PRELIMINARY SUMMARY OF GENERAL AVIATION ACCIDENTS

2010-2011

INTRODUCTION

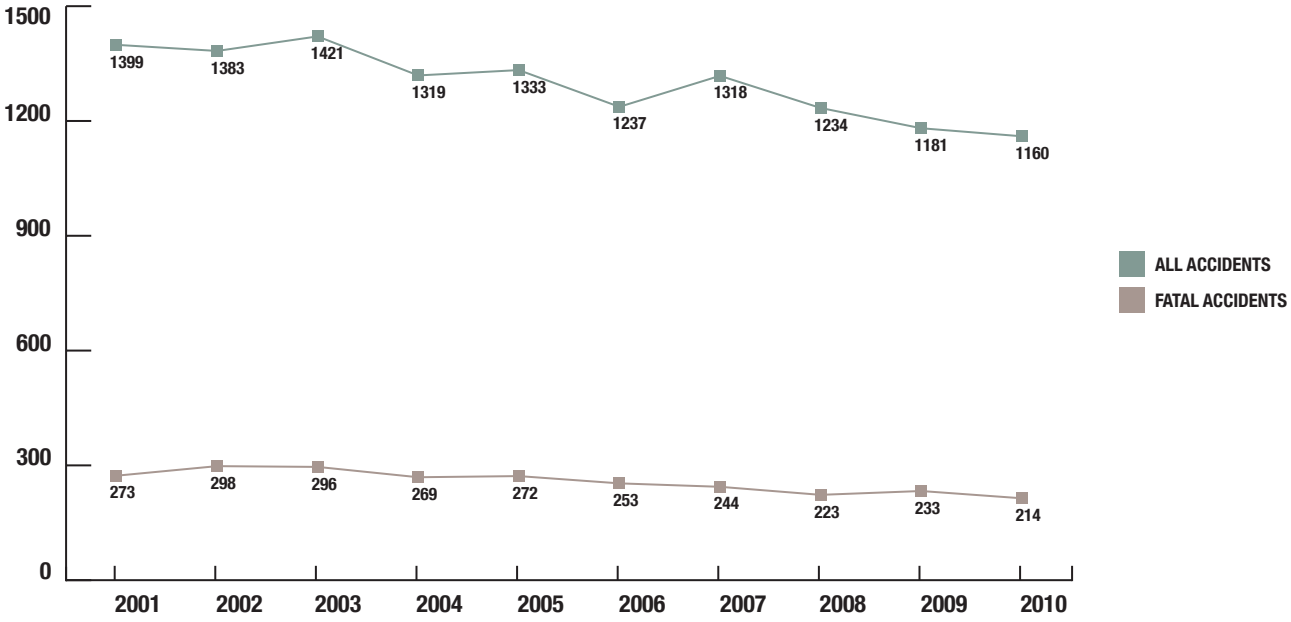
Six months after publication of the *2010 Joseph T. Nall Report*, which analyzed GA accidents in calendar year 2009, the staff of the Air Safety Institute re-examined accidents that had been provisionally classified on the basis of preliminary reports filed by the National Transportation Safety Board (NTSB). They discovered that fewer than half of 2009's fatal accidents had received final assignments of probable cause from the NTSB when the data were analyzed for the *2010 Nall*. As a result, the 2010 report contained significant undercounts of several types of accidents of particular public-safety interest (e.g., VFR into IMC). In the future, analysis of accident causes for coming editions of the *Nall Report* will not begin until probable cause has been assigned to at least 70% of that year's fatal accidents.

In the interim, ASI is providing a brief statistical summary of what is already known about general aviation accidents during 2010 and ten-year accident trends between 2001 and 2010. The number of accidents, fatal accidents, and fatalities in 2011 has also been tabulated by aircraft category.

