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NATIONAL TRANSPORTATION SAFETY BOARD

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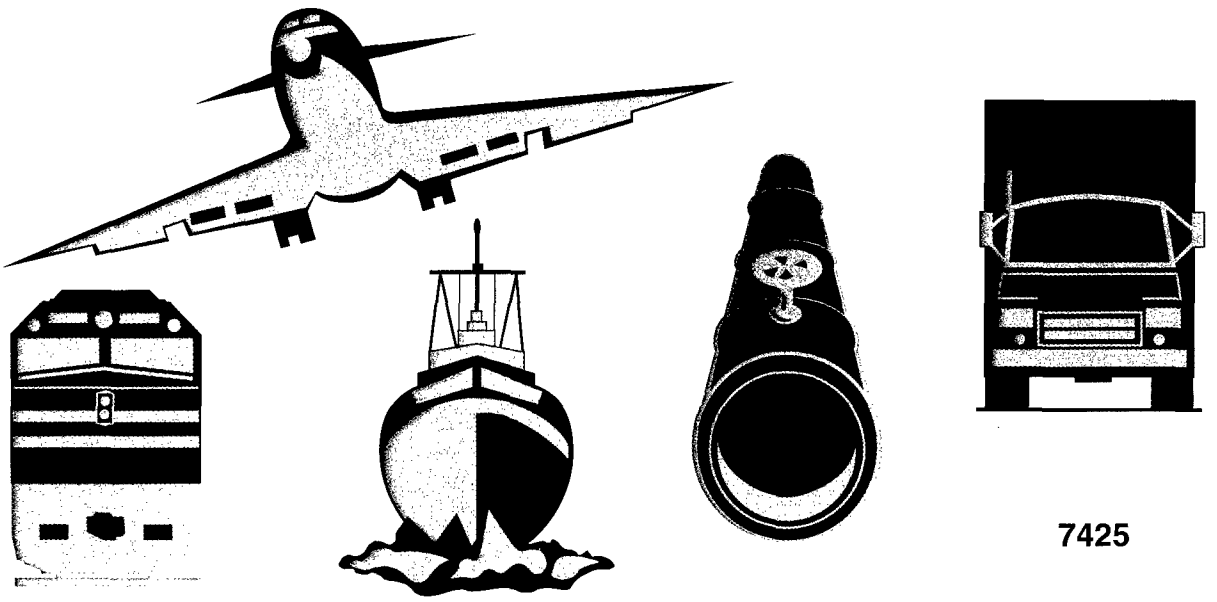
ANNUAL REVIEW OF AIRCRAFT ACCIDENT DATA

U.S. AIR CARRIER OPERATIONS CALENDAR YEAR 1997



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Annual Review of Aircraft Accident Data

U.S. Carrier Operations
Calendar Year 1997

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Abstract: This publication presents the record of aviation accidents involving revenue operations of U.S. air carriers including commuter air carriers and on-demand air taxis for calendar year 1997.

The report is divided into three major sections according to the Federal regulations under which the flight was conducted: 14 CFR Part 121, Scheduled 14 CFR Part 135, or Nonscheduled 14 CFR Part 135. In each section of the report, tables are presented to describe the losses and characteristics of 1997 accidents to enable comparison with prior years.

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INTRODUCTION

This report presents a statistical compilation and review of air carrier accidents that occurred in 1997 and that involved U.S.-registered aircraft conducting operations under Title 14 Code of Federal Regulations (CFR) Parts 121 and 135. Briefly stated, Part 121 applies to air carriers, such as major airlines and cargo haulers, that fly large transport aircraft. Part 135 applies to commercial air carriers commonly referred to as commuter airlines and on-demand air taxi operators. Please note that in March 1997 the Federal Aviation Administration (FAA) issued a reclassification for major airlines (as defined in 14 CFR Part 121). For this reason scheduled Part 135 carrier planes with 10 or more seats are now classified as a Part 121 operation. This change in the regulations during 1997 affected both the National Transportation Safety Board's (NTSB) classification of accidents based on category of operation and the Federal Aviation Administration's (FAA) estimate of flight activity by category. This reclassification of Part 121 and Part 135 operations, in turn, affects comparisons between 1997 and past years.

The report is divided into three major sections: 14 CFR Part 121 Operations; Scheduled 14 CFR Part 135 Operations; and Nonscheduled 14 CFR Part 135 Operations. Each section begins with an overview of accidents and their consequences (injuries and aircraft damage) for 1997 and for the 10 preceding years. Several tables then present accident parameters for 1997 only. Each section concludes with tabulations that present comparative statistics for 1997 and for the 10-year period 1987-1996.

Exposure data (flight hours, miles, and departures) used to compute accident rates for operations under Part 121 and for scheduled operations under Part 135 were obtained from the FAA, which compiled data reported by carriers to the Research and Special Programs Administration (RSPA) of the U.S. Department of Transportation (DOT). Flight hours for nonscheduled operations under Part 135 were obtained by the FAA in its surveys of general aviation activity. National Transportation Safety Board Report Form 6120.4 (appendix F) shows the data elements upon which this report is based.

In many of the tables presented in this report (such as table 4), the number of accidents in a given category is small. In these tables, even a small change in the number of accidents would result in a substantial change in the accident rate. Therefore, the reader should exercise caution in the use of these rates and in comparing numbers and percentages of accidents between two time periods when the number of accidents is small.

Beginning with the 1998 Annual Reviews, the Safety Board will present annual statistics for commercial and general aviation in a revised format. The new statistical reviews will present more information in the form of graphs rather than tables and will include expanded text explanations of the graphs. For those interested in the underlying data used to develop the annual reviews, associated tabular data will be available through the NTSB Web site: www.ntsb.gov.

14 CFR Part 121 Operations

There were 49 accidents in Part 121 operations in 1997. The overall accident rate for 1997 was 0.309 accidents per 100,000 hours flown, a 15 percent increase from the 1996 rate of 0.269. The 1997 rate was 37 percent higher than the overall rate of 0.225 for the period from 1987 through 1996. However, due to a regulatory change in the definition of Part 121 that encompassed many smaller aircraft, there were several accidents occurring after March that may have qualified as Part 135 operators had the rule change not been effected. (The exact number of accidents is difficult to identify because aircraft size is not the sole determinate for certificate of operation.) If consideration for this rule change were factored into rate comparisons with past years, as many as six accidents may not have been Part 121 operations. With consideration for that adjustment, the 1997 rate would have shown very little change from the previous 10-year average.

There were four fatal accidents involving Part 121 operators in 1997 with a fatal accident rate of 0.025 per 100,000 hours flown, a 31 percent decrease from the 1996 rate of 0.036. This change in rate is not particularly meaningful given the small number of fatal accidents that occur in a given year (the previous 10-year average of fatal accidents per year was 4.6). But it is important to note that those four fatal accidents in 1997 involved only 8 fatalities out of 5,574 involved persons and it favorably compares to a previous 10-year average of 172 fatalities per year. Three of the four fatal accidents in 1997 resulted in only one fatality each, the fourth accident involved a McDonnell Douglas DC-8 in Miami, Florida, with five fatalities.

Table 1 - SUMMARY OF LOSSES
14 CFR 121 OPERATIONS
1987 - 1997

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Accidents											
Fatal	5	3	11	6	4	4	1	4	3	5	4
Serious Injury	12	16	5	11	11	12	13	12	16	18	25
Minor Injury	3	4	5	1	2	0	3	3	1	6	7
No Injury	14	7	7	6	9	2	6	4	16	8	13
Total	34	30	28	24	26	18	23	23	36	37	49
Fatalities											
Passenger	213	255	259	8	40	26	0	228	152	321	2
Crew	17	19	17	4	9	5	0	9	10	29	4
Other Persons	2	11	2	27	13	2	1	2	6	30	2
Total	232	285	278	39	62	33	1	239	168	380	8
Aircraft Damage											
Destroyed	5	3	7	3	5	3	1	3	3	5	2
Substantial	16	13	11	8	10	3	8	8	18	14	20
Minor	4	0	0	4	3	1	3	3	2	7	6
None	12	14	10	10	9	11	11	9	14	13	21
Total	37[a]	30	28	25[a]	27[a]	18	23	23	37[a]	39[a]	49

[a] The number of aircraft damaged is higher than the number of accidents because the accidents included collisions between two aircraft.

