

2015  
2016

# GA ACCIDENT SCORECARD



## General Aviation Accidents Summary

**T**he AOPA Air Safety Institute (ASI) has prepared this brief statistical summary of general aviation (GA) accidents in calendar years 2015 and 2016 as a supplement to its *26th Joseph T. Nall Report*. The *26th Nall Report* provides a more detailed analysis of accidents during 2014, the most recent year for which reasonably complete data are available at the necessary level of detail.

After arresting a seven-year decline in 2014, the volume of non-commercial fixed-wing flight time increased more than 5% in 2015 even as the number of accidents edged up just 1%. The number of fatal accidents declined by two. 2016 saw a 3% overall increase in accidents, but the proportion causing fatalities fell from 20% to 16%. 2016 was the fourth straight year with fewer than 1,000 non-commercial fixed-wing accidents of which fewer than 200 were fatal, levels not previously seen in the post-World War II era. There were 156 in 2016, 6% below the previous record low of 167 recorded three years earlier.

Successive year-over-year declines of 17% also brought the number of accidents on non-commercial helicopter flights to record lows, falling from 108 in 2014 to 75 in 2016. Eleven of those in 2015 were fatal, matching the mark set in 2011; 2016 and 2014 saw the second and third fewest with 13 and 14, respectively. Flight activity in this sector in 2015 stabilized at levels last seen in 2008-2009.

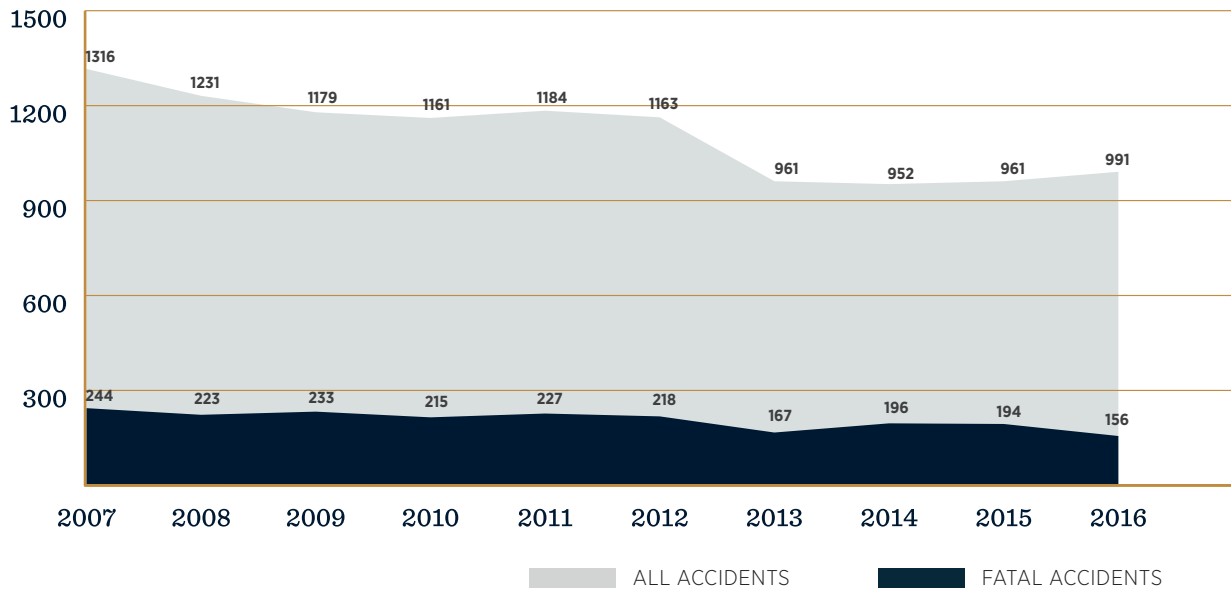
Stability also prevailed in commercial flight activity, which slipped 2% in airplanes but increased by a slightly smaller margin in helicopters. Low numbers of accidents in both categories magnify the effects of chance perturbations, making any trends more difficult to discern. In that light, the decrease from 77 commercial fixed-wing accidents in 2015 to 44 the following year is noteworthy even though the number that were fatal remained near the previous decade's average. The tally of commercial helicopter accidents, on the other hand, remained near the high end of their recent range of 30 to 41, but 2016 was one of just four years in which only four were fatal.