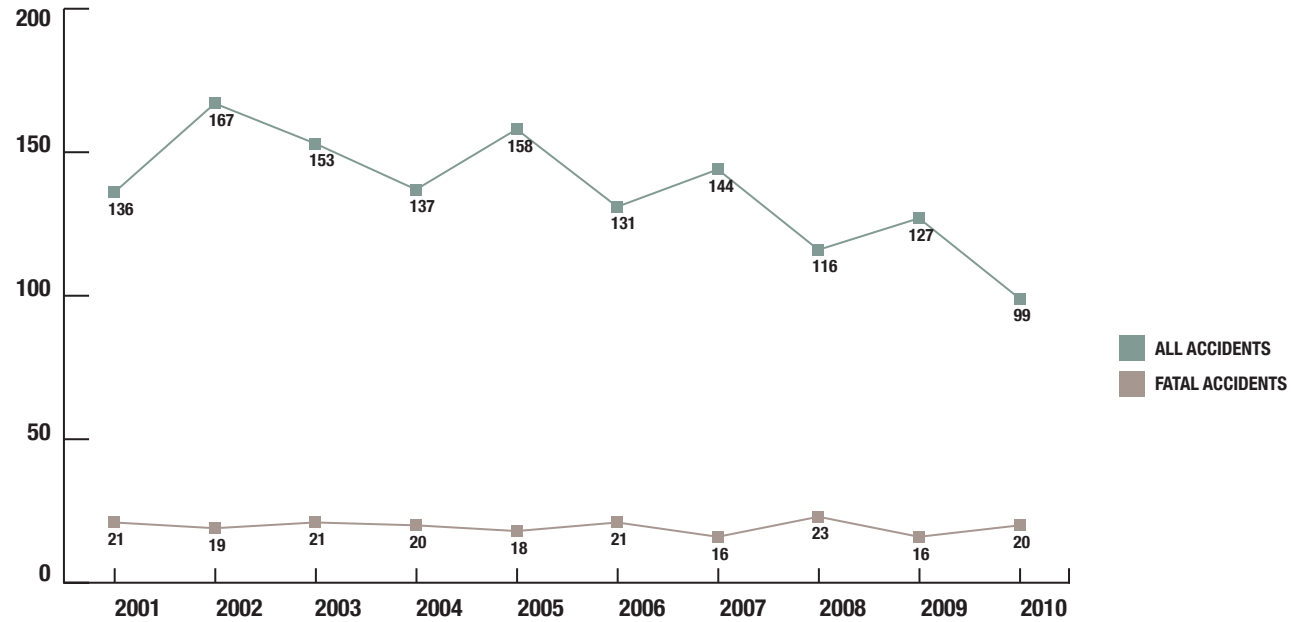
Both summaries distinguish between commercial and non-commercial operations. Commercial flights are those undertaken specifically to earn revenue for the aircraft operator, including charter and cargo flights made under Part 135 of the Federal Aviation Regulations, aerial application flights made under Part 137, and helicopter external-load operations conducted under Part 133.

All flights made under Part 91 are considered non-commercial. In addition to personal and business travel and flight instruction, they include some flights made by full-time professional pilots: positioning legs, corporate transport, and various kinds of public-use operations such as law enforcement, fire-fighting, and medical transport.