Table 2 - ACCIDENT RATES
14 CFR 121 OPERATIONS
1987 - 1997

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Accidents Rates [d]											
Miles Flown [b]	.0076	.0064	.0061	.0049	.0054	.0036	.0044	.0040	.0064	.0063	.0073
Hours Flown [c]	.310	.260	.248	.198	.221	.146	.181	.168	.267	.269	.309
Departures Flown [c]	.434	.376	.366	.297	.333	.228	.285	.267	.426	.450	.475
Fatal Accident Rates [d]											
Miles Flown [b]	.0009	.0004	.0024	.0012	.0008	.0008	.0002	.0007	.0005	.0009	.0006
Hours Flown [c]	.038	.018	.098	.049	.034	.032	.008	.030	.022	.036	.025
Departures Flown [c]	.053	.026	.144	.074	.051	.051	.012	.049	.035	.061	.039

[b] Per Million Miles Flown
[c] Per Hundred Thousand Hours and Departures Flown
[d] A nonfatal accident, occurring 4/7/94, that involved criminal activity is excluded from accident rates. The 12/21/88 sabotage involving a Pan Am B747-100 and the 12/7/87 suicide/sabotage involving a PSA BAe-146e are also excluded from accident rate computations.

Table 3 - LIST OF ACCIDENTS
14 CFR 121 OPERATIONS
1997

Date	Location	Type of Operation	Air Carrier	Aircraft Type	Aircraft Damage	Degree of Injury	First Occurrence
01/07	Atlantic Ocean	Sch Pax/Cargo	AMERICAN	Airbus A300B4-605R	Minor	Serious	In flight encounter with weather
01/07	Houston, TX	Sch Passenger	CONTINENTAL	Aerospatiale ATR-42	Substantial	Minor	On ground collision with terrain
01/18	Aruba	Nonsch Passenger	RYAN INT'L	Boeing 737-400	Minor	Serious	Miscellaneous/other (passenger injured)
01/28	Cape Girardeau, MO	Sch Passenger	TRANS WORLD	McD-Douglas DC-9-51	None	Serious	In flight encounter with weather
02/06	St. John, Antigua	Sch Passenger	AMERICAN	Airbus A300-600R	Substantial	None	Hard landing
02/25	San Francisco, CA	Sch Passenger	UNITED	Boeing 767-300	None	Serious	In flight encounter with weather
03/05	Cleveland, OH	Sch Passenger	AMERICAN	McD-Douglas DC-9-82	Substantial	Minor	Loss of control - on ground
03/14	Detroit, MI	Sch Passenger	RENO AIR	McD-Douglas DC-9-87	Substantial	None	Loss of power(partial) - non-mechanical
03/26	Wenatchee, WA	Sch Passenger	HORIZON	DeHavilland DHC-8	Substantial	None	On ground collision with object
03/27	Jamaica, NY	Sch Passenger	DELTA	Lockheed L-1011	None	Fatal (1)	Miscellaneous/other (ground crew member fatally injured)
04/01	Atlantic City, NJ	Sch Passenger	EAGLE JET	Fokker F-27	Substantial	Minor	On ground collision with object
04/06	Portland, OR	Sch Pax/Cargo	MESA	Beech 1900D	Substantial	None	Miscellaneous/other (cargo door opened on takeoff)
04/07	Newark, NJ	Sch Passenger	UNITED	Airbus A320-232	None	Serious	In flight encounter with weather

Table 3 - LIST OF ACCIDENTS (Continued)
14 CFR 121 OPERATIONS
1997

Date	Location	Type of Operation	Air Carrier	Aircraft Type	Aircraft Damage	Degree of Injury	First Occurrence
04/09	Memphis, TN	Nonsch Cargo	FEDERAL EX.	DcD-Douglas DC10-30F	Substantial	None	Miscellaneous/other (damage to elevators)
04/18	Las Vegas, NV	Sch Passenger	AMERICA WEST	Boeing 737-3S3	None	Serious	Near collision between aircraft
04/28	Atlanta, GA	Sch Pax/Cargo	CONTINENTAL	Boeing 737-200	None	Serious	In flight encounter with weather
05/04	Denver, CO	Sch Passenger	FRONTIER	Boeing 737-201	None	Serious	Miscellaneous/other (injured flight attendant)
05/09	Hamilton, Canada	Sch Passenger	CHAUTAUQUA	British Aero. BA-31	Substantial	None	Miscellaneous/other (air inlet plugs not removed)
05/12	West Palm Beach, FL	Sch Passenger	AMERICAN	Airbus A300B4-605R	Minor	Serious	Loss of control - in flight
05/13	Flushing, NY	Sch Passenger	DELTA	McD-Douglas MD-88	Minor	Serious	Miscellaneous/other (passenger injured)
05/14	London, England	Sch Passenger	UNITED	Boeing B777	Substantial	None	Collision between aircraft (other than midair)
05/21	San Diego, CA	Sch Passenger	SKYWEST	Embraer EMB-120	Substantial	None	Loss of power
05/26	Atlantic Ocean	Sch Passenger	DELTA	Lockheed L-1011	None	Serious	Miscellaneous/other (flight attendant injured)
06/03	Asuncion, Paraguay	Sch Passenger	UNITED	Boeing 767-300	None	Serious	Miscellaneous/other (flight attendant injured)
06/08	Valparaiso, IN	Sch Passenger	UNITED	Boeing 737-300	None	Serious	Near collision between aircraft
06/11	Albuquerque, NM	Sch Passenger	UNITED	Boeing 737-291A	None	Serious	In flight encounter with weather
06/26	Covington, KY	Sch Pax/Cargo	DELTA	Lockheed L-1011	None	Serious	Airframe/component/system failure/malfunction

Table 3 - LIST OF ACCIDENTS (Continued)
14 CFR 121 OPERATIONS
1997

Date	Location	Type of Operation	Air Carrier	Aircraft Type	Aircraft Damage	Degree of Injury	First Occurrence
07/06	Albuquerque, NM	Sch Passenger	DELTA	Boeing 727-247	Substantial	Minor	Main gear collapsed
07/25	Atlantic Ocean	Sch Passenger	LAKER AIRWAYS	McD-Douglas DC-10-30	None	Serious	In flight encounter with weather
07/31	Newark, NJ	Nonsch Cargo	FEDERAL EX.	McD-Douglas MD-11	Destroyed	Minor	Hard landing
08/02	Lima, Peru	Sch Passenger	CONTINENTAL	Boeing 757-200	None	Fatal (1)	Undetermined
08/07	Miami, FL	NonschCargo	FINE	McD-Douglas DC-8-61	Destroyed	Fatal (5)	Loss of control - in flight
08/07	Honolulu, HI	Sch Passenger	DELTA	Lockheed L-1011	Minor	Serious	Airframe/component/system failure/malfunction
08/22	Anchorage, AK	Sch Passenger	MERLIN EX.	Fairchild SA-227AC	Substantial	None	On ground collision with
09/01	Seattle, WA	Sch Passenger	ALASKA	McD-Douglas DC-9-82	Substantial	Minor	Nose gear collapsed
09/06	Peru, IL	Sch Passenger	UNITED FEEDER	BAE ATP	None	Serious	Altitude deviation, uncontrolled
09/14	Grand Forks, ND	Sch Pax/Cargo	UNITED	Boeing 747-422	None	Serious	In flight encounter with weather
09/26	Long Island, NY	Sch Passenger	AMERICAN	Airbus A-300	None	Serious	In flight encounter with weather
10/01	Denver, CO	Sch Cargo	RYAN INT'L	Boeing 727-51C	Substantial	Serious	On ground collision with object
10/01	Cross City, FL	Sch Passenger	AERICAN	McD-Douglas DC-9-82	None	Serious	In flight encounter with weather
10/15	Meadview, AZ	Sch Passenger	AIR VEGAS	Beech 99-C99	Substantial	None	In flight collision with object
10/15	Pittsburgh, PA	Sch Passenger	MESA	Beech 1900D	Substantial	Minor	On ground collision with object

Table 3 - LIST OF ACCIDENTS (Continued)
14 CFR 121 OPERATIONS
1997

Date	Location	Type of Operation	Air Carrier	Aircraft Type	Aircraft Damage	Degree of Injury	First Occurrence
10/31	Jacksonville, FL	Sch Passenger	AIR EXPRESS	DeHavilland DH-8-201	None	Serious	In flight encounter with weather
11/07	Charlotte, NC	Sch Passenger	US AIRWAYS	Fokker F100	Substantial	None	Airframe/component/system failure/malfunction
11/25	Billings, MT	NonschCargo	CORPORATE AIR	Short SD3-60	Substantial	None	Hard landing
12/07	Memphis, TN	Sch Passenger	NORTHWEST	McD-Douglas DC-9	None	Serious	Miscellaneous/other (flight attendant injured)
12/11	Ventura, CA	Sch Passenger	WINGS WEST	Saab 340B	None	Serious	In flight encounter with weather
12/23	Windsor Locks, CT	Sch Passenger	MESA	Beech 1900D	Substantial	None	On ground collision with terrain
12/28	Pacific Ocean	Sch Passenger	UNITED	Boeing 747-122	Minor	Fatal (1)	In flight encounter with weather

