a third (295). None of the 201 aviation units reported using unmanned aerial vehicles (UAVs), light-sport aircraft, ultralight aircraft, or powered parachutes (not shown in a table).

Aviation units in state police departments reported the largest number of aircraft (384), followed by sheriffs' offices (243), municipal police (237), and county police (35) units. State police units accounted for 20% of all aviation units, but flew 40% of the total aircraft in operation. State police units had a median of six aircraft per unit.

Sheriffs' office units reported a greater number of total aircraft than municipal and county police units, but a smaller median number of aircraft per aviation unit. Both municipal and county police units had a median of three aircraft per unit while aviation units operated by sheriffs' offices had a median of two per unit. (See appendix table 3 for data on aircraft by agency type).

**Table 3. Aircraft operated by aviation units, by type of agency, 2007**

Type of agency and aircraft	Number of units	Aircraft operated	
		Number	Median per unit
<b>All agencies</b>	201	899	3
Planes	100	295	2
Helicopters	176	604	3
<b>State police</b>	44	384	6
Planes	39	204	4
Helicopters	34	180	4
<b>Municipal police</b>	68	237	3
Planes	19	27	1
Helicopters	65	210	3
<b>County police</b>	13	35	3
Planes	2	5	3
Helicopters	12	30	3
<b>Sheriffs' offices</b>	76	243	2
Planes	40	59	1
Helicopters	65	184	2

## Aircraft purchases accounted for over half of aviation unit expenditures in 2007

Aviation units (190) reporting actual expenditures for 2007 spent approximately \$283 million to purchase, lease or finance, maintain, and fuel their aircraft (table 4). Total expenditures for all 201 aviation units were estimated at \$301 million in 2007. (See *Methodology* for details on estimating expenditures for the 11 units unable to provide data.)

Aircraft purchases accounted for the largest percentage (56%) of aviation unit expenditures, followed by aircraft maintenance (27%), fuel (12%), and leasing or financing (6%). The estimated \$159 million spent by aviation units for aircraft purchases was attributed to the 21% of aviation units that obtained aircraft in 2007.

Law enforcement agencies spent a median of \$347,000 per aviation unit on aircraft. Median expenditures were greatest for aviation units located in state police agencies. Median expenditures for state police units were more than three times higher than sheriffs' office units, almost two times higher than county police units, and 1.5 times greater than municipal police units.

Median expenditures were higher per helicopter than per plane. Helicopter-only units spent a median of \$132,000 per helicopter in 2007; plane-only units spent a median of \$35,500 per plane. While higher spending on helicopters can be partially attributed to higher spending on purchasing, leasing, and financing, aviation units also spent a median of over 3.5 times more on maintenance and over twice the amount on fuel per helicopter, compared to the amount spent per plane.

**Table 4. Median expenditures for aircraft by expense, by type of agency, and type and number of aircraft, 2007**

	Median expenditures				
	Total	Purchase <sup>a</sup>	Leasing/financing <sup>b</sup>	Maintenance <sup>c</sup>	Fuel <sup>d</sup>
<b>Total expenditures</b>	\$282,900,000	\$159,000,000	\$16,800,000	\$75,500,000	\$34,900,000
<b>Type of agency</b>					
All agencies	\$347,300	\$2,150,400	\$279,500	\$167,200	\$80,600
State police	629,500	1,400,000	800,000	220,000	129,900
Municipal police	418,900	1,800,400	279,500	247,400	90,000
County police	359,700	5,112,100	:	170,500	124,500
Sheriffs' offices	193,000	3,100,000	220,000	100,000	56,300
<b>Number of aircraft per unit</b>					
1	\$46,700	\$340,000	\$130,000	\$15,000	\$12,000
2-5	325,000	2,015,000	250,000	124,000	73,000
6 or more	1,469,800	2,800,000	1,502,500	500,000	296,800
<b>Type of aircraft<sup>e</sup></b>					
Planes only	\$35,500	\$375,000	:	\$16,000	\$13,000
Helicopters only	132,000	1,600,000	157,000	58,300	29,900
Both	108,500	3,000,000	86,700	41,300	24,400
<b>Number of units</b>	190	40	24	184	187

Note: Includes 201 agencies operating at least one plane or helicopter in 2007. Data available for 190 units or 95% of the units.

:Not calculated because there were fewer than five reporting units.

<sup>a</sup>Includes data for 40 of 42 units reporting that the unit or agency obtained aircraft in 2007.

<sup>b</sup>Includes 24 units reporting that the unit or agency leased or financed an aircraft in 2007.

<sup>c</sup>Includes 184 units reporting that the unit or agency funded aircraft maintenance in 2007.

<sup>d</sup>Includes 187 units reporting that the unit or agency provided funds for aircraft fuel in 2007.

<sup>e</sup>Includes 25 units operating planes only, 101 units operating helicopters only, and 75 units operating both types of aircraft.

## Helicopters had higher maintenance and fuel costs than planes

The CLEAU collected expenditure and flight hour data at the aviation unit level. Cost estimates for planes and helicopters were generated by examining maintenance and fuel costs per flight hour for plane-only and helicopter-only units. For helicopter-only units, the median costs per flight hour were \$168 for maintenance and \$74 for fuel (text table 2). The median costs per flight hour for plane-only units were \$54 for maintenance and \$45 for fuel.<sup>2</sup>

Type of aircraft	Median cost per flight hour for—	
	Maintenance	Fuel
Plane-only units <sup>a</sup>	\$54	\$45
Helicopter-only units <sup>b</sup>	168	74

<sup>a</sup>Cost per flight hour based on expenditure amount divided by flight hours for 25 plane-only units.

<sup>b</sup>Cost per flight hour based on expenditure amount divided by flight hours for 101 helicopter-only units.

## One in 4 aircraft used by law enforcement were acquired through a government surplus program

Aviation units obtain aircraft through outright purchase, lease, seizure, government surplus programs, or by other means, such as renting an aircraft or using one on a contractual basis. Outright purchase was the most common method used by agencies to acquire aircraft. In 2007, 68% of aviation unit aircraft (899) had been acquired through

<sup>2</sup>CLEAU data do not allow for a complete economic analysis of the total costs associated with obtaining and operating helicopters and planes.

outright purchase (table 5), followed by 24% acquired through the Section 1033 government surplus program.<sup>3</sup>

Aviation units overall were more likely to acquire planes (82%) through outright purchase than helicopters (60%). Units acquired a larger percentage of helicopters (33%) through the Section 1033 government surplus program than planes (6%). Seizure accounted for approximately 7% of planes acquired by aviation units, compared to less than 1% of helicopters.

Sheriffs' offices had the largest percentage of aircraft obtained through government surplus (43%). Less than half (44%) of the aircraft used by sheriffs' offices were acquired through outright purchase.

## One in 5 aviation units acquired aircraft in 2007

In 2007, 42 (21%) aviation units added a total of 55 aircraft to their fleets (text table 3). The majority of these aviation units (76%) increased their fleet by one aircraft, 17% added two aircraft, and 7% added three (not shown in a table).

Type of agency	Number of aviation units	Aircraft obtained in 2007	
		Percent of agencies	Number of aircraft
<b>All agencies</b>	201	21%	55
State police	44	27	17
Municipal police	68	21	20
County police	13	31	6
Sheriffs' offices	76	16	12

<sup>3</sup>Section 1033 of the National Defense Authorization Act of 1997 authorizes the Department of Defense to transfer excess military equipment to state and local law enforcement agencies having officers with powers of arrest and apprehension.

**Table 5. Method of aircraft acquisition, by type of agency and aircraft, 2007**

Type of agency and aircraft	Number of aircraft	Method of acquisition, by percentage obtained through—					
		Total	Purchase	Government surplus <sup>a</sup>	Lease	Seizure	Other <sup>b</sup>
<b>All agencies</b>	899	100%	68	24	4	2	2
Planes	295	100%	82	6	1	7	4
Helicopters	604	100%	60	33	5	0 <sup>c</sup>	1
<b>State police</b>	384	100%	80	15	1	2	2
Planes	204	100%	89	2	1	4	3
Helicopters	180	100%	71	29	0	0	0
<b>Municipal police</b>	238	100%	68	21	5	2	3
Planes	27	100%	70	7	0	11	11
Helicopters	210	100%	69	22	6	1	2
<b>County police</b>	35	100%	80	20	0	0	0
Planes	5	100%	80	20	0	0	0
Helicopters	30	100%	80	20	0	0	0
<b>Sheriffs' offices</b>	243	100%	44	43	7	3	4
Planes	59	100%	64	15	3	14	3
Helicopters	184	100%	38	52	9	0	2

Note: Percentages may not sum to 100% due to rounding.

<sup>a</sup>Section 1033 of the National Defense Authorization Act of 1997 authorizes the Department of Defense to transfer excess military equipment to state and local law enforcement agencies having officers with powers of arrest and apprehension.

<sup>b</sup>Includes methods of acquisition such as aircraft privately donated, obtained through a federal grant, rented, or obtained on a contractual basis.

<sup>c</sup>Less than 1%.

Among municipal police aviation units, 14 (21%) added a total of 20 aircraft to their fleets. Twelve state police units (27%) added 17 aircraft. Twelve sheriffs' office units (16%) added one additional plane each, and four county police units (31%) added six aircraft.