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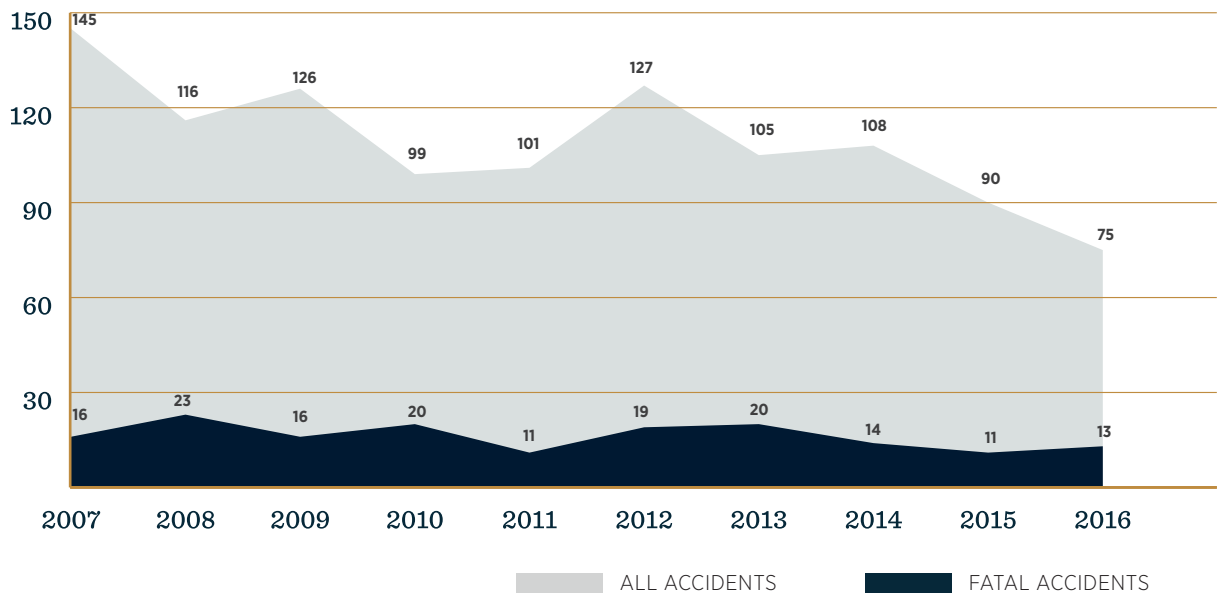
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# General Aviation Accidents, 2007-2016