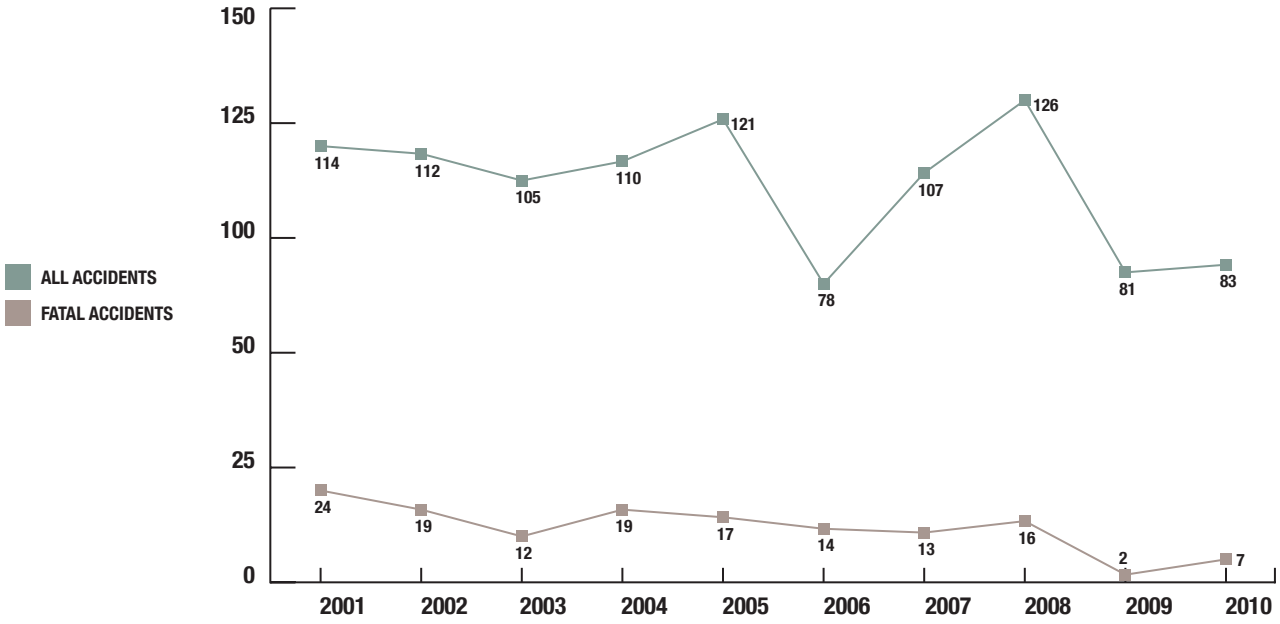
GENERAL AVIATION ACCIDENTS—2001-2010
NON-COMMERCIAL FIXED-WING



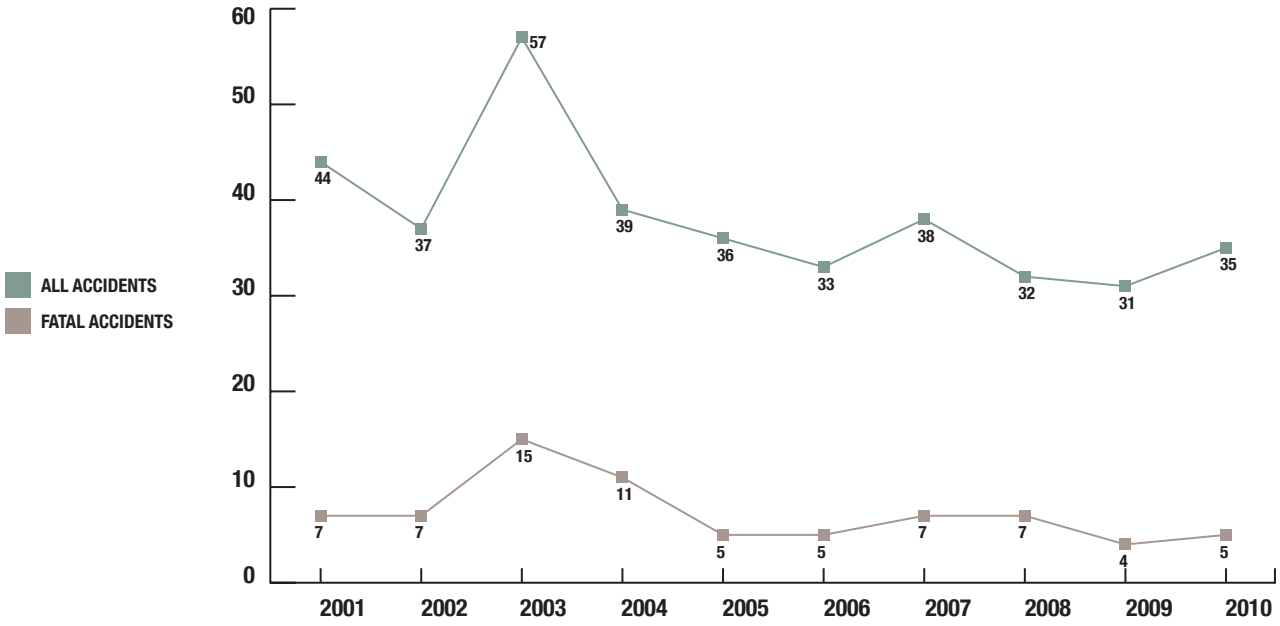
GENERAL AVIATION ACCIDENTS—2001-2010
NON-COMMERCIAL HELICOPTER



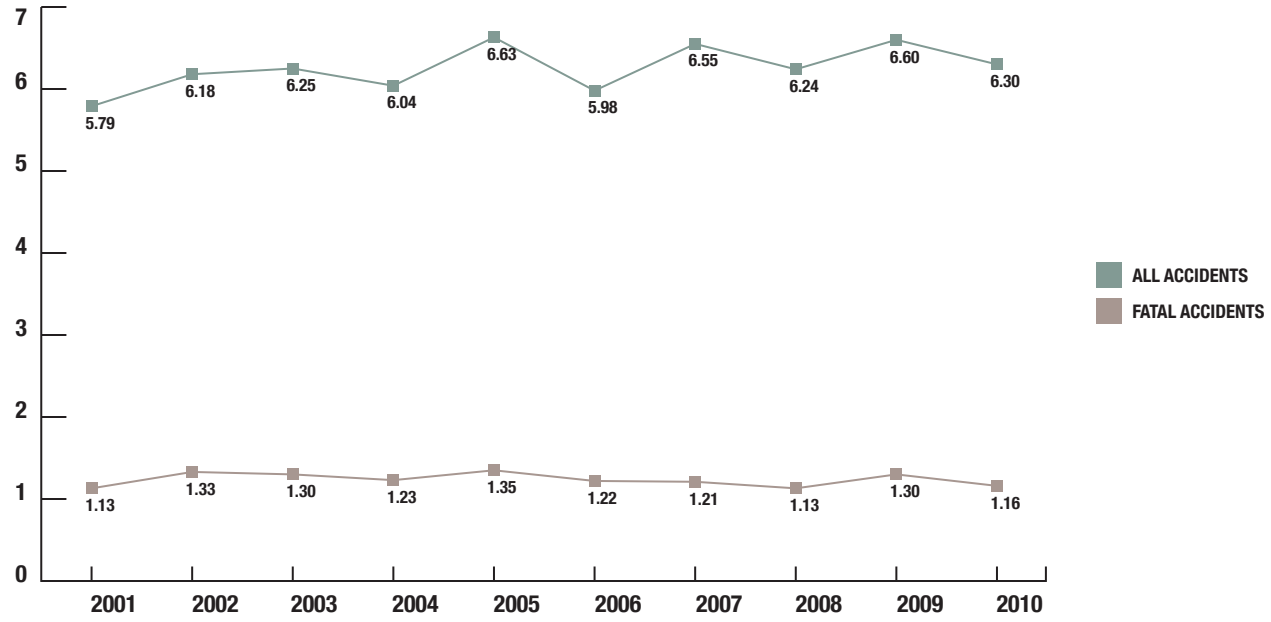
GENERAL AVIATION ACCIDENTS—2001-2010
COMMERCIAL FIXED-WING



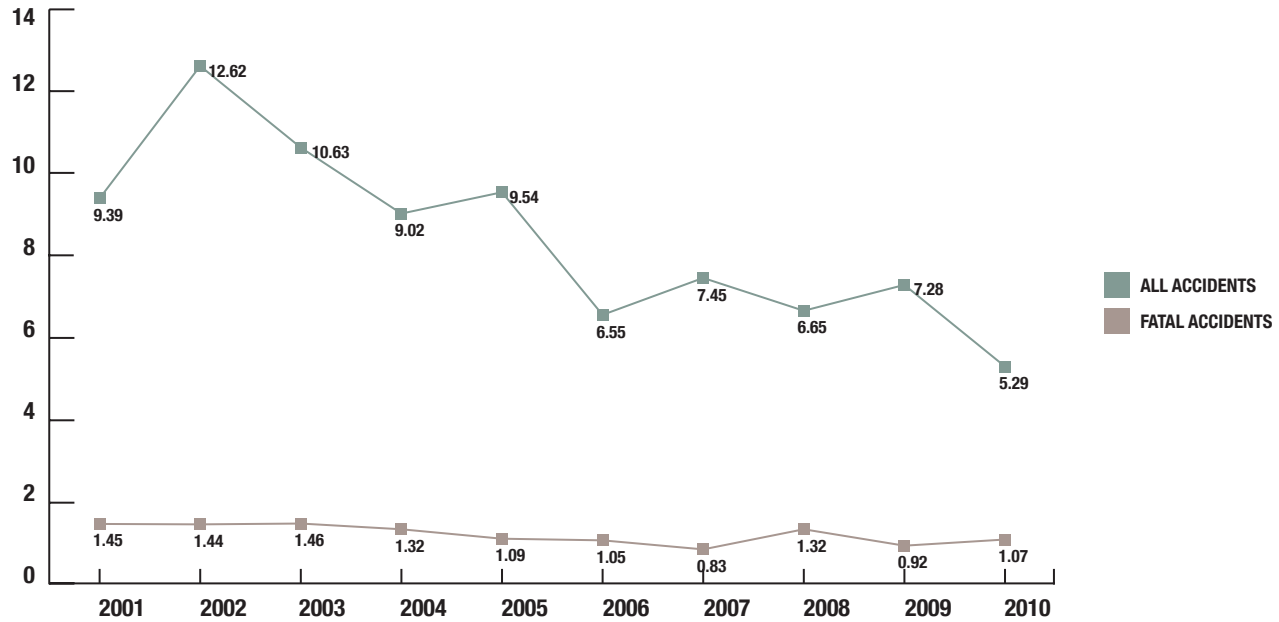
GENERAL AVIATION ACCIDENTS—2001-2010
COMMERCIAL HELICOPTER



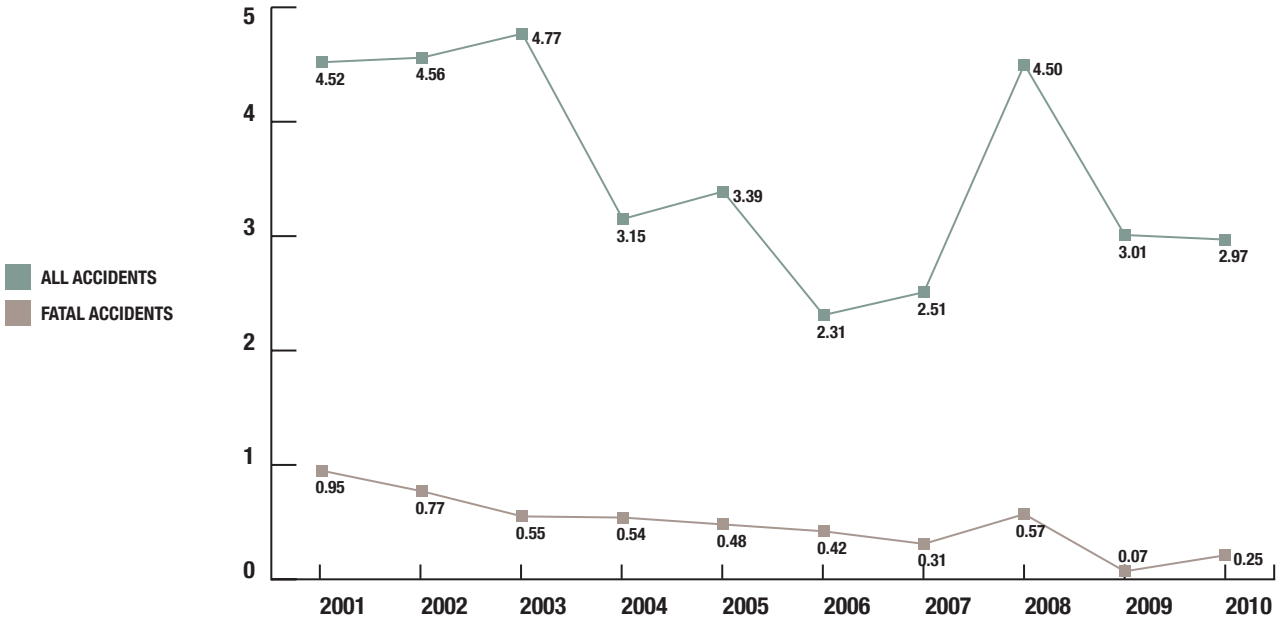
GA ACCIDENT RATES PER 100,000 FLIGHT HOURS—2001-2010
NON-COMMERCIAL FIXED-WING



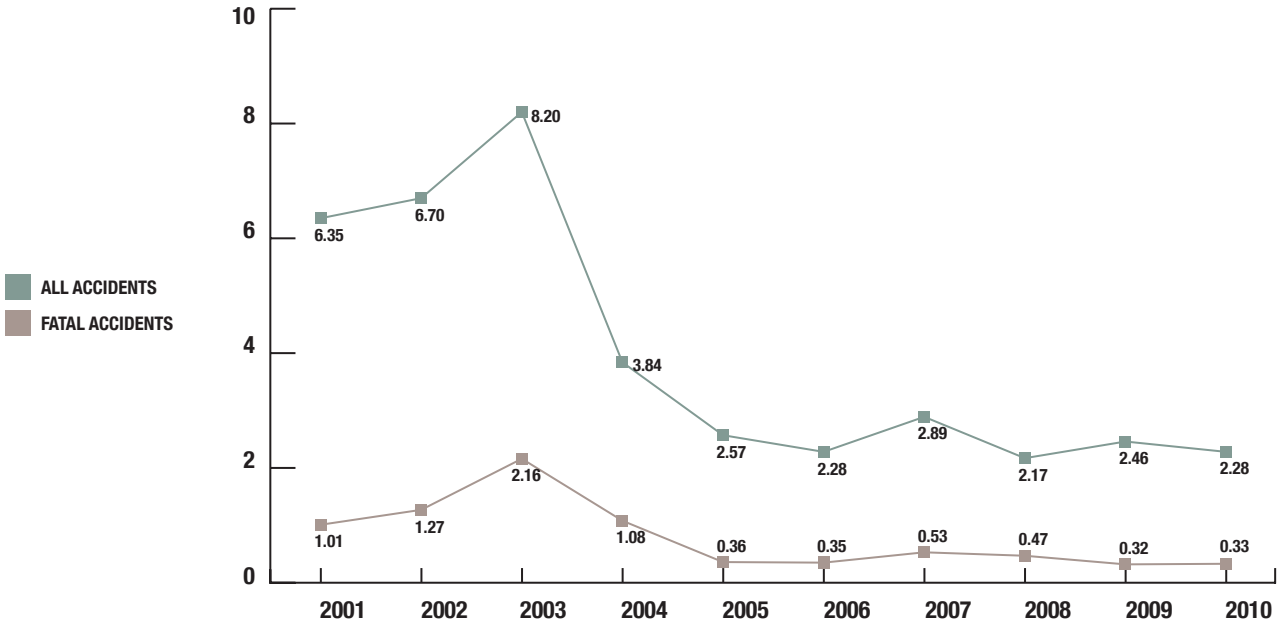
GA ACCIDENT RATES PER 100,000 FLIGHT HOURS—2001-2010
NON-COMMERCIAL HELICOPTER