### Nearly half the aircraft flown by law enforcement were at least 20 years old

Aviation units reported that almost half the aircraft (45%) used for law enforcement activities were 20 years or older on average (table 6). Approximately 80% of the aircraft in operation were over five years old, and 60% were more than 10 years old on average. In comparison, the average age of U.S. commercial aircraft in 2005 was 11.3 years while some U.S. military fleets, such as the Navy's P-3 Orion, averaged over 24 years.<sup>4,5</sup>

Municipal police units reported the lowest percentage of aircraft age 20 years or older (36%) and the highest percentage of aircraft age one year or less (7%). Sheriffs' office units reported the highest percentage of aircraft at least 20 years old (61%).

<sup>4</sup>Bureau of Transportation Statistics. (2007). *Transportation Statistics Annual Report*. U.S. Department of Transportation, Research and Innovative Technology Administration.

<sup>5</sup>U.S. Government Accountability Office. (2005). *Military Readiness: DOD Needs to Identify and Address Gaps and Potential Risks in Program Strategies and Funding Priorities for Selected Equipment*. Report to Congressional Committees (GAO-06-141).

### Searchlights were the most common type of aircraft equipment

The two most common types of equipment outfitting aviation unit aircraft in 2007 were geared towards providing units with a better view of the ground below. About ninety percent of units had at least one aircraft equipped with a searchlight to illuminate the ground at night (table 7). More than 80% of aviation units had aircraft with forward-looking infrared (FLIR) systems with video cameras installed to provide law enforcement officers thermal images of the ground.

A majority of aviation unit aircraft were equipped with public address systems (59%) and night vision compatibility (54%). A smaller percentage of aircraft were equipped with external cargo hooks (41%), digital downlink (31%), analog downlink (26%), mobile data terminals (22%), external hoist (21%), and FLIR without a video camera (13%).

The greatest variability among law enforcement agencies—state police, municipal police, county police, and sheriffs' offices—in the use of a particular type of equipment involved night vision capability. Unit aircraft equipped with night vision capability ranged from a high of 73% for state police units to a low of 32% for municipal police units, with sheriffs' offices (66%) and county police (39%) falling in between.

**Table 6. Average age of aircraft operated by aviation law enforcement units, by type of agency, 2007**

Type of agency	Number of aircraft	Percent of aircraft with an average age of—					
		Total	1 year or less	More than 1 year to 5 years	More than 5 years to 10 years	More than 10 years to 20 years	More than 20 years
<b>All agencies</b>	899	100%	4	16	21	14	45
State police	384	100%	2	12	24	20	42
Municipal police	237	100%	7	20	25	12	36
County police	35	100%	6	23	23	11	37
Sheriffs' offices	243	100%	4	18	12	6	61

Note: Percentages may not sum to 100% due to rounding. Based on 201 total aviation units operating at least one plane or helicopter in 2007.

**Table 7. Aviation units with specialized aircraft equipment, by type of agency, 2007**

Type of equipment	Percent of aviation units with specialized aircraft equipment				
	All units	State police	Municipal police	County police	Sheriffs' offices
Searchlight	88%	80%	97%	100%	83%
Forward-looking infrared (FLIR) with video camera	82	82	84	85	79
Public address system	59	50	68	69	55
Night vision compatibility	54	73	32	39	66
External cargo hook	41	46	41	23	41
Downlink (digital)	31	30	31	46	29
Downlink (analog)	26	25	25	15	30
Mobile data terminal	22	5	34	8	24
External hoist	21	27	13	23	23
FLIR without video camera	13	23	13	15	8

Note: Includes 201 agencies operating at least one plane or helicopter in 2007.

**Median flight hours per helicopter were more than twice the median flight hours per plane in 2007**

Two corresponding measures of aviation unit activity in the CLEAU were the number of flight hours logged and the number of missions flown. In 2007, 193 aviation units logged 350,300 total flight hours or an average of 960 flight hours per day nationwide (table 8). The estimated total flight hours for all 201 units was 363,000. (See *Methodology* for details on estimating flight hours for eight agencies that did not provide data.)

State police units reported the greatest median number of flight hours per unit (2,000) in 2007. State police units logged a median of over three times more flight hours per unit than sheriffs' offices (600), almost double the median flight hours of county police (1,200), and about 1.5 times the median flight hours per unit for municipal police units (1,400).

Overall, the median flight hours logged per aircraft were greater for helicopters than for planes. Agencies operating helicopters reported a median of 360 flight hours per helicopter in 2007; agencies operating planes reported a median of 160 flight hours per plane.

The median number of flight hours per pilot varied among law enforcement agencies. Municipal police pilots recorded the greatest median number of flight hours per pilot (250) for the year, followed by county police (200), state police (190) and sheriffs' office (170) pilots.

**Aviation units reported a median of 1,000 missions in 2007**

Approximately 336,700 missions were flown during 2007 by the 145 aviation units reporting data (table 8). The estimated total for all 201 units was 384,800 missions. (See *Methodology* for details on estimation methods.)

Municipal police units flew more missions (189,700) than other law enforcement agencies. Those missions translated to a median of about 1,700 missions per municipal police unit. County police units flew the greatest median number of missions per aviation unit (2,500). Units in sheriffs' offices flew the fewest missions per unit (500). As with flight hours, the median number of missions flown per aircraft was greater for helicopters (440) than for planes (70).

**Table 8. Median number of flight hours and missions flown, by type of law enforcement agency, 2007**

Type of agency and tracking	Number of units	Total	Median per—				
			Unit	Plane <sup>a</sup>	Helicopter <sup>b</sup>	Pilot	
<b>Flight hours<sup>c</sup></b>							
All agencies	193	350,300	1,100	160	360	210	
State police	43	137,600	2,000	190	270	190	
Municipal police	65	131,900	1,400	180	540	250	
County police	12	13,600	1,200	:	370	200	
Sheriffs' offices	73	67,100	600	70	300	170	
<b>Missions flown</b>							
All agencies	145	336,700	1,000	70	440	160	
State police	29	44,500	800	90	140	120	
Municipal police	44	189,700	1,700	80	690	330	
County police	9	32,800	2,500	:	1,240	570	
Sheriffs' offices	63	69,800	500	40	300	170	

Note: Includes aviation units operating at least one plane or helicopter in 2007. Individual agency totals for flight hours and missions flown may not sum to totals for all agencies due to rounding.

:Not calculated because there were fewer than five reporting units.

<sup>a</sup>Includes 100 aviation units operating a plane. Flight hour data were available for 95% of the units (38 state units, 18 municipal units, 2 county units, and 37 sheriffs' office units). Mission flown data available for 70% of the units (24 state units, 13 municipal units, 2 county units, and 31 sheriffs' office units).

<sup>b</sup>Includes 176 units operating a helicopter. Flight hour data were available for 96% of the units (33 state units, 62 municipal units, 11 county units, and 62 sheriffs' office units). Mission flown data available for 69% of the units (21 state units, 40 municipal units, 8 county units, and 52 sheriffs' office units).

<sup>c</sup>Flight hour data were available for 193 of the 201 aviation units (96%). Missions flown data were available for 145 of the aviation units (72%).

## State police units flew the longest missions

Missions flown by aviation units lasted a median of 1.2 flight hours per mission for the 144 units providing both mission and flight hour data. State police units reported the longest flight time per mission (2.2 hours), while county police units reported the shortest flight time per mission (0.5 hours).

Across all agency types, the median number of flight hours per mission was greater for planes than for helicopters.

	Number of units	Median number of flight hours per mission flown per—		
		Unit	Plane <sup>a</sup>	Helicopter <sup>b</sup>
<b>All agencies</b>	144	1.2	2.4	1.0
State police	29	2.2	2.2	1.8
Municipal police	44	0.7	2.3	0.6
County police	9	0.5	0.8	0.5
Sheriffs' offices	62	1.2	2.5	1.0

Note: Based on 144 agencies (72%) that provided data on both flight hours and missions flown.

<sup>a</sup>Excludes 101 units that did not operate a plane. Data on both flight hours and missions flown were available for 68% of the included units.

<sup>b</sup>Excludes 25 units that did not operate a helicopter. Data on both flight hours and missions flown were available for 68% of the included agencies.

## Nearly all aviation units responded to calls for service or requests for assistance

In 2007, aviation units engaged in a variety of general law enforcement operations. Almost all units (98%) responded to calls for service or requests for assistance and conducted photo flights (table 9). About 9 in 10 units (94%) provided direct assistance to ground units in making arrests, assisted with vehicle or foot pursuits (92% each), and performed search operations using thermal imagery camera equipment (87%). Approximately 7 in 10 units (72%) were

involved in stolen vehicle recoveries, and nearly half of all units (47%) issued traffic enforcement citations. The same percentage of units (47%) made DUI arrests.

Aviation units across the four agency types were relatively consistent in the percent of units engaging in general operations activities. Sheriffs' offices had the lowest percentage of units engaging in each activity except for stolen vehicle recovery.

Although not all aviation units were able to report on the number of times the general operation functions were performed, the two most frequently reported aviation unit tasks were responding to calls for service and issuing traffic enforcement citations. (See appendix table 4 for data on general operation functions.)

## About 80% of aviation units performed counterterrorism missions

Aviation units were also responsible for carrying out or assisting with special operations, such as homeland security missions, emergency medical services (EMS), surveillance operations, prisoner transport, and firefighting operations.