## NON-COMMERCIAL FIXED-WING

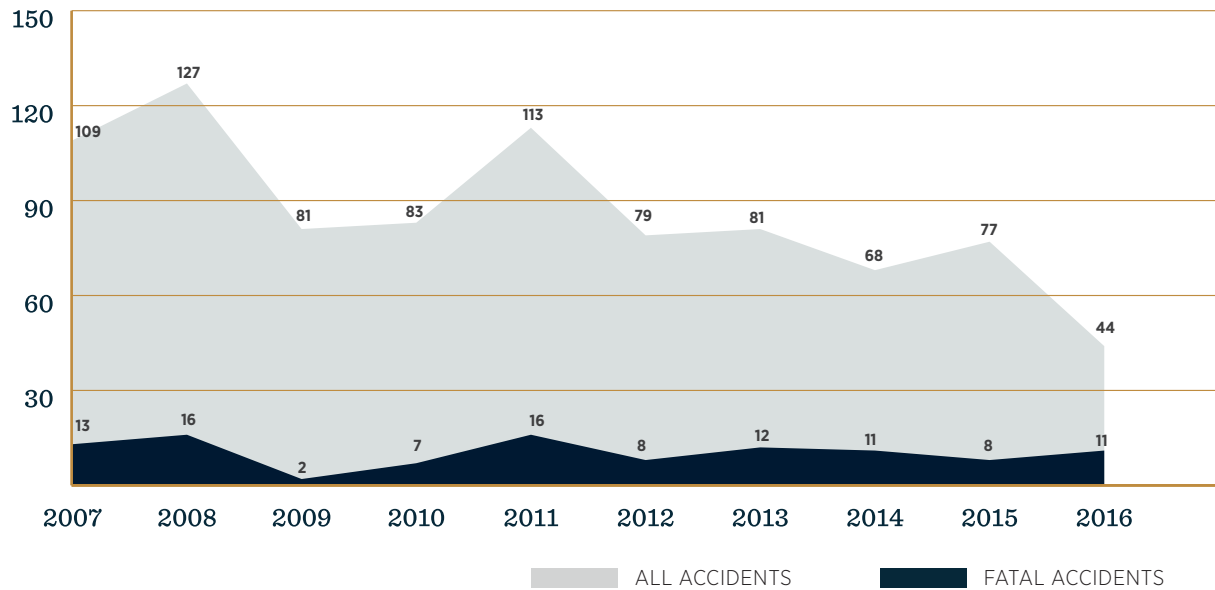


## NON-COMMERCIAL HELICOPTER

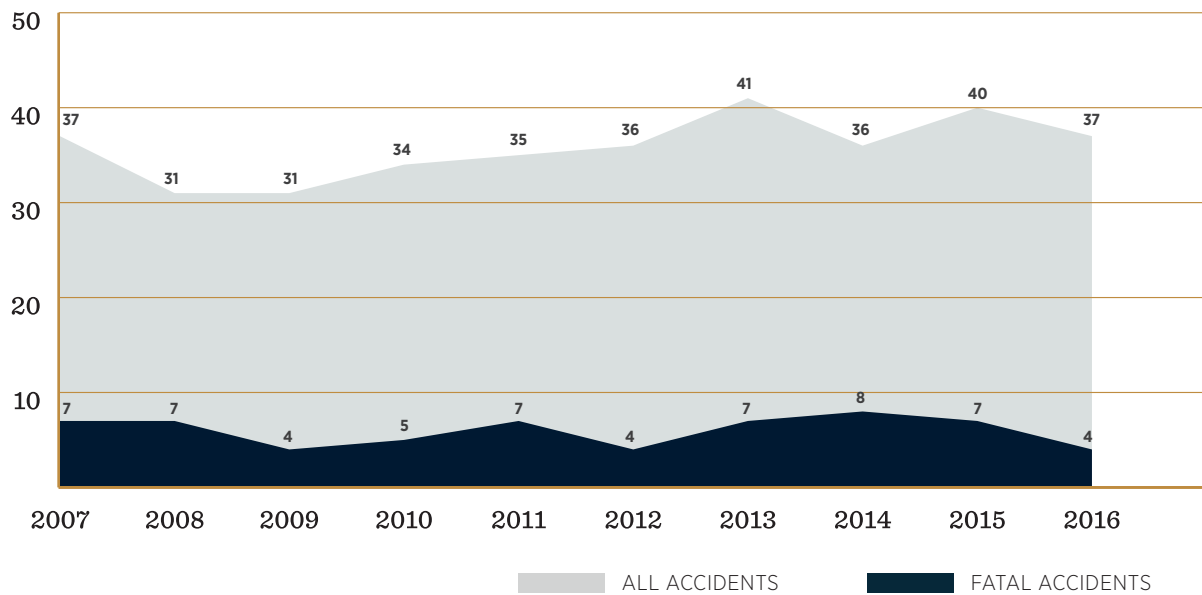


## General Aviation Accidents, 2007-2016 (Continued)

### COMMERCIAL FIXED-WING

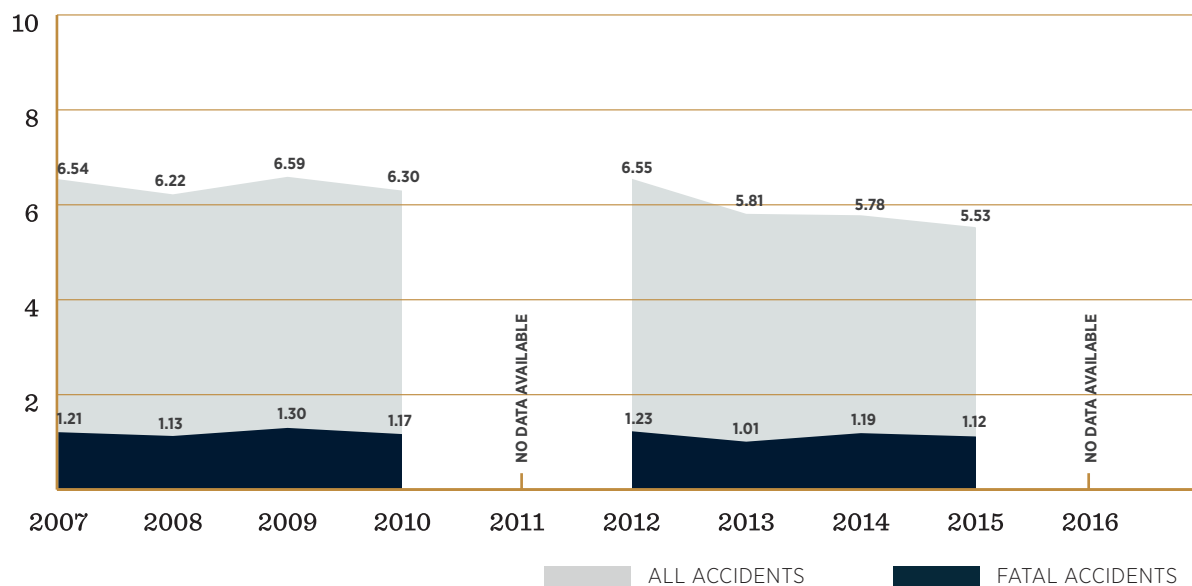


### COMMERCIAL HELICOPTER

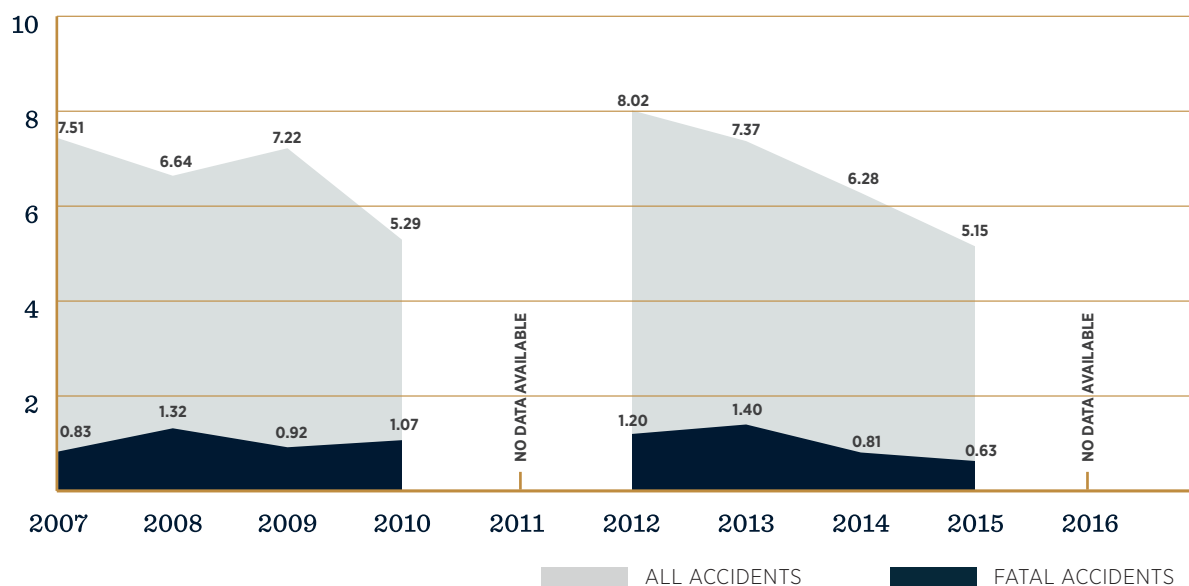


# General Aviation Accident Rates, 2007-2015

## NON-COMMERCIAL FIXED-WING

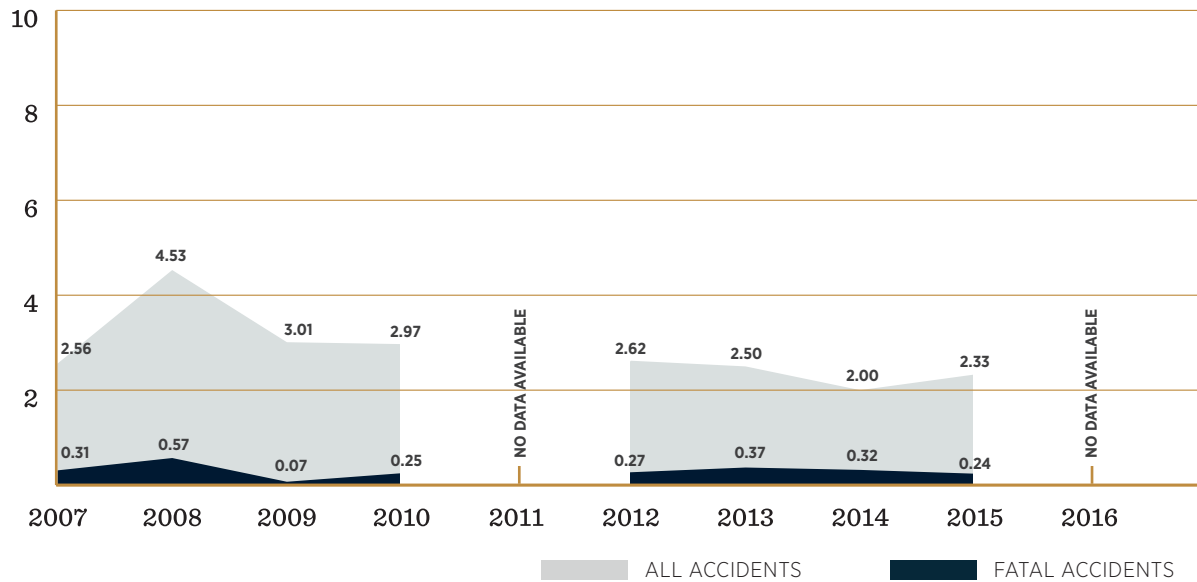


## NON-COMMERCIAL HELICOPTER

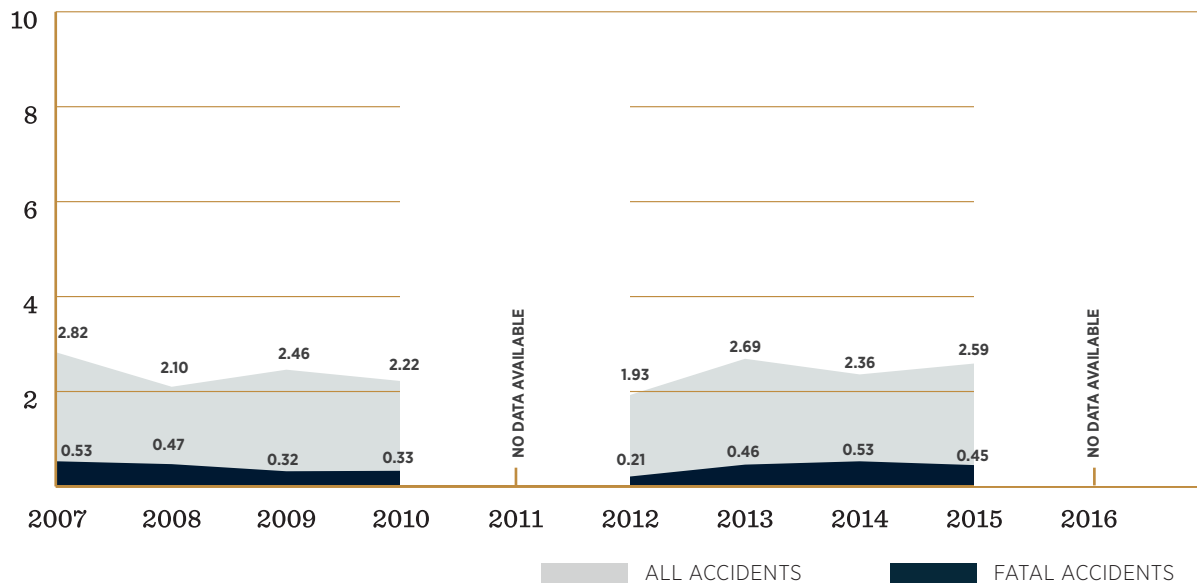


## General Aviation Accident Rates, 2007-2015 (Continued)

### COMMERCIAL FIXED-WING



### COMMERCIAL HELICOPTER



## Summary of General Aviation Accidents by Year

2015	Non-Commercial		Commercial	
	FIXED-WING	HELICOPTER	FIXED-WING	HELICOPTER
Number of accidents	961	90	77	40
Number of aircraft*	971	90	77	40
Number of fatal accidents	194	11	8	7
Lethality (percent)	20.2	12.2	10.4	17.5
Fatalities	327	17	16	12

2016	Non-Commercial		Commercial	
	FIXED-WING	HELICOPTER	FIXED-WING	HELICOPTER
Number of accidents	991	75	44	37
Number of aircraft*	1004	75	44	37
Number of fatal accidents	156	13	11	4
Lethality (percent)	15.7	17.3	25.0	10.8
Fatalities	299	23	26	7

\*EACH AIRCRAFT INVOLVED IN A COLLISION IS COUNTED SEPARATELY.