Table 4 - ACCIDENTS AND RATES BY TYPE OF OPERATION
14 CFR 121 OPERATIONS
1997

	Type of Operation				
	Scheduled				
	Passenger/ Cargo	All Cargo	All	All Non-Scheduled	All
Accidents	43	1	44	5	49
Fatal Accidents	3	0	3	1	4
Aircraft Miles Flown (Thousands)	6,011,191	323,369	6,334,559	357,134	6,691,693
Aircraft Hours Flown	14,239,830	821,832	15,061,662	776,447	15,838,109
Departures Flown	9,395,336	525,233	9,920,569	393,257	10,313,826
Accident Rates					
Per Million Miles Flown	0.0060	0.0034	0.0059	0.0142	0.0065
Per Hundred Thousand Hours Flown	0.254	0.130	0.247	0.775	0.276
Per Hundred Thousand Departures Flown	0.422	0.201	0.408	1.589	0.462
Fatal Accident Rates					
Per Million Miles Flown	0.0006	0.	0.0006	0.0047	0.0009
Per Hundred Thousand Hours Flown	0.025	0.	0.023	0.258	0.036
Per Hundred Thousand Departures Flown	0.041	0.	0.038	0.530	0.061

Table 5 - PERSONS BY ROLE AND DEGREE OF INJURY
14 CFR 121 OPERATIONS
1997

	Degree of Injury				
Role of Person	Fatal	Serious	Minor	None	Total
Pilot	1	1	1	46	49
Copilot	1	0	2	46	49
Flight engineer	1	0	0	9	10
Cabin attendants	0	21	25	160	206
Other crew	1	0	3	15	19
Passenger	2	21	259	4655	4937
Total aboard	6	43	290	4931	5270
Other aircraft*	0	0	0	297	297
Other ground	2	0	2	3	7
Grand total	8	43	292	5231	5574
Percent	0.1	0.8	5.2	93.8	

Table 6 - AIRCRAFT BY DAMAGE AND DEGREE OF INJURY
14 CFR 121 OPERATIONS
1997

Aircraft damage	Degree of injury				Aircraft	
	None	Minor	Serious	Fatal	No.	Percent
None	0	0	19	2	21	42.9
Minor	0	0	5	1	6	12.2
Substantial	13	6	1	0	20	40.8
Destroyed	0	1	0	1	2	4.1
Aircraft						
Number -	13	7	25	4	49	
Percent -	26.5	14.3	51.0	8.2		

Table 7 - AIRCRAFT BY FIRST OCCURRENCE AND DEGREE OF INJURY AND BY DAMAGE
14 CFR 121 OPERATIONS
1997

Type of first occurrence *	Degree of injury				Aircraft damage				Aircraft	
	None	Minor	Serious	Fatal	None	Minor	Substantial	Destroy	No.	Percent
Altitude deviation, uncontrolled	0	0	1	0	1	0	0	0	1	2.0
Airframe/component/system failure/malfunction	1	0	2	0	1	1	1	0	3	6.1
Main gear collapsed	0	1	0	0	0	0	1	0	1	2.0
Nose gear collapsed	0	1	0	0	0	0	1	0	1	2.0
Hard landing	2	1	0	0	0	0	2	1	3	6.1
In flight collision with object	1	0	0	0	0	0	1	0	1	2.0
In flight encounter with weather	0	0	12	1	11	2	0	0	13	26.5
Loss of control - in flight	0	0	1	1	0	1	0	1	2	4.1
Loss of control - on ground	0	1	0	0	0	0	1	0	1	2.0
Collision between aircraft (other than midair)	1	0	0	0	0	0	1	0	1	2.0
Near collision between aircraft	0	0	2	0	2	0	0	0	2	4.1
On ground collision with object	2	2	1	0	0	0	5	0	5	10.2
On ground encounter with terrain	1	1	0	0	0	0	2	0	2	4.1
Loss of engine power	1	0	0	0	0	0	1	0	1	2.0
Loss of power (partial) - nonmechanical	1	0	0	0	0	0	1	0	1	2.0
Undetermined	0	0	0	1	1	0	0	0	1	2.0
Miscellaneous/other	3	0	5	1	4	2	3	0	9	18.4
Not reported	0	0	1	0	1	0	0	0	1	2.0
Aircraft										
Number -	13	7	25	4	21	6	20	2	49	
Percent -	26.5	14.3	51.0	8.2	42.9	12.2	40.8	4.1		

* First occurrence is the first (or in some cases the only) occurrence in the accident sequence of events. "Occurrences" are relatively major events that may be further described by "findings." See Appendix B for further explanation and an example.

Table 8 - AIRCRAFT BY FIRST OCCURRENCE AND BROAD PHASE OF OPERATION
14 CFR 121 OPERATIONS
1997

Type of first occurrence	Phase of operation									Aircraft	
	Stndg	Taxi	Tkoff	Climb	Cruis	Dscnt	Landg	Manvr	Nrept	No.	Percent
Altitude deviation, uncontrolled	0	0	0	0	1	0	0	0	0	1	2.0
Airframe/component/system failure/malfunction	0	1	1	0	0	0	1	0	0	3	6.1
Main gear collapsed	0	0	0	0	0	0	1	0	0	1	2.0
Nose gear collapsed	0	0	0	0	0	0	1	0	0	1	2.0
Hard landing	0	0	0	0	0	0	3	0	0	3	6.1
In flight collision w/obj.	0	0	0	0	0	0	0	1	0	1	2.0
In flight encounter w/wx.	0	0	0	3	6	4	0	0	0	13	26.5
Loss of control - in flight	0	0	1	0	0	1	0	0	0	2	4.1
Loss of control - on ground	0	0	0	0	0	0	1	0	0	1	2.0
Collision between aircraft (other than midair)	0	1	0	0	0	0	0	0	0	1	2.0
Near collision between aircraft	0	0	0	0	0	2	0	0	0	2	4.1
On ground collision w/obj.	1	4	0	0	0	0	0	0	0	5	10.2
On ground encounter w/ter.	0	2	0	0	0	0	0	0	0	2	4.1
Loss of engine power	0	0	0	1	0	0	0	0	0	1	2.0
Loss of power (partial) - nonmechanical	0	0	1	0	0	0	0	0	0	1	2.0
Undetermined	1	0	0	0	0	0	0	0	0	1	4.1
Miscellaneous/other	4	2	1	0	1	0	0	0	1	9	18.4
Not reported	0	0	0	0	0	0	0	0	1	1	2.0
Aircraft											
Number -	6	10	4	4	8	7	7	1	2	49	
Percent -	12.2	20.4	8.2	8.2	16.3	14.3	14.3	4.1	2.0		

Table 9 - AIRCRAFT BY PHASE OF OPERATION AND DEGREE OF INJURY AND BY DAMAGE
14 CFR 121 OPERATIONS
1997

Phase of operation *	Degree of injury				Aircraft damage				Aircraft	
	None	Minor	Ser	Fatal	None	Minor	Subs	Dest	No.	Percent
Standing	0	1	0	0	0	0	1	0	1	2.0
Standing - starting engines	1	0	0	0	0	0	1	0	1	2.0
Standing - engines not operating	0	0	3	1	2	2	0	0	4	8.2
Taxi	1	0	0	0	0	0	1	0	1	2.0
Taxi - pushback/tow	0	0	2	1	3	0	0	0	3	6.1
Taxi - to takeoff	2	0	1	0	0	0	3	0	3	6.1
Taxi - from landing	1	2	0	0	0	0	3	0	3	6.1
Takeoff	1	0	0	1	0	0	1	1	2	4.1
Takeoff - roll/run	0	0	1	0	0	1	0	0	1	2.0
Takeoff - initial climb	1	0	0	0	0	0	1	0	1	2.0
Climb	0	0	2	0	2	0	0	0	2	4.1
Climb - to cruise	1	0	1	0	1	0	1	0	2	4.1
Cruise	0	0	3	1	3	1	0	0	4	8.2
Cruise - normal	0	0	4	0	3	1	0	0	4	8.2
Descent	0	0	1	0	1	0	0	0	1	2.0
Descent - normal	0	0	6	0	5	1	0	0	6	12.2
Landing - flare/touchdown	2	1	0	0	0	0	2	1	3	6.1
Landing roll	1	3	0	0	0	0	4	0	4	8.2
Maneuvering	1	0	0	0	0	0	1	0	1	2.0
Not reported	1	0	1	0	1	0	1	0	2	4.1
Aircraft										
Number -	13	7	25	4	21	6	20	2	49	
Percent -	26.5	14.3	51.0	8.2	42.9	12.2	40.8	4.1		

* Phase of Operation is the phase of flight in which the first occurrence happened.