The most common special operations performed by aviation units involved surveillance activities. These were performed by more than 85% of all aviation units (table 10). Eighty-nine percent of units engaged in counternarcotics surveillance operations, and 94% participated in other types of criminal activity surveillance. Nearly 8 in 10 (79%) aviation units performed counterterrorism missions, such as conducting critical facility checks on buildings, ports, public utilities, oil refineries, bridges, airports, and monuments. County police departments had the largest percentage of aviation units engaging in counterterrorism missions (92%), while sheriffs' offices had the lowest percentage (75%).

**Table 9. General law enforcement operations, by type of aviation activity, 2007**

Type of activity	Percent of aviation units				
	All units	State police	Municipal police	County police	Sheriffs' offices
Respond to calls for service	98%	100%	99%	100%	95%
Photo flights*	98	98	100	100	95
Direct assistance to ground units in arrests	94	93	97	100	89
Vehicle pursuits	92	93	97	100	86
Foot pursuits*	92	93	97	100	87
Thermal imagery searches	87	89	91	92	82
Stolen vehicle recovery	72	59	82	62	72
Traffic enforcement citations*	47	82	54	39	23
DUI arrests*	47	47	64	39	32
<b>Number of aviation units</b>	201	44	68	13	76

Note: Includes agencies operating at least one plane or helicopter in 2007.

\*Data available for 198 units (or 99%).



Aviation units less commonly performed functions related to special weapons and tactics (SWAT) operations. Thirty-six percent of aviation units performed tactical insertions of SWAT members, 24% conducted tactical insertions via helicopter skid deployment, and 17% conducted tactical insertions through fast rope or rappel deployment. Fewer than 10% of aviation units were involved in incidents requiring airborne use of force.

With the exception of conducting search operations, less than half of aviation units performed air ambulance or EMS operations. EMS activities varied among agencies and by type of activity, with a high of 92% of county police units

conducting searches for missing individuals, compared to a low of 10% of municipal police department units performing transports to medical facilities and hoist rescues.

Prisoner air transport missions were performed by 22% of aviation units, and 19% of units conducted extraditions using unit aircraft during 2007. State police had the highest percentage of units performing both air transport (43%) and extradition (32%) missions of all agency types. More than half (57%) of all aviation units participated in firefighting missions in 2007. (See appendix table 4 for more detailed information on special operations activities performed).

**Table 10. Special law enforcement operations, by type of aviation activity, 2007**

Special operations activity	Percent of aviation units				
	All units	State police	Municipal police	County police	Sheriffs' offices
<b>Homeland security/counterterrorism missions<sup>a</sup></b>	79%	77%	82%	92%	75%
<b>Special weapon and tactics (SWAT) operations</b>					
Tactical insertions of SWAT members <sup>a</sup>	36%	41%	31%	33%	39%
Tactical insertions via helicopter skid deployment	24	23	21	39	24
Tactical insertions via fast rope/rappel deployment	17	23	10	23	17
Incidents involving airborne use of force (AUF)	8	2	9	8	11
<b>Air ambulance or emergency medical service (EMS) operations</b>					
Search operations <sup>b</sup>	79%	84%	63%	92%	87%
Emergency rescue missions <sup>a</sup>	35	42	24	46	40
Air responses to on-scene medical emergencies	26	39	16	39	25
Transports to medical facilities	21	25	10	31	28
Hoist rescues	16	18	10	15	20
<b>Surveillance operations</b>					
Criminal activity surveillance missions	94%	96%	99%	92%	90%
Counternarcotics operations	89	86	90	92	90
<b>Transport</b>					
Prisoner air transport missions <sup>a</sup>	22%	43%	12%	8%	22%
Extraditions conducted using unit aircraft	19	32	10	8	20
<b>Firefighting</b>	57%	57%	60%	54%	54%
<b>Number of aviation units</b>	201	44	68	13	76

Note: Includes agencies operating at least one plane or helicopter in 2007.

<sup>a</sup>Data available for 99% of aviation units.

<sup>b</sup>Includes searches for hikers, boaters, skiers, and other persons reported to law enforcement as lost or stranded.

## More law enforcement functions performed by helicopters than planes

In 2007, the functions performed by aviation units varied depending on whether a plane or helicopter was used. With the exceptions of personnel transport, prisoner transport, and speed enforcement, a greater percentage of units performed the 16 listed functions of aviation units using a helicopter than using a plane (figures 2, 3). Aviation units performed an average of 10 of the 16 functions using helicopters, while aviation units using planes performed an average of 8 of the 16 functions (not shown in a table). This finding suggests that there was greater variability in the types of tasks that were seen as suitable for helicopters as those that were suitable for planes.

Among aviation units operating planes, the three most common functions performed by 80% or more of all units were pilot training (87%), surveillance (84%), and personnel transport (80%). By contrast, over 80% of aviation units using a helicopter engaged in the following seven functions: photographic flights (99%), surveillance (97%), routine patrol or patrol support (93%), fugitive searches (91%), search and rescue (91%), pilot training (90%), and drug location and interdiction (89%).

The functions with the largest disparity in terms of the percentage of units performing the action with a helicopter versus units performing with a plane were SWAT operations performed by 74% of units with a helicopter and 25% of units with a plane, and fugitive searches performed by 91% of units with a helicopter and 48% with a plane.

**Functions performed by aviation units operating planes**

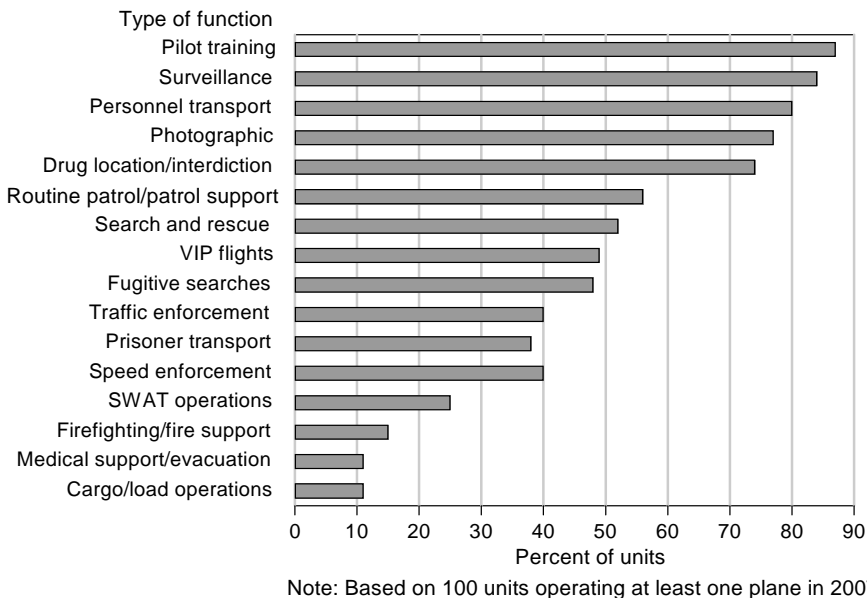


Figure 2

**Functions performed by aviation units operating helicopters**

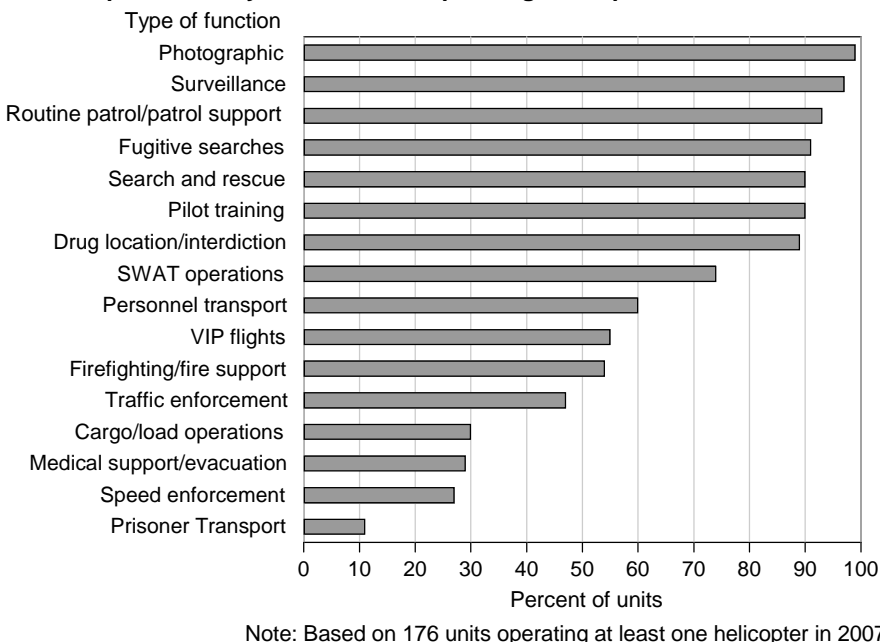


Figure 3

## Over half of aviation unit personnel were pilots

In 2007, a total of about 3,400 sworn and non-sworn personnel were assigned on at least a part-time basis to aviation units in large law enforcement agencies. Of those employees, approximately 60% were full-time sworn officers, 16% were part-time sworn officers, 15% were full-time non-sworn personnel, and 9% were part-time non-sworn personnel (table 11). Aviation units had a median of 10 employees.

Among the positions held by aviation unit personnel, pilots accounted for the largest percentage of employees (51%), followed by tactical flight officers (TFOs) (24%), mechanics (11%), administrators (6%), paramedics (6%), and other personnel (2%).<sup>6</sup>

<sup>6</sup>CLEAU did not capture how mechanical or other services were provided if in-house employees were not assigned to the aviation unit.