GA ACCIDENT RATES PER 100,000 FLIGHT HOURS—2001-2010
COMMERCIAL FIXED-WING



GA ACCIDENT RATES PER 100,000 FLIGHT HOURS—2001-2010
COMMERCIAL HELICOPTER



SUMMARY: GENERAL AVIATION ACCIDENTS—2010

	NON-COMMERCIAL		COMMERCIAL	
	FIXED-WING	HELICOPTER	FIXED-WING	HELICOPTER
NUMBER OF ACCIDENTS	1160	99	83	35
NUMBER OF AIRCRAFT*	1170	99	84	35
FLIGHT HOURS (MILLIONS)	18.42	1.87	2.79	1.53
ACCIDENT RATE	6.30	5.29	2.97	2.28
NUMBER OF FATAL ACCIDENTS	214	20	7	5
FATAL ACCIDENT RATE	1.16	1.07	0.25	0.33
LETHALITY (%)	18.4	20.2	7.2	14.3
FATALITIES	360	38	15	7

**COUNTS EACH AIRCRAFT INVOLVED IN A COLLISION SEPARATELY*

SUMMARY: GENERAL AVIATION ACCIDENTS—2011

	NON-COMMERCIAL		COMMERCIAL	
	FIXED-WING	HELICOPTER	FIXED-WING	HELICOPTER
NUMBER OF ACCIDENTS	1150	97	111	33
NUMBER OF AIRCRAFT*	1163	97	114	33
NUMBER OF FATAL ACCIDENTS	219	10	16	6
LETHALITY (%)	19.0	10.3	14.4	18.2
FATALITIES	387	11	28	18

**COUNTS EACH AIRCRAFT INVOLVED IN A COLLISION SEPARATELY*
NOTE: *DATA ON 2011 FLIGHT ACTIVITY IS NOT YET AVAILABLE, SO RATES CANNOT BE ESTIMATED*

CIRCUMSTANCES OF 2010 GA ACCIDENTS
NON-COMMERCIAL HELICOPTER

AIRCRAFT CLASS

CONFIGURATION	ACCIDENTS	FATAL ACCIDENTS	FATALITIES
SINGLE-ENGINE PISTON	61 (62%)	9 (45%)	11 (29%)
SINGLE-ENGINE TURBINE	31 (31%)	8 (40%)	20 (53%)
MULTIENGINE TURBINE	7 (7%)	3 (15%)	7 (18%)

CIRCUMSTANCES OF 2010 GA ACCIDENTS
NON-COMMERCIAL HELICOPTER