Table 10 - AIRCRAFT BY CONDITION OF LIGHT AND TYPE OF WEATHER
14 CFR 121 OPERATIONS
1997

Condition of light	Type of weather			Aircraft	
	VMC	IMC	Unknown	No.	Percent
Dawn	0	1	0	1	2.0
Daylight	19	6	0	25	51.0
Night (dark)	9	1	0	10	20.4
Night (bright)	4	1	0	5	10.2
Dusk	2	0	0	2	4.1
Not reported	2	1	3	6	12.2
Aircraft					
Number -	36	10	3	49	
Percent -	73.5	20.4	6.1		

Table 11 - AIRCRAFT BY TYPE OF OPERATION AND DEGREE OF INJURY
14 CFR 121 OPERATIONS
1997

Type of Operation	Degree of Injury				Aircraft	
	None	Minor	Serious	Fatal	No.	Percent
Scheduled Domestic Passenger	7	6	15	0	28	57.1
Scheduled Domestic Cargo	0	0	1	0	1	2.0
Scheduled Domestic Pax/Cargo	1	0	2	0	3	6.1
Scheduled International Pax	3	0	4	3	10	20.4
Scheduled Int'l Pax/Cargo	0	0	2	0	2	4.1
Nonscheduled Domestic Cargo	2	1	0	0	3	6.1
Nonscheduled Int'l Passenger	0	0	1	0	1	2.0
Nonscheduled International Cargo	0	0	0	1	1	2.0
Aircraft						
Number -	13	7	25	4	49	
Percent -	26.5	14.3	51.0	8.2		

Table 12 - AIRCRAFT BY OCCURRENCE OF FIRE AND DEGREE OF INJURY AND BY DAMAGE
14 CFR 121 OPERATIONS
1997

Aircraft fire	Degree of injury				Aircraft damage				Aircraft	
	None	Minor	Ser	Fatal	None	Minor	Subs	Dest	No.	Percent
None	11	6	24	3	21	5	18	0	44	89.8
In-flight	1	0	0	0	0	0	1	0	1	2.0
On ground	1	1	1	1	0	1	1	2	4	8.2
Aircraft										
Number -	13	7	25	4	21	6	20	2	49	
Percent -	26.5	14.3	51.0	8.2	42.9	12.2	40.8	4.1		

Table 13 - BROAD CAUSE/FACTOR ASSIGNMENTS*
14 CFR 121 OPERATIONS
1997

Cause/Factor	Cited as a Cause		Cited as a Factor		Cited as Either a Cause or a Factor(or Both)	
	Fatal Accidents	All Accidents	Fatal Accidents	All Accidents	Fatal Accidents	All Accidents
Aircraft #	**0**	**5**	**0**	**5**	**0**	**8**
Propulsion System and Controls	0	0	0	0	0	0
Flight Control System	0	0	0	0	0	0
Airframe	0	0	0	2	0	2
Landing Gear	0	3	0	2	0	4
Systems/Equipment/Instruments	0	2	0	1	0	3
Environment #	**0**	**10**	**1**	**11**	**1**	**20**
Weather	0	9	1	9	1	18
Light Conditions	0	0	0	3	0	3
Object (trees, wires, etc.)	0	0	0	1	0	1
Airport/Airways Facilities, Aids	0	1	0	2	0	3
Terrain/Runway Condition	0	0	0	1	0	1
Personnel #	**3**	**36**	**2**	**9**	**3**	**37**
Pilot	2	14	0	6	2	16
Others (Aboard)	0	9	1	1	1	10
Others (Not Aboard)	1	14	1	4	1	15
Number of Aircraft					4	49
NTSB Determined Probable Cause					3	43

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* Multiple causes and factors may be assigned in an accident.

\# This category is composed of the sub-categories indented below it. The number of aircraft cited in a category may be less than or equal to the sum of the sub-category citations.

Table 14 - ACCIDENTS, FATAL ACCIDENTS, FATALITIES, AND RATES
ALL 14 CFR 121 OPERATIONS
1987 - 1997

Year	Accidents	Fatal Accidents	Fatalities		Accident Rate per 100,000* Aircraft Hours Flown		
			Total	Aboard Aircraft In This Category	Hours Flown	Total	Fatal
1987	34	5	232	230	10,645,192	0.310	0.038
1988	30	3	285	274	11,140,548	0.260	0.018
1989	28	11	278	276	11,274,543	0.248	0.098
1990	24	6	39	12	12,150,116	0.198	0.049
1991	26	4	62	49	11,780,610	0.221	0.034
1992	18	4	33	31	12,359,715	0.146	0.032
1993	23	1	1	0	12,706,206	0.181	0.008
1994	23	4	239	237	13,124,315	0.168	0.030
1995	36	3	168	162	13,505,257	0.267	0.022
1996	38	5	380	350	13,746,112	0.276	0.036
1997	49	4	8	6	15,838,109	0.309	0.025

* Suicide and sabotage accidents excluded from rates as follows:
Total - 1987 (1), 1988 (1), 1994 (1)
Fatal - 1987 (1), 1988 (1)