In part, pilots accounted for a high percentage of aviation unit personnel because only 65% of units had a TFO or mechanic, 40% had an administrator, and less than 10% had paramedics or employees serving in other positions.

The majority of aviation unit pilots (77%), administrators (57%), and paramedics (55%) were full-time sworn officers. Most TFOs were part-time sworn officers (49%). Of those employed as mechanics, the largest percentage were full-time non-sworn personnel (67%). The majority of other unit personnel were part-time, non-sworn employees (53%).

**Table 11. Law enforcement aviation unit personnel, by position title, 2007**

Position title	Number of units	Median number of employees per unit	Sworn personnel		Non-sworn personnel*	
			Full-time	Part-time	Full-time	Part-time
<b>All personnel</b>	201	10.0	2,032	547	522	317
Pilot	200	4.5	1,336	111	149	139
Observer or tactical flight officer	130	3.5	374	392	4	29
Paramedic or emergency medical technician	19	6.0	110	25	37	29
Airframe and powerplant mechanic	130	2.0	70	8	241	40
Administrator	80	1.0	124	10	72	13
Other	15	2.0	18	1	19	43

Note: Data available for 200 units (or 99.5%). Includes units operating at least one plane or helicopter and reporting at least one part-time employee assigned to the position in the unit.

\*Includes non-sworn employees and contractors.

**County police had more aviation personnel per unit than any other law enforcement agency**

The median number of full-time equivalent personnel per aviation unit varied depending on the agency type—state police, municipal police, county police, and sheriffs’ offices—and type of aviation unit. The number of personnel per aircraft also varied across the types of law enforcement agencies.

County police units (N=13) had the largest median number of personnel per unit (13.0) and per aircraft (4.3). State police units had the second largest median number of personnel per unit (12.5), and the smallest median number of personnel per aircraft (1.7). Units operating both types of aircraft had a larger median number of personnel (12.5) than plane-only (6.5) or helicopter-only (8.0) units (figures 4,5, and 6).

**Median number of personnel employed by or assigned to aviation units, by type of agency, 2007**

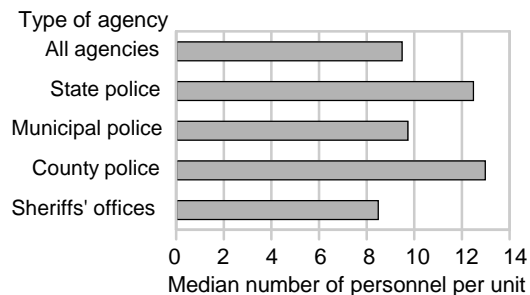


Figure 5

**Median number of personnel employed by or assigned to aviation units, by type of unit, 2007**



Figure 4

**Median number of aviation unit personnel per aircraft operated by type of agency, 2007**

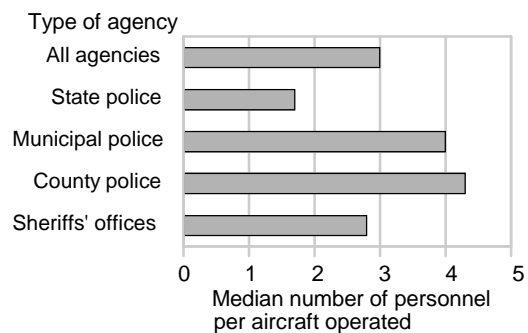


Figure 6

**Prior law enforcement experience was required of pilots and pilot candidates by the majority of aviation units**

The majority of aviation units required plane (69%) and helicopter (73%) pilots to be sworn law enforcement officers. More than half (52%) of the 201 units required pilots or pilot candidates to meet a set minimum number of years of law enforcement experience (table 12). Of those units requiring previous law enforcement experience, about 70% (or 36% of all units) required pilots to have between two to four years experience. Eighty-one percent of units (or 42% of all units) requiring previous law enforcement experience mandated that it must be within the agency.

County police agencies had the greatest percentage of units requiring both plane (100%) and helicopter (83%) pilots to be sworn law enforcement officers. Sheriffs' office aviation units were the least likely to require that plane or helicopter pilots be sworn officers.

Municipal police (68%) had the highest percentage of units with a mandate for pilots or pilot candidates to have previous law enforcement experience. Sheriffs' offices (30%) had the lowest percentage.

In addition to previous law enforcement experience, 63% of all aviation units required new pilot candidates to have Federal Aviation Administration (FAA) pilot ratings prior to joining the unit.

**Commercial pilot license was required for about 70% of plane and helicopter pilots in command**

The majority of aviation units required new pilot candidates to hold a minimum pilot rating prior to serving as the pilot in command (PIC) responsible for the operation and safety of the aircraft during flight time. Among aviation units with planes (100), 95% required PIC plane pilots to hold a set minimum pilot rating, and among units with helicopters (176), 88% reported having a minimum pilot-rating requirement for the helicopter PIC (table 13).

**Aviation units having both types of aircraft flew more helicopters than planes**

Aviation units with both planes and helicopters theoretically have the option of using either type of aircraft to perform a particular function. With the CLEAU data, there are two main ways to assess which type of aircraft multicraft aviation units used when they had the option of either a plane or a helicopter.

The first way to assess aircraft preference is to examine the flight hours accumulated in helicopters versus planes. Of the 75 multicraft aviation units, 76% logged more flight hours in helicopters than in planes. Approximately 70% of the multicraft units had at least twice as many helicopter flight hours as plane flight hours. Over 50% of the multicraft units (38 units) logged four times or more flight hours in helicopters than planes (not shown in a table).

To assess aircraft preference regarding the functions performed in helicopters compared to planes, multicraft units that reported engaging in a particular function were examined. For all but three functions (personnel transport, speed enforcement, and prisoner transport) a greater percentage of units used a helicopter than a plane. The three functions in which the difference in the percentage of units performing the function with a helicopter versus with a plane was the greatest were firefighting, SWAT operations, and medical support.

Functions served	Units performing function		Percent of units performing function with—	
	Number	Percent	Planes	Helicopters
Photographic	74	99%	76%	100%
Surveillance	72	96	86	100
Drug location/interdiction	72	96	74	95
Fugitive searches	72	96	42	99
Routine patrol/patrol support	70	93	51	94
Search and rescue	70	93	46	100
Pilot training	69	92	91	100
Personnel transport	64	85	97	84
SWAT operations	62	83	26	100
VIP flights	51	68	77	90
Traffic enforcement	46	61	59	65
Firefighting/fire support	42	56	24	100
Speed enforcement	36	48	81	47
Prisoner transport	33	44	88	34
Medical support/evacuation	28	37	25	96
Cargo/load operations	29	39	31	100

Note: Based on 75 multicraft aviation units. Includes multicraft units which reported serving in the listed function. Percentages will not sum to 100% because units may use both planes and helicopters for the functions.

**Table 12. Pilot and pilot candidate qualifications, by type of law enforcement agency, 2007**

Qualification	Percent of aviation units with requirements for pilots—				
	All agencies	State police	Municipal police	County police	Sheriffs' offices
<b>Sworn officer designation mandatory</b>					
Plane pilots <sup>a</sup>	69%	74%	74%	100%	60%
Helicopter pilots <sup>b</sup>	73	79	80	83	60
<b>Minimum years of law enforcement experience<sup>c</sup>—</b>					
Under 1 year	7	16	3	0	7
2-4	36	39	50	54	18
Over 5	10	9	15	8	5
<b>Law enforcement experience within the agency</b>	42%	58%	55%	54%	19%
<b>Prior held pilot ratings</b>	63%	82%	44%	62%	70%

Note: Includes agencies operating at least one plane or helicopter in 2007.

<sup>a</sup>Based on 100 units operating planes in 2007.

<sup>b</sup>Based on 176 units operating helicopters in 2007.

<sup>c</sup>Data available for 199 aviation units (or 99%).

**Table 13. License and rating requirements for pilot in command (PIC), by type of law enforcement aircraft, 2007**

Pilot in command requirements <sup>a</sup>	Plane <sup>b</sup>	Helicopter <sup>c</sup>
<b>Any requirement</b>	95%	88%
<b>License requirement</b>		
Airline transport pilot (ATP)	1%	0%
Commercial pilot	68	74
Private pilot	34	20
<b>Rating requirement</b>		
Instrument	53%	18%
Single-engine land (SEL)	35	9
Single-engine sea (SES)	1	0
Multi-engine land (MEL)	13	1
Multi-engine sea (MES)	1	0

Note: Percentages do not sum to total because pilots can be required to hold multiple ratings. Includes agencies operating at least one plane or helicopter in 2007.

<sup>a</sup>Defined as the pilot responsible for the operation and safety of the aircraft during flight time.

<sup>b</sup>Based on 100 aviation units operating a plane in 2007.

<sup>c</sup>Based on 176 aviation units operating a helicopter in 2007.

The most frequent aviation unit rating requirements for plane PICs were a commercial pilot's license (68%), private pilot's license (34%), instrument rating (53%), and rating to fly a single-engine land (SEL) (35%) plane. For helicopter PICs, the most frequent rating requirements were a commercial license (74%), private license (20%), and instrument rating (18%). The FAA specifies that at a minimum a commercial rating requires 250 hours of flight time and instruction, and ratings for a private license or single-engine or multi-engine plane require 40 hours. An instru-

ment rating allows a pilot to fly in inclement weather and requires an already-certified pilot to take a specific course on the instrument panel and pass a knowledge test.<sup>7</sup>

Multiple rating requirements were more common for plane PICs than for helicopter PICs. Nearly 7 in 10 (69%) aviation units operating planes required multiple ratings for the PIC, compared to 35% of units operating helicopters (not shown in a table).