TYPE OF OPERATION

PURPOSE OF FLIGHT	ACCIDENTS	FATAL ACCIDENTS	FATALITIES
PERSONAL	33 (33%)	5 (25%)	10 (26%)
INSTRUCTIONAL	25 (25%)	2 (10%)	2 (5%)
PUBLIC USE	8 (8%)	2 (10%)	5 (13%)
POSITIONING	14 (14%)	6 (30%)	12 (32%)
AERIAL OBSERVATION	4 (4%)	1 (5%)	3 (8%)
BUSINESS	5 (5%)	1 (5%)	2 (5%)
OTHER WORKING USE	7 (7%)	2 (10%)	2 (5%)
OTHER*	3 (3%)	1 (5%)	2 (5%)

**INCLUDES CORPORATE, FLIGHT TESTS, AND UNREPORTED*

CIRCUMSTANCES OF 2010 GA ACCIDENTS
NON-COMMERCIAL HELICOPTER

LIGHT AND WEATHER CONDITIONS

CONDITIONS	ACCIDENTS	FATAL ACCIDENTS	FATALITIES
DAY VMC	88 (89%)	17 (85%)	30 (79%)
NIGHT VMC*	6 (6%)	0	0
DAY IMC	2 (2%)	1 (5%)	2 (5%)
NIGHT IMC*	3 (3%)	2 (10%)	6 (16%)