## 2015 Accident Conditions: Non-Commercial Fixed-Wing

### AIRCRAFT CLASS

CONFIGURATION	ACCIDENTS		FATAL ACCIDENTS		FATALITIES	
Single-engine fixed-gear (SEF)	719	74.0%	117	60.3%	172	52.6%
SEF tailwheel	294		36		53	
Single-engine retractable gear	195	20.1%	61	31.4%	117	35.8%
Single-engine turbine	25		10		18	
Multiengine	57	5.9%	16	8.2%	38	11.6%
Multiengine turbine	16		3		7	

### TYPE OF OPERATION

PURPOSE OF FLIGHT	ACCIDENTS		FATAL ACCIDENTS		FATALITIES	
Personal	763	78.6%	164	84.5%	285	87.2%
Instructional	111	11.4%	11	5.7%	15	4.6%
Public use	3	0.3%	1	0.5%	2	0.6%
Positioning	12	1.2%	1	0.5%	1	0.3%
Aerial observation	7	0.7%	1	0.5%	1	0.3%
Business	28	2.9%	7	3.6%	12	3.7%
Other work use	19	2.0%	3	1.5%	3	0.9%
Other or unknown	28	2.9%	6	3.1%	8	2.4%

**NOTE:** PERCENTAGES ARE PERCENT OF ALL ACCIDENTS, ALL FATAL ACCIDENTS, OR INDIVIDUAL FATALITIES, RESPECTIVELY.

## Non-Commercial Fixed-Wing, 2015 (Continued)

### PILOT QUALIFICATIONS

CERTIFICATE LEVEL	ACCIDENTS		FATAL ACCIDENTS		FATALITIES	
ATP	120	12.4%	28	14.4%	46	14.1%
Commercial	262	27.0%	57	29.4%	96	29.4%
Private	477	49.1%	89	45.9%	158	48.3%
Sport	27	2.8%	1	0.5%	2	0.6%
Recreational	3	0.3%	1	0.5%	1	0.3%
Student	64	6.6%	10	5.2%	12	3.7%
None	10	1.0%	7	3.6%	11	3.4%
Other or unknown	8	0.8%	1	0.5%	1	0.3%
Second pilot on board	114	11.7%	27	13.9%	51	15.6%
CFI on board*	194	20.0%	39	20.1%	63	19.3%
IFR pilot on board*	503	51.8%	113	58.2%	193	59.0%

\* INCLUDES SINGLE-PILOT FLIGHTS

### LIGHT AND WEATHER CONDITIONS

CONDITIONS	ACCIDENTS		FATAL ACCIDENTS		FATALITIES	
Day VMC	827	86.1%	140	72.2%	222	67.9%
Night VMC*	82	8.5%	19	9.8%	33	10.1%
Day IMC	33	3.4%	23	11.9%	42	12.8%
Night IMC*	15	1.6%	10	5.2%	25	7.6%
Not yet reported	4	0.4%	2	1.0%	5	1.5%

\* INCLUDES DUSK



## 2016 Accident Conditions: Non-Commercial Fixed-Wing

### AIRCRAFT CLASS

CONFIGURATION	ACCIDENTS		FATAL ACCIDENTS		FATALITIES	
Single-engine fixed-gear (SEF)	745	74.2%	99	61.5%	176	58.9%
SEF tailwheel	309		36		59	
Single-engine retractable gear	185	18.4%	42	26.1%	76	25.4%
Single-engine turbine	19		4		7	
Multiengine	74	7.4%	20	12.4%	47	15.7%
Multiengine turbine	20		4		12	

### TYPE OF OPERATION

PURPOSE OF FLIGHT	ACCIDENTS		FATAL ACCIDENTS		FATALITIES	
Personal	754	75.1%	124	77.0%	235	78.6%
Instructional	153	15.2%	14	8.7%	20	6.7%
Public use	7	0.7%	3	1.9%	5	1.7%
Positioning	9	0.9%	1	0.6%	1	0.3%
Aerial observation	9	0.9%	1	0.6%	3	1.0%
Business	25	2.5%	7	4.3%	16	5.4%
Other work use	19	1.9%	4	2.5%	11	3.7%
Other or unknown	28	2.8%	7	4.3%	8	2.7%

## Non-Commercial Fixed-Wing, 2016 (Continued)

### PILOT QUALIFICATIONS

CERTIFICATE LEVEL	ACCIDENTS		FATAL ACCIDENTS		FATALITIES	
ATP	187	18.6%	33	20.5%	65	21.7%
Commercial	245	24.4%	44	27.3%	80	26.8%
Private	449	44.7%	76	47.2%	144	48.2%
Sport	19	1.9%	2	1.2%	2	0.7%
Student	78	7.8%	2	1.2%	3	1.0%
None	4	0.4%	0			
Other or unknown	22	2.2%	4	2.5%	5	1.7%
Second pilot on board	138	13.7%	27	16.8%	58	19.4%
CFI on board*	225	22.4%	32	19.9%	58	19.4%
IFR pilot on board*	512	51.0%	88	54.7%	174	58.2%