### Approximately 9 in 10 aviation units had a certified flight instructor on staff in 2007

In 2007, 87% of aviation units employed a certified flight instructor (CFI). A CFI holds a FAA flight instructor certificate and is authorized to teach and give pilot endorsements. State police had the highest percentage of units (93%) with a CFI.

Type of agency	Percent of units with a CFI
<b>All agencies</b>	87%
State police	93
Municipal police	88
County police	85
Sheriffs' offices	83

Note: Percentages based on 201 total aviation units (44 state police, 68 municipal police, 13 county police, and 76 sheriffs' office units). Data available for 99.5% of aviation units.

### Over 80% of aviation units provided in-house recurrent training for pilots

In 2007, 81% of aviation units provided their pilots with in-house recurrent training, 66% provided factory recurrent training, 36% conducted unit checkrides, and 34% provided other types of training, including training on equipment

<sup>7</sup>Electronic Code of Federal Regulations. Title 14: Part 61. Accessed April 21, 2009. Available at <http://ecfr.gpoaccess.gov>.

such as helibuckets, hoists, and night vision goggles (table 14). Recurrent training, such as refresher courses on aircraft systems, emergency procedures, or protocols for missions performed infrequently, were offered in-house two to four times per year and through a vendor one to two times per year by approximately half of aviation units. A quarter of the units conducted unit checkrides either once or twice a year.

#### About 40% of aviation units paid for all pilot training

The greatest proportion of aviation units (44%) provided funding for some of the required pilot training, 38% paid for all types of training, and 6% did not pay for any pilot training (not shown in a table). The largest percentage of aviation units (93%) paid for recurrent training, followed by advanced (73%) and initial (42%) training.

Type of pilot training	Paying for pilot training
Initial	42%
Advanced	73
Recurrent	93

Note: Data are available for 199 units (or 99%).

#### The majority of aviation units conducted safety meetings on at least a quarterly basis

In addition to trained pilots, aviation units frequently practiced a number of other safety measures. In 2007, 89% of aviation units had a designated safety manual, 90% conducted safety meetings, and 90% held private insurance. Over 75% of units had a designated safety officer (table 15).

Of the 181 aviation units conducting safety meetings, the greatest percentage (36%) held the meetings quarterly, followed by 27% holding them monthly. Among units with insurance coverage from a private insurer, 80% had hull and liability coverage, 14% had liability-only coverage, and

**Table 14. Pilot training provided by law enforcement agencies, by type and frequency, 2007**

Type of training	Percentage of aviation units providing training						
	Total	Monthly	Bi-monthly	Quarterly	Bi-annually	Annually	Other
<b>Recurrent</b>							
In-house	81%	13	3	21	25	16	3
Factory	66%	0	0	2	14	40	10
<b>Unit checkrides</b>	36%	1	2	8	11	14	2
<b>Other*</b>	34%	4	1	6	8	12	3

Note: Percentages may not sum to total due to rounding. Includes agencies operating at least one plane or helicopter in 2007.

\*Other training includes such training as helicopter bucket or helibucket use, emergency procedures, night vision goggles, rappelling, hoist operations, and tactical operations.

about 4% had hull-only coverage. Overall, sheriffs' offices had the highest percentage of units with private insurance (97%), while state police had the lowest percentage (82%).

#### All accidents reported in 2007 involved a plane

An accident was defined in the CLEAU as "any incident in which the aircraft caused damage or injury or was damaged during use." The 201 aviation units nationwide reported three accidents in 2007, and all three involved a plane.

From 2003 to 2006, there were 32 accidents involving aviation unit aircraft. Half of these accidents involved planes and half involved helicopters.

Year	Number of accidents	
	Plane	Helicopter
2007	3	0
2003-2006	16	16

Note: Respondents were instructed to include any incident in which the aircraft caused damage or injury or was damaged during use.

**Table 15. Aviation unit safety measures, by type of law enforcement agency, 2007**

Safety measure	All agencies	State police	Municipal police	County police	Sheriffs' offices
<b>Designated safety officer</b>	77%	77%	81%	62%	76%
<b>Designated safety manual</b>	89%	88%	91%	77%	89%
<b>Safety meetings conducted<sup>a</sup>—</b>	91%	89%	87%	92%	93%
Monthly	24	18	24	23	29
Bimonthly	4	2	6	0	3
Quarterly	32	36	25	39	34
Biannually	11	18	13	8	7
Annually	11	14	10	8	11
Other or as needed	8	0	9	15	9
<b>Private insurance<sup>b</sup></b>	90%	82%	88%	92%	97%
Hull-only	4	7	3	0	4
Liability-only	13	11	13	0	17
Both	72	64	71	92	75

Note: Includes agencies operating at least one plane or helicopter in 2007. Unless otherwise noted, percentages are based on 201 total aviation units, which include 44 state police, 68 municipal police, 13 county police, and 76 sheriffs' offices.

<sup>a</sup>Percentages may not sum to total due to rounding.

<sup>b</sup>Insurance types may not sum to total due to rounding and missing data. Insurance data available for 198 units or 99% of aviation units.

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## Methodology

The universe for the 2007 Census of Law Enforcement Aviation Units (CLEAU) was any law enforcement agency with 100 or more sworn officers that reported operating a fixed-wing plane or helicopter in the 2003 Law Enforcement Management and Administrative Statistics (LEMAS) Survey. Based on the 2003 LEMAS, the CLEAU was sent to 245 of the 941 LEMAS agencies with 100 or more sworn officers.

The CLEAU was a paper questionnaire mailed to each agency chief. Data collection began in March 2008 and ended in September 2008. Respondents used either calendar or fiscal year 2007 for all questions referring to 2007 and the last day of calendar or fiscal year 2007 for all other questions.

Of 245 agencies, 241 (or 98%) responded. Twenty-four agencies (9.8%) no longer operated aircraft or had misreported in the 2003 LEMAS and never operated aircraft. Five agencies shared an aviation unit with another agency that had already responded, and 11 agencies had fewer than 100 sworn officers. As a result, the final CLEAU database included 201 aviation units.

Not enough data were available for reliable estimates on the 11 aviation units in smaller law enforcement agencies. Of these 11 agencies, 10 were sheriffs' offices and one was a municipal police department. Six units operated one plane, three operated one helicopter, and two operated two helicopters.

The 2007 LEMAS Survey revealed an additional 25 agencies operating a plane or helicopter that were not included in the CLEAU because in 2003 they had fewer than 100 sworn officers, did not operate a plane or helicopter, did not respond to the question regarding the type of equipment operated, or did not complete the 2003 LEMAS survey. The 25 agencies operated a total of 39 planes and 31 helicopters in 2007. These agencies and the number of planes, helicopters, and full-time sworn officers are listed in appendix table 5.

### *Estimating total expenditures*

Eleven agencies in the CLEAU did not report 2007 expenditures. Expenditures among reporting units were highly correlated with whether an aircraft was obtained in 2007, type of aircraft operated, and flight hours logged. Thus, for the remaining 11 units a total expenditure amount was estimated from data on whether an aircraft was obtained in 2007 and from plane and helicopter flight hours.

For the six units that did not obtain a plane in 2007, expenditures were computed by multiplying plane flight hours by the mean plane cost per hour for maintenance (\$76) and the mean plane cost per hour for fuel (\$69), by multiplying helicopter flight hours by mean helicopter cost per hour for maintenance (\$224) and mean helicopter cost per hour for

fuel (\$102), then adding the four amounts. If the agency did not have a plane or helicopter, the flight hours were set to zero.

For the five units that obtained a plane in 2007, \$2,720,036 (the mean amount of aircraft purchases among units obtaining one aircraft in 2007) was added to the end of the same formula. The sum of the estimated total expenditures for the 11 agencies was \$18,058,306. The six units that did not obtain an aircraft in 2007 had mean expenditures estimated at \$535,108 per unit. The five units that had obtained an aircraft in 2007 had mean expenditures estimated at \$2,969,532.

### *Estimating total flight hours*

Eight units in the CLEAU were unable to report on 2007 flight hours. For these units total flight hours were estimated from unit data on number of planes, helicopters, pilots, and total expenditures, which were significantly related to flight hours. The estimate was computed using the mean flight hours per plane, helicopter, pilot, and cost per flight hour for the 96% of the units with available data. Three different estimates of total flight hours were computed, and the average of the three was used as the estimate for the unit. First, total flight hours per aircraft was computed by multiplying total planes by mean flight hours per plane, by multiplying total helicopters by mean flight hours per helicopters, then adding the two amounts. Second, total flight hours per pilot was computed by multiplying the number of sworn pilots in the unit by the mean flight hours per pilot. Third, the total unit expenditures were divided by the mean cost per flight hour. Fourth, flight hours per aircraft, per pilot, and as a proportion of total expenditures were then added together and divided by three to reach an average. The sum of the estimated flight hours for the eight agencies was estimated at 12,751, with a mean of 1,594 flight hours per unit.

### *Estimating total missions flown*

Fifty-six aviation units either did not track or report the number of missions flown. For these units, the total number of missions flown was estimated from data on the type of agency, number of flight hours, and mean flight hours per mission, computed from the units reporting both flight hours and missions flown. The mean number of flight hours per mission varied depending on agency type.