Figure 1 - ACCIDENTS AND FATAL ACCIDENTS ALL 14 CFR 121 OPERATIONS

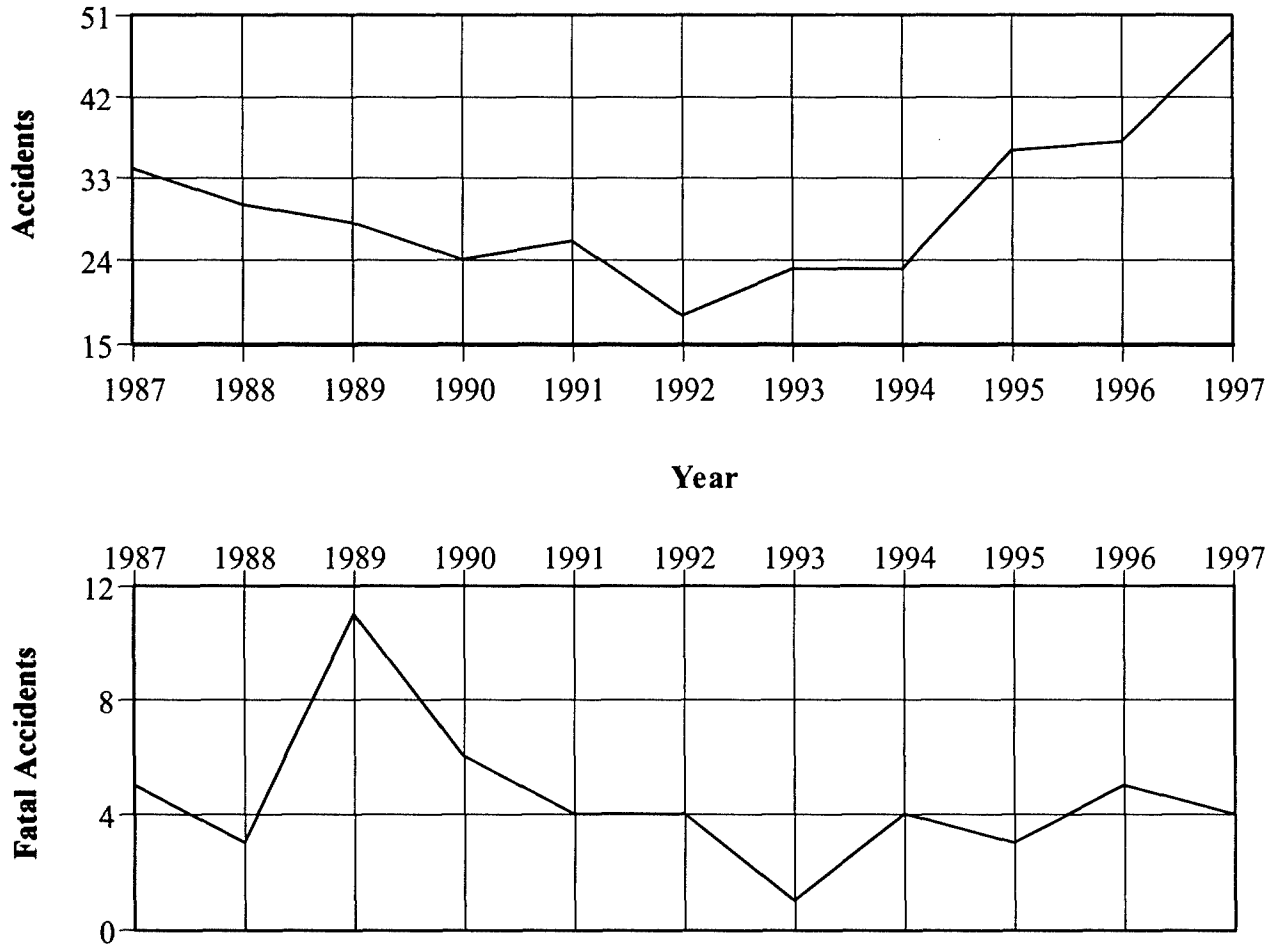


Figure 2 - NUMBER OF FATALITIES
ALL 14 CFR 121 OPERATIONS

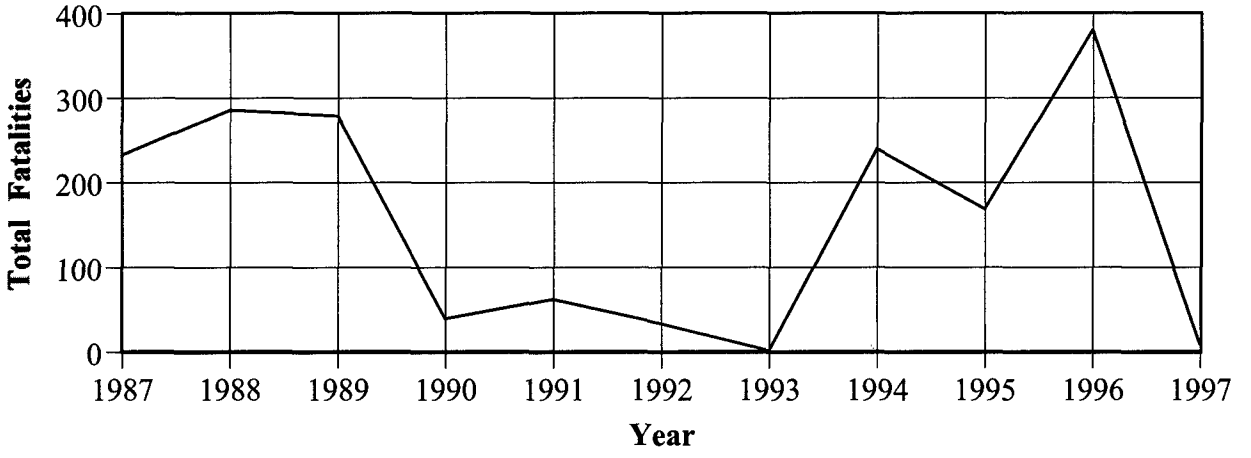


Figure 3 - ACCIDENTS PER 100,000 HOURS FLOWN
ALL 14 CFR 121 OPERATIONS

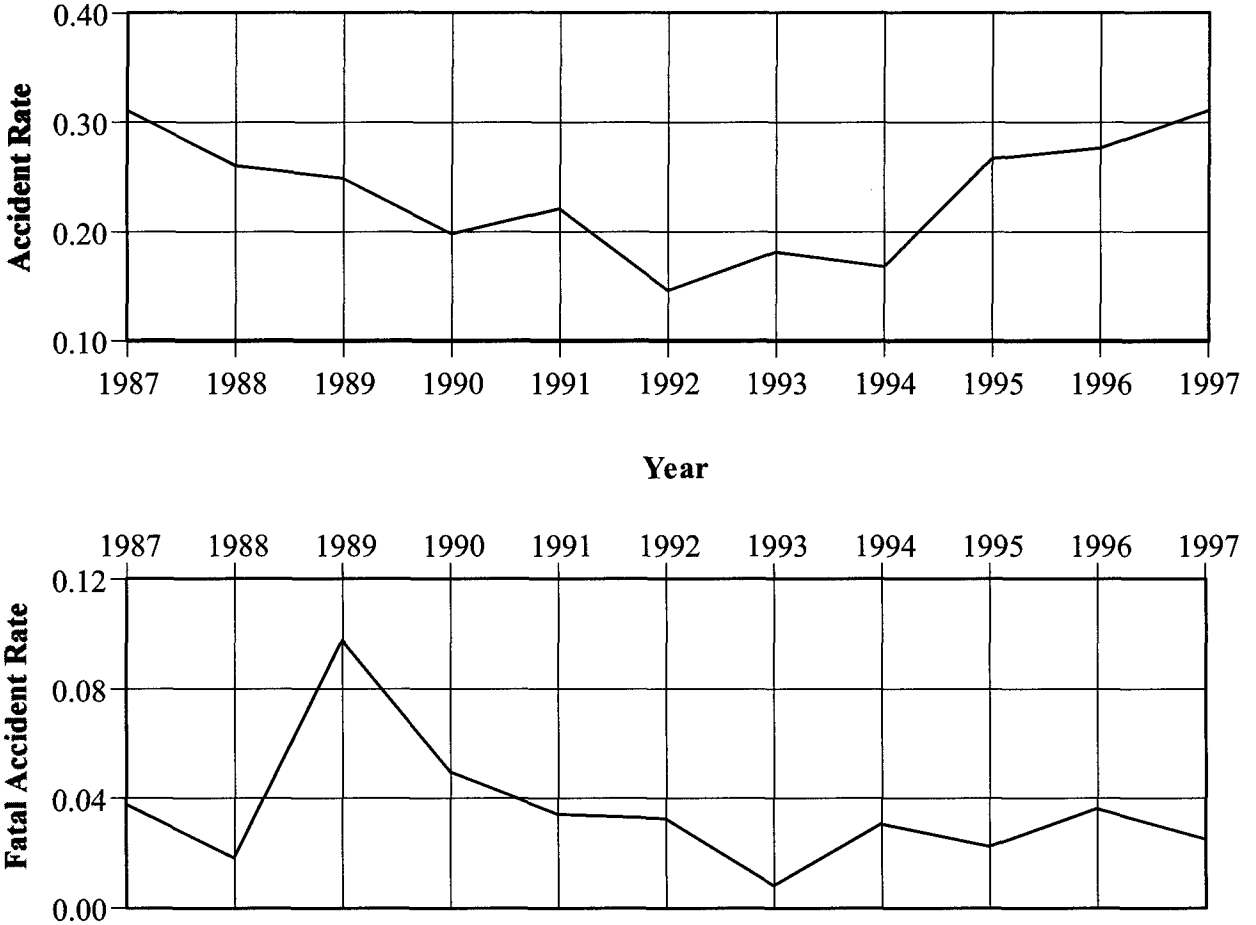


Table 15 - ACCIDENTS, FATAL ACCIDENTS, FATALITIES, AND RATES
SCHEDULED 14 CFR 121 OPERATIONS
1987 - 1997

Year	Accidents	Fatal Accidents	Fatalities		Hours Flown	Accident Rate per 100,000* Aircraft Hours Flown	
			Total	Aboard Aircraft In This Category		Total	Fatal
1987	32	4	231	229	10,115,407	0.306	0.030
1988	29	3	285	274	10,521,052	0.266	0.019
1989	24	8	131	130	10,597,922	0.226	0.075
1990	22	6	39	12	11,524,726	0.191	0.052
1991	25	4	62	49	11,139,166	0.224	0.036
1992	16	4	33	31	11,732,026	0.136	0.034
1993	22	1	1	0	11,981,347	0.184	0.008
1994	19	4	239	237	12,292,356	0.146	0.033
1995	34	2	166	160	12,776,679	0.266	0.016
1996	32	3	342	342	12,971,676	0.247	0.023
1997	44	3	3	3	15,061,662	0.292	0.020

* Suicide and sabotage accidents excluded from rates as follows:
Total - 1987 (1), 1988 (1), 1994 (1)
Fatal - 1987 (1), 1988 (1)