\* INCLUDES SINGLE-PILOT FLIGHTS

### LIGHT AND WEATHER CONDITIONS

CONDITIONS	ACCIDENTS		FATAL ACCIDENTS		FATALITIES	
Day VMC	881	88.9%	122	78.2%	219	76.6%
Night VMC*	81	8.2%	22	14.1%	41	14.3%
Day IMC	20	2.0%	5	3.2%	9	3.1%
Night IMC*	6	0.6%	6	3.8%	14	4.9%
Not yet reported	3	0.3%	1	0.6%	3	1.0%

\* INCLUDES DUSK

## 2015 Accident Conditions: Non-Commercial Helicopter

### AIRCRAFT CLASS

CONFIGURATION	ACCIDENTS		FATAL ACCIDENTS		FATALITIES	
Single-engine piston	62	68.9%	6	54.5%	11	64.7%
Single-engine turbine	25	27.8%	4	36.4%	5	29.4%
Multiengine turbine	3	3.3%	1	9.1%	1	5.9%

### TYPE OF OPERATION

PURPOSE OF FLIGHT	ACCIDENTS		FATAL ACCIDENTS		FATALITIES	
Personal	37	41.1%	4	36.4%	8	47.1%
Instructional	22	24.4%	3	27.3%	5	29.4%
Public use	4	4.4%	1	9.1%	1	5.9%
Positioning	6	6.7%	2	18.2%	2	11.8%
Aerial observation	6	6.7%	1	9.1%	1	5.9%
Business	4	4.4%	0			
Other work use	7	7.8%	0			
Other or unknown	4	4.4%	0			

## Non-Commercial Helicopter, 2015 (Continued)

### PILOT QUALIFICATIONS

CERTIFICATE LEVEL	ACCIDENTS		FATAL ACCIDENTS		FATALITIES	
ATP	11	12.2%	0			
Commercial	55	61.1%	6	54.5%	8	47.1%
Private	19	21.1%	4	36.4%	8	47.1%
Sport	1	1.1%	0			
Student	4	4.4%	1	9.1%	1	5.9%
Second pilot on board	20	22.2%	2	18.2%	4	23.5%
CFI on board*	33	36.7%	1	9.1%	2	11.8%
IFR pilot on board*	56	62.2%	7	63.6%	9	52.9%

\* INCLUDES SINGLE-PILOT FLIGHTS

### LIGHT AND WEATHER CONDITIONS

CONDITIONS	ACCIDENTS		FATAL ACCIDENTS		FATALITIES	
Day VMC	80	88.9%	7	63.6%	12	70.6%
Night VMC*	7	7.8%	3	27.3%	4	23.5%
Day IMC	2	2.2%	1	9.1%	1	5.9%
Night IMC*	1	1.1%	0			

\* INCLUDES DUSK

## 2016 Accident Conditions: Non-Commercial Helicopter

### AIRCRAFT CLASS

CONFIGURATION	ACCIDENTS		FATAL ACCIDENTS		FATALITIES	
Single-engine piston	42	56.0%	4	30.8%	4	17.4%
Single-engine turbine	28	37.4%	6	46.2%	13	56.5%
Multiengine turbine	5	6.7%	3	23.1%	6	26.1%

### TYPE OF OPERATION

PURPOSE OF FLIGHT	ACCIDENTS		FATAL ACCIDENTS		FATALITIES	
Personal	24	32.0%	4	30.8%	6	26.1%
Instructional	17	22.7%	1	7.7%	1	4.3%
Public use	9	12.0%	1	7.7%	1	4.3%
Positioning	4	5.3%	1	7.7%	2	8.7%
Aerial observation	5	6.7%	3	23.1%	7	30.4%
Business	6	8.0%	1	7.7%	1	4.3%
Other work use	2	2.7%	0			
Other or unknown	8	10.7%	2	15.4%	5	21.7%

## Non-Commercial Helicopter, 2016 (Continued)

### PILOT QUALIFICATIONS

CERTIFICATE LEVEL	ACCIDENTS		FATAL ACCIDENTS		FATALITIES	
ATP	12	16.0%	3	23.1%	7	30.4%
Commercial	42	56.0%	8	61.5%	13	56.5%
Private	12	16.0%	1	7.7%	1	4.3%
Student	2	2.7%	0			
None	3	4.0%	0			
Other or unknown	4	5.3%	1	7.7%	2	8.7%
Second pilot on board	16	21.3%	4	30.8%	8	34.8%
CFI on board*	34	45.3%	7	53.8%	15	65.2%
IFR pilot on board*	44	58.7%	10	76.9%	18	78.3%

\* INCLUDES SINGLE-PILOT FLIGHTS

### LIGHT AND WEATHER CONDITIONS

CONDITIONS	ACCIDENTS		FATAL ACCIDENTS		FATALITIES	
Day VMC	66	88.0%	10	76.9%	19	82.6%
Night VMC*	6	8.0%	2	15.4%	3	13.0%
Day IMC	1	1.3%	1	7.7%	1	4.3%
Not yet reported	2	2.7%	0			

\* INCLUDES DUSK

## 2015 Accident Conditions: Commercial Fixed-Wing

### TYPE OF OPERATION

PURPOSE OF FLIGHT	ACCIDENTS		FATAL ACCIDENTS		FATALITIES	
Aerial application (Part 137)	51	66.2%	5	62.5%	5	31.3%
Charter or cargo (Part 135)	26	33.8%	3	37.5%	11	68.8%