The formula for state police units was  $(x/2.2)$ ; for municipal police  $(x/5.8)$ ; for county police  $(x/0.6)$ ; and for sheriffs' offices  $(x/3.8)$ . In each, "x" equals the mean number of flight hours per mission flown for each agency. For the eight agencies not reporting flight hours the formula remained the same, but the previously-computed flight hour estimates were used in the place of the actual flight hours. The sum of estimated missions flown for the 56 aviation units was 384,816 missions.

**Appendix table 1. Law enforcement agencies with 100 or more sworn personnel and aviation units, by state and unit characteristics, 2007**

State and aviation unit	Type of agency	Planes	Helicopters	Pilots	Flight hours
<b>Alabama</b>					
Alabama State Trooper Aviation Unit (DPS Aviation)	State police	5	9	8	3,135
Tuscaloosa Police Helicopter Division	Municipal police	0	3	3.5	844
State total		5	12	11.5	3,979
<b>Alaska</b>					
Alaska Department of Public Safety	State police	35	4	39	9,000
State total		35	4	39	9,000
<b>Arizona</b>					
(City of) Phoenix Police Department, Air Support Unit	Municipal police	3	7	28	6,823
Arizona Department of Public Safety Aviation Bureau	State police	4	5	29.5	3,353
Maricopa County Sheriff Air Support Unit	Sheriffs' office	2	4	12	...
Mesa Police Department Aviation Unit	Municipal police	1	3	8.5	4,175
Pima County Sheriff Tactical Air Support Unit	Sheriffs' office	4	0	6	3,000
Tuscon Police Department Air Support Unit	Municipal police	0	3	8	2,300
Yavapai County Sheriffs' Office	Sheriffs' office	1	0	1	20
State total		15	22	93	9,495
<b>Arkansas</b>					
Arkansas State Police Aircraft Section	State police	2	2	5	480
Benton County Sheriffs' Office Airborne Unit	Sheriffs' office	0	2	3	194
State total		2	4	8	674
<b>California</b>					
Alameda County Narcotics Task Force Aviation Unit	Sheriffs' office	1	0	2.5	300
Anaheim Police Air Support	Municipal police	0	3	7	3,000
Bakersfield Police Department Air Support	Municipal police	1	0	1.5	355
Burbank Police Air Support	Municipal police	0	3	6	200
Butte County Sheriffs' Aviation Unit	Sheriffs' office	1	2	2	1,200
California Highway Patrol Office of Air Operations	State police	16	15	84	33,524
Contra Costa County Office of the Sheriff Air Support Unit	Sheriffs' office	0	2	2	807
Corona Police Department Air Support Unit	Municipal police	0	1	2.5	854
Costa Mesa Police Department Airborne Law Enforcement Services (ABLE)	Municipal police	0	3	8	3,600
El Monte Police Department Region One Air Support	Municipal police	0	3	7.5	2,352
Fontana Police Air Support Unit	Municipal police	0	2	3	880
Fresno County Sheriffs' Department - Air Support Unit	Sheriffs' office	1	2	3	1,675
Fresno Police Department Air Support Unit - Skywatch	Municipal police	1	2	4	1,428
Glendale Police Air Support Unit	Municipal police	0	3	7.5	2,200
Huntington Beach Police Department Air Support Unit	Municipal police	0	3	6	1,865
Kern County Sheriffs' Department	Sheriffs' office	2	5	5.5	2,347
LA Police Department Air Support Division	Municipal police	1	18	51	17,048
Long Beach Police Department Air Support Unit	Municipal police	0	2	4	1,450
Los Angeles County Sheriffs' Department - Aero Bureau	Sheriffs' office	3	15	25	...
Marin County Sheriffs' Air Patrol	Sheriffs' office	1	0	11	200
Oakland Police Air Support Unit	Municipal police	0	3	5	1,200
Ontario Police Air Support Unit	Municipal police	0	2	4.5	2,200
Orange County Sheriffs' Department Air Support Bureau	Sheriffs' office	0	2	3	2,300
Pasadena Police Department Air Operations Section	Municipal police	0	6	8	3,500
Placer County Sheriffs' Office - Air Support Unit	Sheriffs' office	1	1	5.5	556
Ponoma Police Department Air Support Unit	Municipal police	1	1	3.5	476
Riverside County Sheriff Aviation Unit	Sheriffs' office	1	6	5.5	3,772
Riverside Police Aviation Unit	Municipal police	0	4	7	2,400
Sacramento Police Department Air Support Unit	Municipal police	1	2	4.5	1,657
San Bernardino County Sheriffs' Aviation Unit	Sheriffs' office	4	10	11.5	6,146
San Diego Police Department Air Support Unit	Municipal police	2	4	9	3,616
San Diego Sheriffs' Aviation Unit (ASTREA)	Sheriffs' office	0	9	15	3,828
San Joaquin Sheriffs' Department Air Support Unit	Sheriffs' office	1	0	1.5	790
San Jose Police Department Air Support Unit	Municipal police	1	1	7	925
San Mateo County Sheriffs' Air Squadron	Sheriffs' office	1	0	10	243
Santa Barbara County Air Support Unit	Sheriffs' office	1	4	6	958
Santa Clara County Sheriffs' Office Air Support Unit	Sheriffs' office	0	1	1	560
Santa Monica Air Support Unit	Municipal police	1	1	0.5	...
Sonoma County Sheriffs' Department - Helicopter Unit	Sheriffs' office	0	1	2	593
Stanislaus County Sheriffs' Department Air Support Unit	Sheriffs' office	2	2	3	675
Tulare County Sheriffs' Department Air Support Unit	Sheriffs' office	1	0	1	...
Ventura County Sheriffs' Department Aviation/SAR Unit	Sheriffs' office	0	4	3	887
State total		46	148	360	5,631



**Appendix table 1. Law enforcement agencies with 100 or more sworn personnel and aviation units, by state and unit characteristics, 2007 (cont'd)**

State and aviation unit	Type of agency	Planes	Helicopters	Pilots	Flight hours
<b>Colorado</b>					
Colorado Springs Police Department - Air Support Unit	Municipal police	0	2	4	725
Colorado State Patrol Aircraft Section	State police	5	0	4.5	1,200
Denver Air Support Unit	Municipal police	0	1	3	721
State total		5	3	11.5	2,646
<b>Connecticut</b>					
Connecticut State Police Aviation Section	State police	3	3	3	869
Fairfield Police Department Aviation Unit	Municipal police	0	1	4	50
State total		3	4	7	919
<b>Delaware</b>					
Delaware State Police Aviation Section	State police	3	5	14	1,971
State total		3	5	14	1,971
<b>District of Columbia</b>					
Washington Metropolitan Police Department, Air Support Unit	Municipal police	0	2	7	891
District total		0	2	7	891
<b>Florida</b>					
Alachua County Sheriffs' Office/ Gainesville Police Joint Aviation Unit	Municipal police	0	3	4.5	826
Bay County Sheriffs' Office Aviation Unit	Sheriffs' office	0	2	2.5	228
Brevard County Sheriffs' Tactical Air Response (STAR)	Sheriffs' office	0	4	4.5	660
Broward County Sheriffs' Office Aviation Unit	Sheriffs' office	0	3	8	2,057
Charlotte County Sheriffs' Office Aviation Unit	Sheriffs' office	1	4	2	581
Citrus County Sheriffs' Office Aviation Unit	Sheriffs' office	1	2	6	1,020
Collier County Sheriffs' Office Aviation Bureau	Sheriffs' office	1	2	4.5	922
Escambia Sheriffs' Office Air Unit	Sheriffs' office	0	2	4	1,200
Florida Highway Patrol Aviation Unit	State police	8	0	9	4,279
Hernando County Sheriffs' Office Aviation Unit	Sheriffs' office	0	3	2	446
Hillsborough County Sheriffs' Office Aviation Section	Sheriffs' office	1	4	9	1,681
Indian River County Sheriffs' Aviation Unit	Sheriffs' office	0	2	3	371
Jacksonville Sheriffs' Office Aviation Unit	Sheriffs' office	4	4	9	3,300
Lake County Sheriffs' Aviation Unit	Sheriffs' office	1	3	5	673
Lakeland Police Department Aviation Unit	Municipal police	0	1	2	392
Lee County Sheriffs' Office Aviation Division	Sheriffs' office	2	2	6	1,525
Leon County Sheriffs' Aviation Unit	Sheriffs' office	0	3	4	372
Manatee County Sheriffs' Office Aviation Unit	Sheriffs' office	1	2	2	1,018
Marion County Sheriffs' Office Aviation Unit	Sheriffs' office	1	2	8	1,227
Martin County Sheriffs' Office Aviation Unit	Sheriffs' office	0	3	3.5	500
Miami-Dade Police Department Aviation Unit	Municipal police	2	4	13	2,525
Monroe County Sheriffs' Aviation Unit	Sheriffs' office	1	1	6	395
Osceola County Sheriffs' Aviation Unit	Sheriffs' office	1	3	5	1,510
Palm Beach County Sheriffs' Office Aviation Unit	Sheriffs' office	0	2	10	1,600
Pasco County Sheriffs' Office, Aviation Section	Sheriffs' office	1	4	3	550
Pinellas County Sheriffs' Office Flight Unit	Sheriffs' office	3	5	9	941
Polk County Sheriffs' Office Aviation Unit	Sheriffs' office	1	4	6	1,600
Santa Rosa County Sheriffs' Office Air Unit	Sheriffs' office	0	1	0	1
Sarasota County Sheriffs' Office Aviation Unit	Sheriffs' office	0	1	3.5	700
Seminole County Sheriffs' Department	Sheriffs' office	1	3	6	991
St. Johns County Sheriffs' Office - Aviation Unit	Sheriffs' office	0	1	2.5	297
St. Lucie County Sheriffs' Office Aviation Unit	Sheriffs' office	0	3	5.5	1,069
Tampa Police Aviation Unit	Municipal police	1	5	6	1,962
Volusia County Sheriffs' Office Special Services	Sheriffs' office	0	3	4.5	1,330
West Palm Beach Police Air Support Unit	Municipal police	0	1	3	1,200
State total		32	92	181.5	39,949
<b>Georgia</b>					
Clayton County Police Department, Aviation Unit	County police	0	3	1	218
City of Atlanta Helicopter Unit	Municipal police	0	3	7	1,154
Dekalb County Police Aerial Support Unit	County police	0	2	8	1,462
Fulton County Police Helicopter Squad	County police	0	1	1	125
Georgia State Patrol Aviation Division	State police	0	14	14	3,502
Gwinnett County Police Aviation	County police	0	2	5.5	...
State total		0	25	36.5	6,461