Figure 4 - ACCIDENTS AND FATAL ACCIDENTS SCHEDULED 14 CFR 121 OPERATIONS

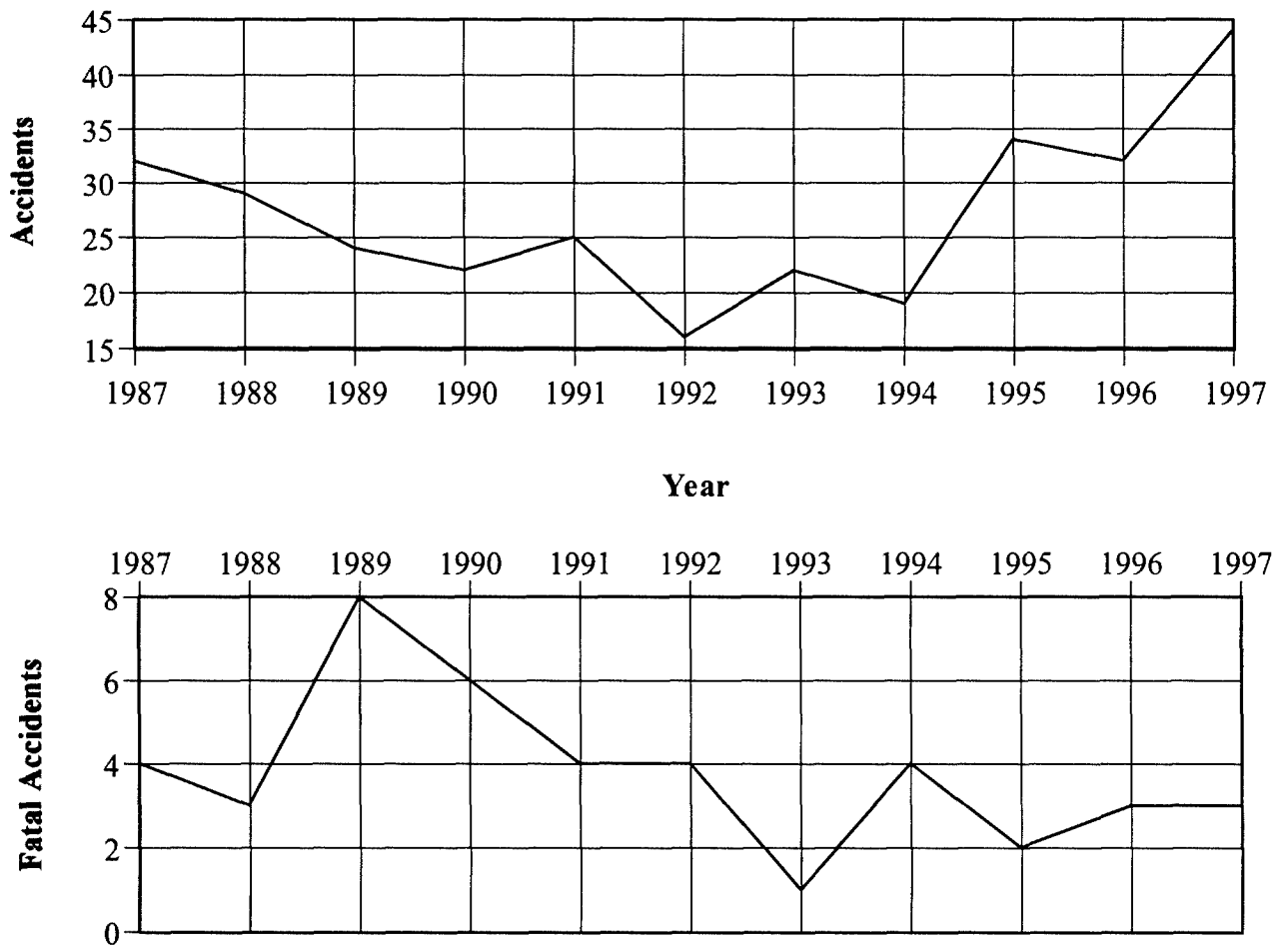


Figure 5 - NUMBER OF FATALITIES
SCHEDULED 14 CFR 121 OPERATIONS

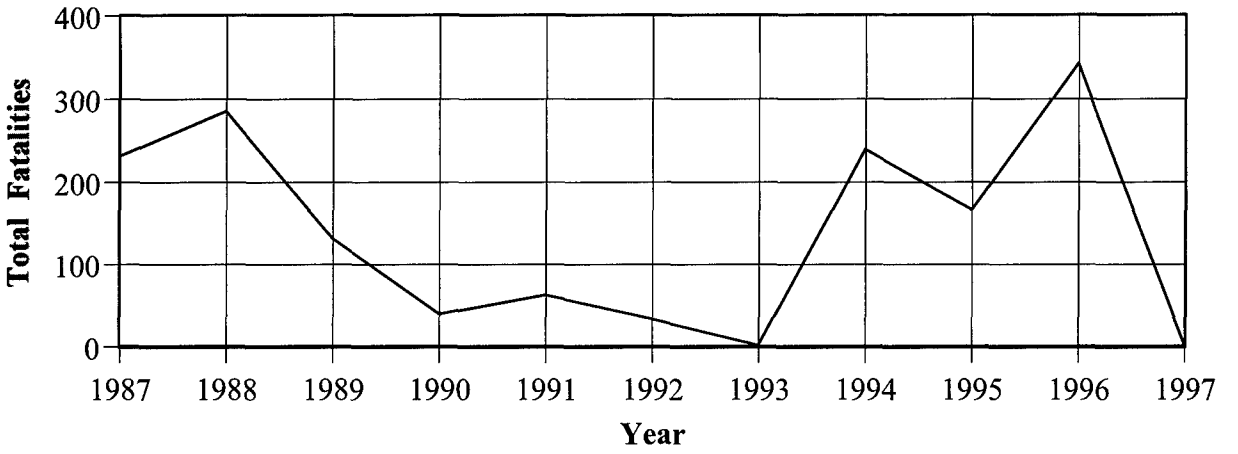


Figure 6 - ACCIDENTS PER 100,000 HOURS FLOWN
SCHEDULED CFR 121 OPERATIONS

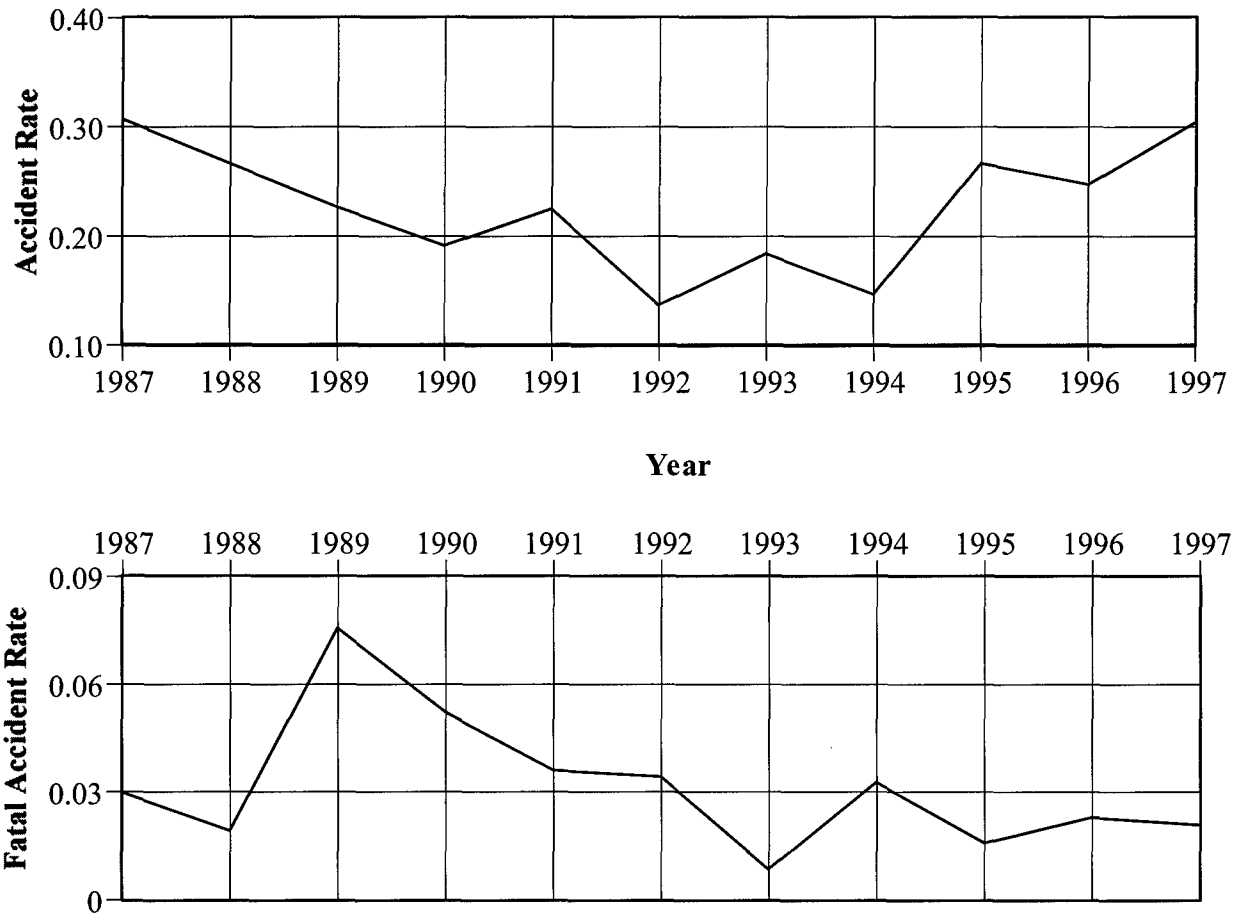


Table 16 - ACCIDENTS, FATAL ACCIDENTS, FATALITIES, AND RATES
NONSCHEDULED 14 CFR 121 OPERATIONS
1987 - 1997

Year	Accidents	Fatal Accidents	Fatalities		Hours Flown	Accident Rate per 100,000* Aircraft Hours Flown	
			Total	Aboard Aircraft In This Category		Total	Fatal