**INCLUDES DUSK*

CIRCUMSTANCES OF 2010 GA ACCIDENTS
NON-COMMERCIAL HELICOPTER

PILOT QUALIFICATIONS

CERTIFICATE LEVEL	ACCIDENTS	FATAL ACCIDENTS	FATALITIES
ATP	17 (17%)	5 (25%)	9 (24%)
COMMERCIAL	60 (61%)	10 (50%)	23 (61%)
PRIVATE	15 (15%)	3 (15%)	4 (10%)
STUDENT	5 (5%)	1 (5%)	1 (3%)
NONE OR NOT REPORTED	2 (2%)	1 (5%)	1 (3%)
CFI ON BOARD*	43 (43%)	6 (30%)	11 (29%)

**INCLUDES SINGLE-PILOT ACCIDENTS*

CIRCUMSTANCES OF 2010 GA ACCIDENTS
COMMERCIAL HELICOPTER

	ACCIDENTS	FATAL ACCIDENTS	FATALITIES
AIRCRAFT CLASS			
SINGLE-ENGINE PISTON	8 (23%)	1 (20%)	1 (14%)
SINGLE-ENGINE TURBINE	26 (74%)	4 (80%)	6 (86%)
MULTIENGINE TURBINE	1 (3%)	0	0
TYPE OF OPERATION			
AERIAL APPLICATION (PART 137)	24 (69%)	2 (40%)	2 (28%)
CHARTER OR CARGO (PART 135)	7 (20%)	1 (20%)	3 (43%)
EXTERNAL LOAD (PART 133)	4 (11%)	2 (40%)	2 (28%)
CONDITIONS			
DAY VMC	31 (89%)	4 (80%)	4 (57%)
NIGHT VMC (INCLUDES DUSK)	4 (11%)	1 (20%)	3 (43%)
PILOT QUALIFICATIONS			
ATP	5 (14%)	1 (20%)	1 (14%)
COMMERCIAL	30 (86%)	4 (80%)	6 (86%)

CIRCUMSTANCES OF 2010 GA ACCIDENTS
NON-COMMERCIAL FIXED-WING

AIRCRAFT CLASS

CONFIGURATION	ALL ACCIDENTS	FATAL ACCIDENTS	LETHALITY
SINGLE-ENGINE FIXED-GEAR	827 (71%)	117 (54%)	14%
SEF, CONVENTIONAL GEAR	353	37	10%
SINGLE-ENGINE RETRACTABLE	242 (21%)	68 (31%)	28%
MULTIENGINE	101 (9%)	31 (14%)	31%
SINGLE-ENGINE TURBINE	22	5	23%
MULTIENGINE TURBINE	14	2	14%

CIRCUMSTANCES OF 2010 GA ACCIDENTS
NON-COMMERCIAL FIXED-WING

TYPE OF OPERATION

PURPOSE OF FLIGHT	ACCIDENTS	FATAL ACCIDENTS	FATALITIES
PERSONAL	910 (78%)	170 (79%)	286 (79%)
INSTRUCTIONAL	138 (12%)	14 (6%)	24 (7%)
PUBLIC USE	14 (1%)	3 (1%)	6 (2%)
POSITIONING	15 (1%)	3 (1%)	3 (1%)
AERIAL OBSERVATION	5 (<1%)	2 (1%)	4 (1%)
BUSINESS	37 (3%)	10 (5%)	16 (4%)
OTHER WORKING USE	32 (3%)	9 (4%)	15 (4%)
OTHER*	19 (2%)	5 (2%)	6 (2%)

**INCLUDES AIR SHOWS, CORPORATE, FLIGHT TESTS, AND UNREPORTED*

CIRCUMSTANCES OF 2010 GA ACCIDENTS
NON-COMMERCIAL FIXED-WING

LIGHT AND WEATHER CONDITIONS

CONDITIONS	ALL ACCIDENTS	FATAL ACCIDENTS	LETHALITY
DAY VMC	1000 (86%)	155 (73%)	16%
NIGHT VMC*	99 (9%)	21 (10%)	21%
DAY IMC	46 (4%)	27 (13%)	59%
NIGHT IMC*	14 (1%)	10 (5%)	71%