**Appendix table 1. Law enforcement agencies with 100 or more sworn personnel and aviation units, by state and unit characteristics, 2007 (cont'd)**

State and aviation unit	Type of agency	Planes	Helicopters	Pilots	Flight hours
<b>Hawaii</b>					
Honolulu Police Department Helicopter Section	Municipal police	0	2	2	493
State total		0	2	2	493
<b>Illinois</b>					
Illinois State Police Air Operations	State police	6	0	11	2,102
State total		6	0	11	2,102
<b>Indiana</b>					
Gary Police Aviation Unit	Municipal police	0	3	2	375
Indiana State Police Aviation Section	State police	3	3	7	3,521
Indianapolis Metropolitan Police Department - Aviation Section	Municipal police	0	4	3	1,100
Lake County Police Department Aviation	Sheriffs' office	0	3	2	298
State total		3	13	14	5,294
<b>Iowa</b>					
Iowa State Patrol Air Wing	State police	7	0	11	3,600
State total		7	0	11	3,600
<b>Kansas</b>					
Kansas Highway Patrol Air Support Unit	State police	5	7	10	1,332
Sedgwich County Sheriffs' Office, Extradition Unit	Sheriffs' office	1	0	2	492
Topeka Police Helicopter Unit	Municipal police	0	2	3	1,430
Wichita Police Department Air Section	Municipal police	0	1	4	405
State total		6	10	19	3,659
<b>Kentucky</b>					
Kentucky State Police Aircraft Branch	State police	2	4	4.5	1,090
Louisville Metro Police Air Unit	Municipal police	0	2	8	714
State total		2	6	12.5	1,804
<b>Louisiana</b>					
Jefferson Parish Sheriffs' Office Flight Section	Sheriffs' office	0	2	4	300
Louisiana State Police Air Support Unit	State police	5	7	10	2,059
State total		5	9	14	2,359
<b>Maine</b>					
Maine State Police Airwing	State police	2	0	2	300
State total		2	0	2	300
<b>Maryland</b>					
Anne Arundel County Police Aviation	County police	0	3	3.5	631
Baltimore County Police Aviation Team	County police	0	3	7	2,100
Baltimore Police Aviation Unit	Municipal police	0	4	9	3,574
Howard County Police Aviation Unit	County police	0	1	2	374
Maryland State Police Aviation Command	State police	2	12	50	4,259
Prince George's County Police Aviation Section	County police	0	2	4	1,100
State total		2	25	75.5	12,038
<b>Massachusetts</b>					
Massachusetts State Police Air Wing	State police	1	5	11	2,057
State total		1	5	11	2,057
<b>Michigan</b>					
Michigan State Police Flight Unit	State police	2	2	2.5	752
Oakland County Sheriffs' Office - Aviation Unit	Sheriffs' office	0	2	4	702
State total		2	4	6.5	1,454
<b>Minnesota</b>					
Minnesota State Patrol Aviation	State police	6	4	9	1,729
State total		6	4	9	1,729
<b>Mississippi</b>					
Mississippi Department of Public Safety Air Operations Unit	State police	2	2	4	589
Tupulo Police Department	Municipal police	0	1	2.5	...
State total		2	3	6.5	589
<b>Missouri</b>					
Kansas City Police Helicopter Section	Municipal police	0	3	9.5	2,027
Missouri State Highway Patrol Aircraft Division	State police	0	3	14.5	2,496
St. Louis City Police Metro Air Support	Municipal police	1	5	5	2,320
St. Louis County Police Metro Air Support Unit	County police	1	4	6	1,900
State total		2	15	35	8,743

**Appendix table 1. Law enforcement agencies with 100 or more sworn personnel and aviation units, by state and unit characteristics, 2007 (cont'd)**

State and aviation unit	Type of agency	Planes	Helicopters	Pilots	Flight hours
<b>Montana</b>					
Montana Highway Patrol Aviation Section	State police	1	1	1	80
State total		1	1	1	80
<b>Nebraska</b>					
Nebraska State Patrol Aviation Unit	State police	4	1	5	1,344
Omaha Police Air Support Unit	Municipal police	0	6	5.5	1,712
State total		4	7	10.5	3,056
<b>Nevada</b>					
Las Vegas Metropolitan Police Department - Air Support Section	Municipal police	1	7	20	6,376
Nevada Highway Patrol Flight Operations Unit	State police	3	0	3	1,388
Washoe County Regional Aviation Enforcement Unit (RAVEN)	Sheriffs' office	0	3	3	186
State total		4	10	26	7,950
<b>New Hampshire</b>					
New Hampshire State Police Aviation Unit	State police	1	1	2.5	452
State total		1	1	2.5	452
<b>New Jersey</b>					
New Jersey State Police Aviation Bureau	State police	0	9	40	5,400
State total		0	9	40	5,400
<b>New Mexico</b>					
Bernalillo County Sheriffs' Department Metropolitan Air Support Unit	Sheriffs' office	0	2	3	500
New Mexico State Police Aviation Section	State police	2	1	5	492
State total		2	3	8	992
<b>New York</b>					
Erie County Sheriffs' Office Aviation Unit	Sheriffs' office	0	2	2	370
Nassau County Police Aviation Unit	County police	0	3	7	1,082
New York City Police Aviation Unit	Municipal police	0	7	32	4,449
New York State Police Aviation Unit	State police	6	11	84	5,050
Niagara County Sheriffs' Department Aviation Unit	Sheriffs' office	0	1	3	129
Onondaga County Sheriffs' Office AIR -1	Sheriffs' office	0	1	3	314
Suffolk County Police Aviation Section	County police	0	4	18	1,450
Westchester County Department of Public Safety	Sheriffs' office	0	2	3	495
State total		6	31	152	13,339
<b>North Carolina</b>					
Charlotte-Mecklenburg Police Department Aviation Unit	Municipal police	0	2	4.5	765
Henderson County Sheriffs' Office Aviation Unit	Sheriffs' office	1	1	3.5	26
North Carolina State Highway Patrol Aircraft Operation	State police	0	8	21	1,650
State total		1	11	29	2,441
<b>North Dakota</b>					
North Dakota State Highway Patrol	State police	1	0	1.5	56
State total		1	0	1.5	56
<b>Ohio</b>					
Butler County Sheriffs' Office Aviation Unit	Sheriffs' office	0	1	2.5	250
Cleveland Division of Police Aviation Unit	Municipal police	0	2	3	...
Columbus, OH, Division of Police Helicopter Unit	Municipal police	0	6	20	5,250
Ohio State Highway Patrol Aviation Section	State police	14	2	15	6,695
State total		14	11	40.5	12,195
<b>Oklahoma</b>					
Oklahoma City Police Department, Air Support Unit	Municipal police	0	2	7	1,568
Oklahoma Highway Patrol Aircraft Division	State police	11	4	18	5,328
Tulsa Police Air Support Unit	Municipal police	0	2	6	1,079
State total		11	8	31	7,975
<b>Oregon</b>					
Clackamas County Sheriffs' Office Air Unit	Sheriffs' office	1	0	2.5	60
Multnomah County Sheriffs' Office Aviation Unit	Sheriffs' office	1	0	1	100
Oregon State Police Aviation Unit	State police	5	0	5	1,620
Portland Police Bureau Air Support Unit	Municipal police	2	0	4	1,000
State total		9	0	12.5	2,780

**Appendix table 1. Law enforcement agencies with 100 or more sworn personnel and aviation units, by state and unit characteristics, 2007 (cont'd)**