### AERIAL APPLICATION (PART 137)

AIRCRAFT CLASS	ACCIDENTS		FATAL ACCIDENTS		FATALITIES	
Single-engine fixed-gear (SEF)	51	100.0%	5	100.0%	5	100.0%
SEF tailwheel	47		4		4	
Single-engine turbine	19		3		3	

### CONDITIONS

Day VMC	49	96.1%	5	100.0%	5	100.0%
Night VMC*	2	3.9%	0			

\* INCLUDES DUSK

### PILOT QUALIFICATIONS

ATP	6	11.8%	0			
Commercial	45	88.2%	5	100.0%	5	100.0%
CFI on board*	7	13.7%	0			
IFR pilot on board*	22	43.1%	3	60.0%	3	60.0%

\* INCLUDES SINGLE-PILOT FLIGHTS

## Commercial Fixed-Wing, 2015 (Continued)

### CHARTER AND CARGO (PART 135)

AIRCRAFT CLASS	ACCIDENTS		FATAL ACCIDENTS		FATALITIES	
Single-engine fixed-gear (SEF)	15	57.7%	2	66.7%	10	90.9%
SEF tailwheel	7		1		9	
Single-engine retractable	2	7.7%	1	33.3%	1	9.1%
Single-engine turbine	6		1		9	
Multiengine	9	34.6%	0			
Multiengine turbine	3		0			

### CONDITIONS

Day VMC	17	65.4%	3	100.0%	11	100.0%
Night VMC*	5	19.2%	0			
Day IMC	2	7.7%	0			
Night IMC*	2	7.7%	0			

\* INCLUDES DUSK

### PILOT QUALIFICATIONS

ATP	12	46.2%	0			
Commercial	13	50.0%	3	100.0%	11	100.0%
Other or unknown	1	3.8%	0			
Second pilot on board	3	11.5%	0			
CFI on board*	11	42.3%	1	33.3%	1	9.1%
IFR pilot on board*	25	96.2%	3	100.0%	11	100.0%

\* INCLUDES SINGLE-PILOT FLIGHTS



## 2016 Accident Conditions: Commercial Fixed-Wing

### TYPE OF OPERATION

PURPOSE OF FLIGHT	ACCIDENTS		FATAL ACCIDENTS		FATALITIES	
Aerial application (Part 137)	20	45.5%	4	36.4%	4	15.4%
Charter or cargo (Part 135)	24	54.5%	7	63.6%	22	84.6%

### AERIAL APPLICATION (PART 137)

AIRCRAFT CLASS	ACCIDENTS		FATAL ACCIDENTS		FATALITIES	
Single-engine fixed-gear (SEF)	20	100.0%	4	100.0%	4	100.0%
SEF tailwheel	20		4		4	
Single-engine turbine	7		2		2	

### CONDITIONS

Day VMC	18	90.0%	4	100.0%	4	100.0%
Night VMC*	1	5.0%	0			
Day IMC	1	5.0%	0			

\* INCLUDES DUSK

### PILOT QUALIFICATIONS

Commercial	19	95.0%	3	75.0%	3	75.0%
Other or unknown	1	5.0%	1	25.0%	1	25.0%
CFI on board*	2	10.0%	1	25.0%	1	25.0%
IFR pilot on board*	7	35.0%	2	50.0%	2	50.0%

\* INCLUDES SINGLE-PILOT FLIGHTS

## Commercial Fixed-Wing, 2016 (Continued)

### CHARTER AND CARGO (PART 135)

AIRCRAFT CLASS	ACCIDENTS		FATAL ACCIDENTS		FATALITIES	
Single-engine fixed-gear (SEF)	15	62.5%	4	57.1%	12	54.5%
SEF tailwheel	5		0			
Single-engine retractable	1	4.2%	0			
Single-engine turbine	6		3		9	
Multiengine	8	33.3%	3	42.9%	10	45.5%
Multiengine turbine	6		2		8	

### CONDITIONS

Day VMC	16	66.7%	3	42.9%	11	50.0%
Night VMC*	3	12.5%	2	28.6%	5	22.7%
Day IMC	3	12.5%	1	14.3%	2	9.1%
Night IMC*	2	8.3%	1	14.3%	4	18.2%

\* INCLUDES DUSK

### PILOT QUALIFICATIONS

ATP	15	62.5%	4	57.1%	15	68.2%
Commercial	8	33.3%	3	42.9%	7	31.8%
Other or unknown	1	4.2%	0			
Second pilot on board	2	8.3%	1	14.3%	3	13.6%
CFI on board*	8	33.3%	3	42.9%	8	36.4%
IFR pilot on board*	22	91.7%	7	100.0%	22	100.0%

\* INCLUDES SINGLE-PILOT FLIGHTS

## 2015 Accident Conditions: Commercial Helicopter

### TYPE OF OPERATION

PURPOSE OF FLIGHT	ACCIDENTS		FATAL ACCIDENTS		FATALITIES	
Aerial application (Part 137)	19	47.5%	3	42.9%	4	33.3%
Charter or cargo (Part 135)	14	35.0%	4	57.1%	8	66.7%
External load (Part 133)	7	17.5%	0			