**INCLUDES DUSK*

CIRCUMSTANCES OF 2010 GA ACCIDENTS
NON-COMMERCIAL FIXED-WING

PILOT QUALIFICATIONS

CERTIFICATE LEVEL	ALL ACCIDENTS	FATAL ACCIDENTS	LETHALITY
ATP	142 (12%)	24 (11%)	17%
COMMERCIAL	319 (27%)	66 (31%)	21%
PRIVATE	596 (51%)	114 (53%)	19%
SPORT	19 (2%)	4 (2%)	21%
STUDENT	72 (6%)	5 (2%)	6%
NONE	15 (1%)	1 (<1%)	7%
UNKNOWN OR RECREATIONAL	7 (1%)	2 (1%)	28%
TWO PILOTS ON BOARD	141 (12%)	34 (16%)	24%
CFI ON BOARD*	280 (24%)	51 (24%)	24%
INSTRUMENT-RATED PILOT ON BOARD	627 (54%)	127 (59%)	20%

**INCLUDES SINGLE-PILOT ACCIDENTS*

CIRCUMSTANCES OF 2010 GA ACCIDENTS

COMMERCIAL FIXED-WING

AERIAL APPLICATION (PART 137)

	ACCIDENTS	FATAL ACCIDENTS	FATALITIES
	56	3	3
AIRCRAFT CLASS			
SINGLE-ENGINE PISTON	30 (54%)	1 (33%)	1 (33%)
SINGLE-ENGINE TURBINE	26 (46%)	2 (67%)	2 (67%)
CONDITIONS			
DAY VMC	55 (98%)	3 (100%)	3 (100%)
NIGHT VMC*	1 (2%)	0	0
PILOT QUALIFICATIONS			
ATP	5 (9%)	0	0
COMMERCIAL	51 (91%)	3 (100%)	3 (100%)

**INCLUDES DUSK*

CIRCUMSTANCES OF 2010 GA ACCIDENTS

COMMERCIAL FIXED-WING

CHARTER AND CARGO (PART 135)

	ACCIDENTS	FATAL ACCIDENTS	FATALITIES
	28	4	12
AIRCRAFT CLASS			
SINGLE-ENGINE PISTON	13 (46%)	2 (50%)	5 (42%)
MULTIENGINE PISTON	9 (32%)	1 (25%)	5 (42%)
SINGLE-ENGINE TURBINE	3 (11%)	0	0
MULTIENGINE TURBINE	3 (11%)	1 (25%)	2 (17%)
CONDITIONS			
DAY VMC	21 (98%)	2 (50%)	6 (50%)
NIGHT VMC*	3 (2%)	1 (25%)	5 (42%)
DAY IMC	2 (2%)	1 (25%)	1 (8%)
NIGHT IMC*	2 (2%)	0	0
PILOT QUALIFICATIONS			
ATP	14 (50%)	2 (50%)	7 (58%)
COMMERCIAL	14 (50%)	2 (50%)	5 (42%)
TWO-PILOT CREWS	1 (4%)	0	0
FLIGHT INSTRUCTORS	12 (43%)	2 (50%)	7 (58%)

**INCLUDES DUSK*

SUMMARY

The 2010 GA accident record looked very much like that of 2009, continuing the recent pattern of relatively slight differences from year to year. Flight activity rebounded at least modestly in all four sectors, up 3% for non-commercial fixed-wing flying, 7% for non-commercial helicopters, 4% for commercial fixed-wing, and 21% for commercial helicopters.

With fewer non-commercial accidents in both airplanes and helicopters, overall and fatal fixed-wing accident rates decreased slightly but remained well within their recent range; a 10-year low in the non-commercial helicopter accident rate was not matched by a new low in their fatal accident rate, which edged back up a bit. Small increases in the number of accidents on commercial flights matched the increases in activity in both the fixed-wing and rotary-wing sectors, with the result that accident rates remained almost unchanged.

In 2011, the number of non-commercial fixed-wing and helicopter accidents decreased again, but the number of accidents on commercial fixed-wing flights increased sharply. The activity data needed to determine whether this represents an increased accident rate will not become available before the fourth quarter of 2012.

The circumstances of 2010's accidents were almost identical to those the year before. More than three-quarters of all non-commercial accidents took place on personal flights, and about half were on flights commanded by private pilots. Seven-eighths took place in daytime VMC. Two-thirds of all commercial fixed-wing accidents involved crop-dusters, but there were twelve fatalities (in four separate accidents) on Part 135 flights compared to none the year before.

Personal flights again accounted for about one-third of non-commercial helicopter accidents, while a quarter occurred on instructional flights . More than three-quarters involved commercial or airline transport pilots, and more than seven-eighths were in day VMC. Almost 70% of commercial helicopter accidents occurred during aerial application, double the proportion seen in 2009, and three-quarters of the accident aircraft were single-engine turbines.

A detailed analysis will appear in the full *Nall Report* later this year.

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