State and aviation unit	Type of agency	Planes	Helicopters	Pilots	Flight hours
<b>Pennsylvania</b>					
Pennsylvania State Police Aviation and Special Services Division	State police	7	8	32	3,637
Philadelphia Police Department - Aviation Unit	Municipal police	0	2	2	1,200
State total		7	10	34	4,837
<b>South Carolina</b>					
Anderson County Sheriffs Office Aviation Unit	Sheriffs' office	0	1	4	67
Greenville County Sheriffs' Office Aviation Unit	Sheriffs' office	1	2	2.5	369
Richland County Aviation Unit	Sheriffs' office	1	1	4.5	487
Spartanburg County Sheriffs' Office Aviation Unit	Sheriffs' office	0	2	1.5	309
State total		2	6	12.5	1,232
<b>South Dakota</b>					
South Dakota Highway Patrol Aviation Section	State police	1	1	1.5	225
State total		1	1	1.5	225
<b>Tennessee</b>					
Jackson Police Department Aviation Unit	Municipal police	0	2	1.5	211
Memphis Police Department Air Support Division	Municipal police	0	4	14	1,313
Metro Nashville Police Aviation Section	Municipal police	0	6	4.5	1,650
Tennessee Highway Patrol Special Operations	State police	0	6	4	1,800
State total		0	18	24	4,974
<b>Texas</b>					
Austin Police Department Air Enforcement Unit	Municipal police	1	2	4	850
Bell County Regional Air Support Unit	Municipal police	0	1	1	250
Central Texas Air Support Unit	Municipal police	0	1	0.5	...
Dallas Police Department Helicopter Unit	Municipal police	0	4	13	2,650
El Paso Police Department Aviation Unit	Municipal police	1	2	2	270
Fort Worth Police Air Support Division	Municipal police	0	2	5.5	2,500
Houston Police Department Helicopter Patrol Unit	Municipal police	1	9	29	5,062
San Antonio Police Helicopter Detail	Municipal police	0	5	20	2,618
Texas Department of Public Safety Aircraft Section	State police	8	9	29	6,236
State total		11	35	104	19,336
<b>Utah</b>					
Utah County Sheriff - Aviation Unit	Sheriffs' office	2	0	2	220
Utah Highway Patrol Aero Bureau	State police	2	2	3.5	1,110
State total		4	2	5.5	1,330
<b>Virginia</b>					
Chesapeake Sheriff Project Lifesaver International Aviation Unit	Sheriffs' office	0	1	0.5	134
Fairfax County Police Helicopter Division	County police	0	2	6	1,293
Richmond City Metro Aviation Unit	Municipal police	4	0	3	1,898
Richmond Metro Aviation Unit	County police	4	0	3	1,898
Virginia Beach Police Department Aviation Unit	Municipal police	0	3	6	1,000
Virginia State Police Aviation Unit	State police	4	7	24	3,464
State total		12	13	42.5	9,687
<b>Washington</b>					
King County Sheriffs' Office Air Support Unit	Sheriffs' office	0	5	5	950
Pierce County Sheriff Air Unit	Sheriffs' office	2	0	4	100
Snohomish County Sheriffs' Office Air Support Unit	Sheriffs' office	0	2	2	500
Washington State Patrol Aviation Unit	State police	7	0	10.5	3,906
State total		9	7	21.5	5,456
<b>West Virginia</b>					
West Virginia State Police Section	State police	0	3	3	...
State total		0	3	3	...
<b>Wisconsin</b>					
Wisconsin State Patrol Air Support	State police	3	0	9	444
State total		3	0	9	444

... Data not reported.

**Appendix table 2. Types and numbers of aircraft operated, by type of law enforcement agency, 2007**

Type and number of aircraft operated	Percent of aviation units with—				
	All	State police	Municipal police	County police	Sheriffs' offices
<b>Total number of units</b>	201	44	68	13	76
<b>Planes only</b>	12%	23%	4%	8%	15%
1	5	2	1	0	12
2-5	5	11	3	8	3
6 or more	2	9	0	0	0
<b>Helicopters only</b>	50%	11%	72%	85%	47%
1	10	0	13	15	13
2-5	35	2	51	69	33
6 or more	5	9	7	0	1
<b>Both planes and helicopters*</b>	37%	66%	24%	8%	38%
1 plane, 1 helicopter	5	7	4	0	5
2 or more planes, 1 helicopter	<1	5	0	0	0
1 plane, 2 or more helicopters	14	2	15	8	21
2 or more planes, 2 or more helicopters	16	50	4	0	11

Note: Percentages may not add to 100% due to rounding.

\*Excludes two units because either the plane or helicopter was borrowed on an as-needed basis.

**Appendix table 3. Number of aircraft operated by aviation units, by type of agency, 2007**

Type of agency and aircraft	Number of units operating aircraft	Aircraft operated—		Percent of aviation units operating—		
		Total number	Median per unit*	1 aircraft	2-5 aircraft	6 or more aircraft
<b>All agencies</b>	201	899	3	16%	60%	24%
Planes	100	295	2	50	38	12
Helicopters	176	604	3	19	66	15
<b>State police</b>	44	384	6	2	36	62
Planes	39	204	4	13	55	32
Helicopters	34	180	4	15	47	38
<b>Municipal police</b>	68	237	3	15	66	19
Planes	19	27	1	74	26	0
Helicopters	65	210	3	19	68	14
<b>County police</b>	13	35	3	15	85	0
Planes	2	5	3	50	50	0
Helicopters	12	30	3	17	83	0
<b>Sheriffs' offices</b>	76	243	2	25	65	11
Planes	40	59	1	73	28	0
Helicopters	65	184	2	22	72	6

\*Medians for planes are calculated from only aviation units that operated a plane in 2007, and medians for helicopters are based only on the units which operated a helicopter.

**Appendix table 4. Activities engaged in by law enforcement aviation units, 2007**

Activity	Percent of units engaging in activities in 2007	Number of units providing activity counts	Total number of times activity was performed	Number of times activity was performed per unit				
				Maximum	Mean	Bottom 25th percentile	50th percentile	Top 75th percentile
<b>General operations</b>								
Respond to calls for service or requests for assistance	98%	123	437,487	72,543	3,557	297	1,059	3,500
Photo flights	98	109	7,131	507	65	14	37	85
Direct assistance to ground units in arrests	94	106	44,821	7,500	423	28	151	475
Vehicle following/pursuits	92	105	8,772	2,020	84	10	25	52
Foot pursuits/chases	92	90	8,990	1,040	100	11	33	99
Searches using thermal imagery camera equipment	87	91	57,635	7,000	633	40	150	704
Stolen vehicle recoveries	72	84	7,809	2,171	93	4	20	63
Traffic enforcement citations	47	49	161,104	48,718	3,288	9	60	325
DUI arrests	47	36	1,221	260	34	2	10	27
<b>Homeland security/counterterrorism missions</b>	79%	83	62,157	11,000	749	18	100	620
<b>Special weapon and tactics (SWAT) operations</b>								
Tactical insertions of SWAT members	36%	46	343	137	7	0	2	4
Tactical insertions via helicopter skid deployment	24	31	85	24	3	0	1	4
Tactical insertions via fast rope/rappel deployment	17	23	216	137	9	0	0	4
Incidents involving airborne use of force (AUF)	8	12	1	1	0	0	0	0
<b>Air ambulance or emergency medical services (EMS) operations</b>								
Searches for lost or stranded hikers, skiers, boaters, etc.	79%	91	7,383	850	81	9	30	100
Other rescue missions	35	41	1,375	418	34	4	15	37
Air responses to on-scene medical emergencies	26	41	14,079	5,267	343	4	25	276
Transports to medical facilities	21	35	10,101	4,399	289	2	26	232
Hoist rescues	16	27	411	123	15	0	4	15
<b>Surveillance operations</b>								
Other criminal activity surveillance missions	94%	91	4,555	475	50	10	22	68
Counternarcotics missions	89	95	8,519	1,787	90	15	29	87
<b>Prisoner transport</b>								
Prisoner air transport missions	22%	28	405	125	14	1	7	15
Extraditions conducted using unit aircraft	19	21	587	186	28	5	10	36
<b>Firefighting</b>	57%	69	2,025	507	29	3	10	20

**Appendix table 5. Agencies that reported operating a plane or helicopter in the 2007 LEMAS survey but were not included in the CLEAU**

Agency	State	Planes	Helicopters	Number of full-time sworn officers
Jefferson County Sheriff	Alabama	0	2	547
Merced County Sheriff	California	3	1	114
San Bernardino Police	California	1	1	330
Stratford Police	Connecticut	0	1	105
Miami Police	Florida	0	1	1,054
Orange County Sheriff	Florida	1	4	1,346
Columbia County Sheriff	Georgia	1	0	203
Columbus Police	Georgia	0	1	376
Coweta County Sheriff	Georgia	0	1	132
Savannah-Chatham Metro Police	Georgia	1	0	526
Spalding County Sheriff	Georgia	0	1	195
Chicago Police	Illinois	0	1	13,336
Cook County Sheriff	Illinois	0	1	2,390
Lexington Police	Kentucky	0	2	537
Macomb County Sheriff	Michigan	15	2	248
St. Charles County Sheriff	Missouri	1	3	150
Durham County Sheriff	North Carolina	6	0	163
Jacksonville Police	North Carolina	6	0	107
Pitt County Sheriff	North Carolina	0	1	119
Wilmington Police	North Carolina	0	2	250
Newark Police	New Jersey	0	1	1,229
Hamilton County Sheriff	Ohio	0	2	245
Jackson County Sheriff	Oregon	0	3	130
Aiken County Sheriff	South Carolina	1	0	119
Henrico County Police	Virginia	3	0	546



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This report in portable document format and in ASCII and its related statistical data and tables are available at the BJS World Wide Web Internet site:  
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The 2007 CLEAU dataset is available for download from the National Archive of Criminal Justice Data at  
<<http://www.icprs.umich.edu>> study number 25482.

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