### AERIAL APPLICATION (PART 137)

AIRCRAFT CLASS	ACCIDENTS		FATAL ACCIDENTS		FATALITIES	
Single-engine piston	10	52.6%	2	66.7%	2	50.0%
Single-engine turbine	9	47.4%	1	33.3%	2	50.0%

### CONDITIONS

Day VMC	17	89.5%	2	66.7%	3	75.0%
Night VMC*	1	5.3%	0			
Day IMC	1	5.3%	1	33.3%	1	25.0%

\* INCLUDES DUSK

### PILOT QUALIFICATIONS

ATP	2	10.5%	0			
Commercial	17	89.5%	3	100.0%	4	100.0%
CFI on board*	4	21.1%	0			
IFR pilot on board*	11	57.9%	2	66.7%	3	75.0%

\* INCLUDES SINGLE-PILOT FLIGHTS

## Commercial Helicopter, 2015 (Continued)

### CHARTER AND CARGO (PART 135)

AIRCRAFT CLASS	ACCIDENTS		FATAL ACCIDENTS		FATALITIES	
Single-engine piston	1	7.1%	0			
Single-engine turbine	11	78.6%	4	100.0%	8	100.0%
Multiengine turbine	2	14.3%	0			

### CONDITIONS

Day VMC	11	78.6%	3	75.0%	7	87.5%
Night VMC*	3	21.4%	1	25.0%	1	12.5%

\* INCLUDES DUSK

### PILOT QUALIFICATIONS

ATP	3	21.4%	1	25.0%	1	12.5%
Commercial	11	78.6%	3	75.0%	7	87.5%
CFI on board*	11	78.6%	2	50.0%	6	75.0%
IFR pilot on board*	13	92.9%	4	100.0%	8	100.0%

\* INCLUDES SINGLE-PILOT FLIGHTS

## Commercial Helicopter, 2015 (Continued)

### EXTERNAL LOAD (PART 133)

AIRCRAFT CLASS	ACCIDENTS		FATAL ACCIDENTS	FATALITIES
Single-engine piston	6	85.7%	0	
Single-engine turbine	1	14.3%	0	
CONDITIONS				
Day VMC	7	100.0%	0	
PILOT QUALIFICATIONS				
ATP	1	14.3%	0	
Commercial	6	85.7%	0	
Second pilot on board	1	14.3%	0	
IFR pilot on board*	3	42.9%	0	

\* INCLUDES SINGLE-PILOT FLIGHTS

## 2016 Accident Conditions: Commercial Helicopter

### TYPE OF OPERATION

PURPOSE OF FLIGHT	ACCIDENTS		FATAL ACCIDENTS		FATALITIES	
Aerial application (Part 137)	21	56.8%	1	25.0%	1	14.3%
Charter or cargo (Part 135)	13	35.1%	2	50.0%	5	71.4%
External load (Part 133)	3	8.1%	1	25.0%	1	14.3%

### AERIAL APPLICATION (PART 137)

AIRCRAFT CLASS	ACCIDENTS		FATAL ACCIDENTS		FATALITIES	
Single-engine piston	9	42.9%	0			
Single-engine turbine	12	57.1%	1	100.0%	1	100.0%

### CONDITIONS

Day VMC	18	85.7%	1	100.0%	1	100.0%
Night VMC*	3	14.3%	0			

\* INCLUDES DUSK

### PILOT QUALIFICATIONS

ATP	2	9.5%	0			
Commercial	19	90.5%	1	100.0%	1	100.0%
CFI on board*	8	38.1%	0			
IFR pilot on board*	10	47.6%	0			

\* INCLUDES SINGLE-PILOT FLIGHTS

## Commercial Helicopter, 2016 (Continued)

### CHARTER AND CARGO (PART 135)

AIRCRAFT CLASS	ACCIDENTS		FATAL ACCIDENTS		FATALITIES	
Single-engine piston	1	7.7%	0			
Single-engine turbine	10	76.9%	2	100.0%	5	100.0%
Multiengine turbine	2	15.4%	0			

#### CONDITIONS

Day VMC	10	76.9%	1	50.0%	1	20.0%
Night VMC*	1	7.7%	0			
Night IMC*	2	15.4%	1	50.0%	4	80.0%

\* INCLUDES DUSK

#### PILOT QUALIFICATIONS

ATP	2	15.4%	1	50.0%	4	80.0%
Commercial	10	76.9%	1	50.0%	1	20.0%
Other or unknown	1	7.7%	0			
Second pilot on board	1	7.7%	0			
CFI on board*	3	23.1%	1	50.0%	4	80.0%
IFR pilot on board*	11	84.6%	1	50.0%	4	80.0%

\* INCLUDES SINGLE-PILOT FLIGHTS

## Commercial Helicopter, 2016 (Continued)

### EXTERNAL LOAD (PART 133)

AIRCRAFT CLASS	ACCIDENTS		FATAL ACCIDENTS		FATALITIES	
Single-engine turbine	3	100.0%	1	100%	1	100%

CONDITIONS	ACCIDENTS		FATAL ACCIDENTS		FATALITIES	
Day VMC	3	100.0%	1	100%	1	100%

PILOT QUALIFICATIONS	ACCIDENTS		FATAL ACCIDENTS		FATALITIES	
ATP	1	33.3%	0			
Commercial	2	66.7%	1	100.0%	1	100.0%
CFI pilot on board*	2	66.7%	1	100.0%	1	100.0%
IFR pilot on board*	1	33.3%	0			

\* INCLUDES SINGLE-PILOT FLIGHTS