1987	2	1	1	1	529,785	0.378	0.189
1988	1	0	0	0	619,496	0.161	0.000
1989	4	3	147	146	676,621	0.591	0.443
1990	2	0	0	0	625,390	0.320	0.000
1991	1	0	0	0	641,444	0.156	0.000
1992	2	0	0	0	627,689	0.319	0.000
1993	1	0	0	0	724,859	0.138	0.000
1994	4	0	0	0	831,959	0.481	0.000
1995	2	1	2	2	728,578	0.275	0.137
1996	5	2	38	8	774,436	0.646	0.258
1997	5	1	5	4	776,447	0.644	0.129

Figure 7 - ACCIDENTS AND FATAL ACCIDENTS
NONSCHEDULED 14 CFR 121 OPERATIONS

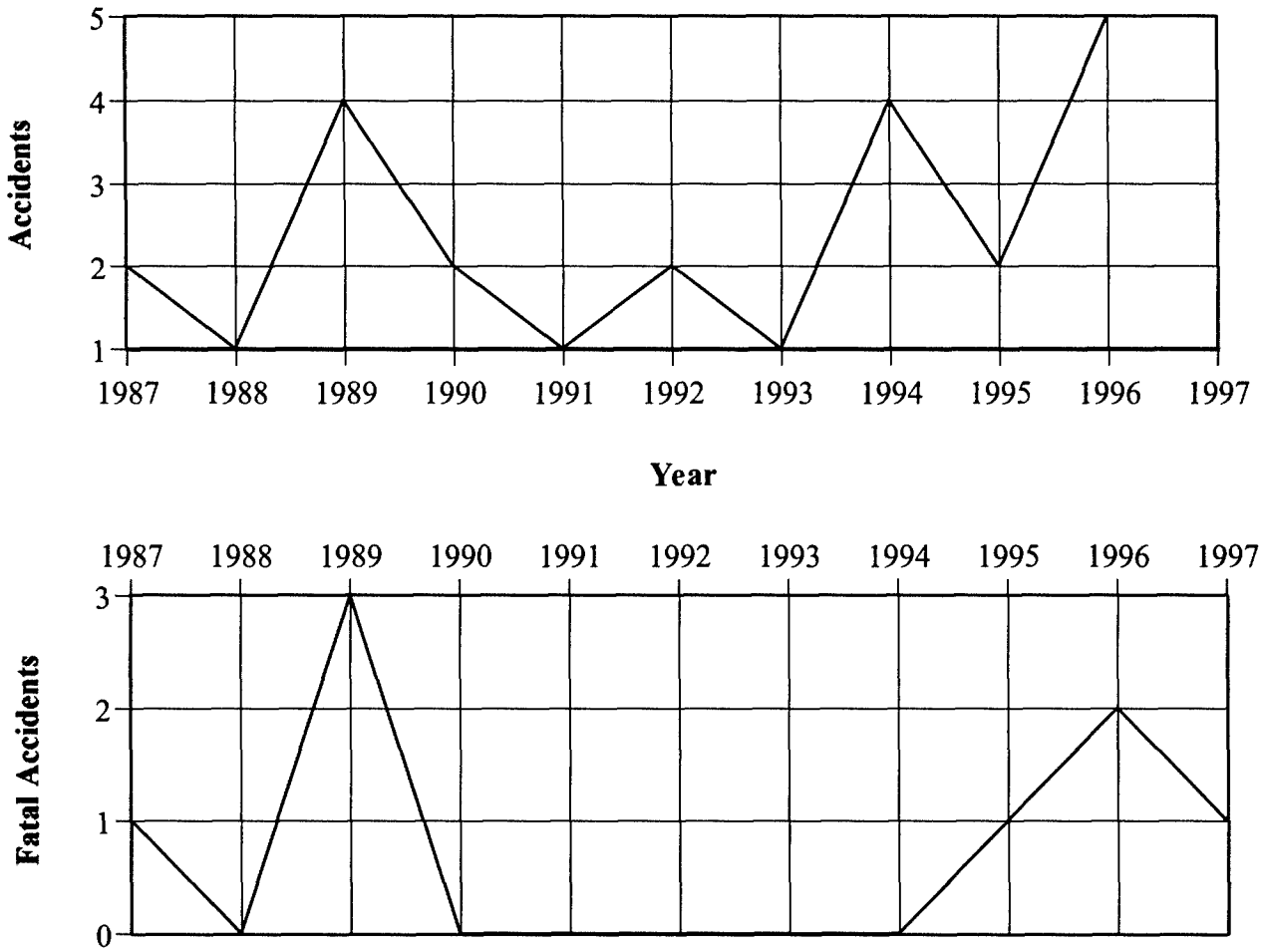


Figure 8 - NUMBER OF FATALITIES
NONSCHEDULED 14 CFR 121 OPERATIONS

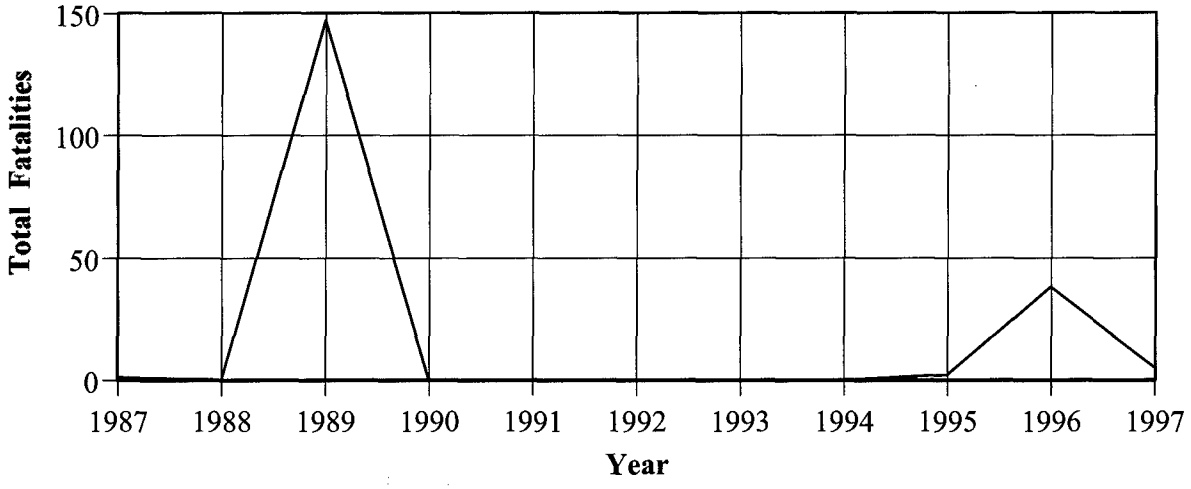
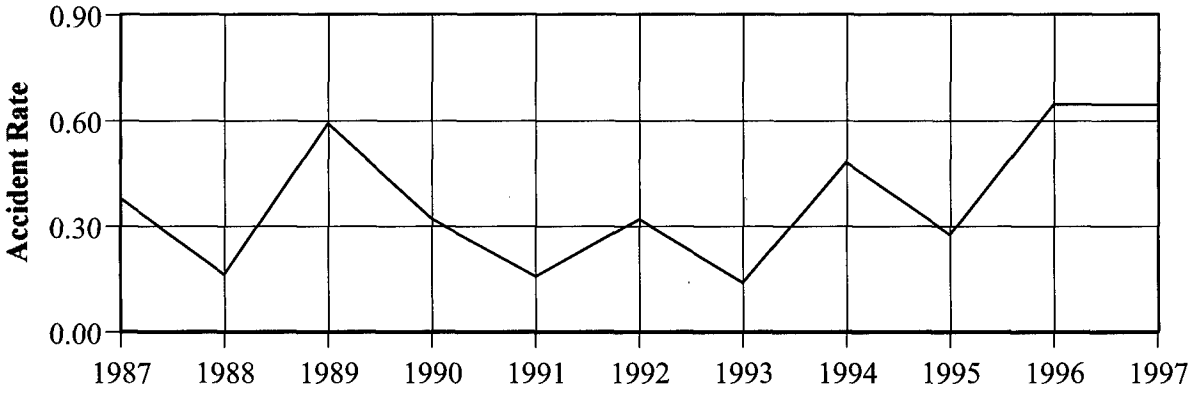


Figure 9 - ACCIDENTS PER 100,000 HOURS FLOWN
NONSCHEDULED 14 CFR 121 OPERATIONS



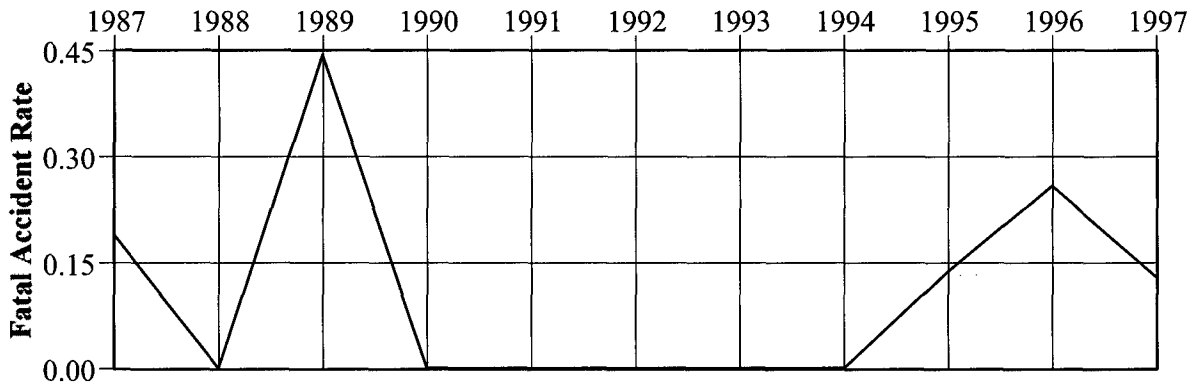


Table 17 - FIRST OCCURRENCES IN ALL ACCIDENTS AND IN FATAL ACCIDENTS
14 CFR 121 OPERATIONS
1997 AND 1987 - 1996

	All Accidents				Fatal Accidents			
	1997		1987 - 1996		1997		1987 - 1996	
Type of Occurrence	No.	Percent	Mean	Percent	No.	Percent	Mean	Percent
In flight encounter with weather	13	26.5	6.3	22.9	1	25.0	.1	2.1
On ground collision with object	5	10.2	4.1	14.3	0	.0	.9	19.1
Airframe/component/system failure/ malfunction	3	6.1	4.0	13.9	0	.0	.7	14.9
Miscellaneous/other	9	18.4	3.0	10.5	1	25.0	.2	4.3
Loss of control - in flight	2	4.1	1.1	3.8	1	25.0	.9	19.1
Loss of engine power(total) - mechanical failure/malfunction	0	.0	.9	3.1	0	.0	.2	4.3
Collision between aircraft (other than midair)	1	2.0	.9	3.1	0	.0	.1	2.1
Not reported	1	2.0	.8	2.8	0	.0	.3	6.4
Hard landing	3	6.1	.8	2.8	0	.0	.0	.0
In flight collision with terrain	0	.0	.8	2.8	0	.0	.5	10.6
In flight collision with object	1	2.0	.6	2.1	0	.0	.1	2.1
Altitude deviation,uncontrolled	1	2.0	.5	1.7	0	.0	.0	.0
Fire	0	.0	.5	1.7	0	.0	.1	2.1
On ground collision with terrain	2	4.1	.5	1.7	0	.0	.0	.0
Loss of control - on ground	1	2.0	.4	1.4	0	.0	.1	2.1
Abrupt maneuver	0	.0	.3	1.0	0	.0	.0	.0
Dragged wing, rotor, pod, or float	0	.0	.3	1.0	0	.0	.0	.0
Fire/explosion	0	.0	.3	1.0	0	.0	.0	.0
Loss of engine power(total) - non-mechanical	0	.0	.3	1.0	0	.0	.0	.0
Wheels up landing	0	.0	.3	1.0	0	.0	.0	.0
Propeller blast or jet exhaust	0	.0	.3	1.0	0	.0	.0	.0
Explosion	0	.0	.2	.7	0	.0	.2	4.3
Main gear collapsed	1	2.0	.2	.7	0	.0	.0	.0
On ground encounter with weather	0	.0	.2	.7	0	.0	.1	2.1
Overrun	0	.0	.2	.7	0	.0	.0	.0
Nose gear collapsed	1	2.0	.1	.3	0	.0	.0	.0
Tail gear collapsed	0	.0	.1	.3	0	.0	.0	.0
Midair collision	0	.0	.1	.3	0	.0	.0	.0
Loss of engine power	1	2.0	.1	.3	0	.0	.1	2.1
Loss of engine power(partial) - mechanical failure/malfunction	0	.0	.1	.3	0	.0	.0	.0
Engine tearaway	0	.0	.1	.3	0	.0	.0	.0
Propeller/rotor contact to person	0	.0	.1	.3	0	.0	.1	2.1
Undershoot	0	.0	.1	.3	0	.0	.0	.0
Vortex turbulence encountered	1	2.5	.0	.0	0	.0	.0	.0
Near collision between aircraft	2	4.1	.0	.0	0	.0	.0	.0
Loss of engine power(partial) - non-mechanical	1	2.0	.0	.0	0	.0	.0	.0
Undetermined	1	2.0	.0	.0	1	25.0	.0	.0
Total	49	100.0	28.7	100.0	4	100.0	4.7	100.0

Table 18 - FIRST PHASES OF OPERATION IN ALL ACCIDENTS AND IN FATAL ACCIDENTS
14 CFR 121 OPERATIONS
1997 AND 1987 - 1996

	All Accidents				Fatal Accidents			
	1997		1987 - 1996		1997		1987 - 1996	
Phase of Operation	No.	Percent	Mean	Percent	No.	Percent	Mean	Percent
Cruise	8	16.3	5.3	18.5	1	25.0	.7	14.9
Taxi	10	20.4	4.8	16.7	1	25.0	.4	8.5
Takeoff	4	8.2	3.7	12.9	1	25.0	1.1	23.4
Landing	7	14.3	3.5	12.2	0	.0	.3	6.4
Standing	6	12.2	3.0	10.5	1	25.0	.5	10.6
Descent	7	14.3	3.0	10.5	0	.0	.0	.0
Climb	4	8.2	1.9	6.6	0	.0	.4	8.5
Approach	0	.0	2.2	7.7	0	.0	.8	17.0
Not reported	2	4.1	.9	3.1	0	.0	.4	8.5
Maneuvering	1	2.0	.3	1.0	0	.0	.1	2.1
Other	0	.0	.1	.3	0	.0	.0	.0
Total Aircraft	49	100.0	28.7	100.0	4	100.0	4.7	100.0

Table 19 - BROAD CAUSE/FACTOR ASSIGNMENTS IN ALL ACCIDENTS AND IN FATAL ACCIDENTS
14 CFR 121 OPERATIONS
1997 AND 1987 - 1996

	All Accidents				Fatal Accidents			
	1997		1987 - 1996		1997		1987 - 1996	
Broad Cause/Factor	No.	Percent	Mean	Percent	No.	Percent	Mean	Percent
Other Person (Not Aboard)	15	30.6	10.9	38.0	1	25.0	2.5	53.2
Pilot	16	32.7	9.2	32.1	2	50.0	1.3	27.7
Weather	18	36.7	7.7	26.8	1	25.0	.8	17.0
Other Person (Aboard)	10	20.4	4.9	17.1	1	25.0	.2	4.3
Systems/Equipment/ Instruments	3	6.1	4.2	14.6	0	.0	.9	19.1
Propulsion System and Controls	0	.0	2.5	8.7	0	.0	.3	6.4
Object (tree,wires,etc)	1	2.0	1.1	3.8	0	.0	.1	2.1
Airframe	2	4.1	1.1	3.8	0	.0	.7	14.9
Landing Gear	4	8.2	1.3	4.5	0	.0	.1	2.1
Light Conditions	3	6.1	1.2	4.2	0	.0	.1	2.1
Terrain/Runway Condition	1	2.0	.7	2.4	0	.0	.1	2.1
Flight Control System	0	.0	.6	2.1	0	.0	.2	4.3
Airport/Airways Facilities, Aids	3	6.1	.5	1.7	0	.0	.3	6.4
Total Aircraft	49	100.0	28.7	100.0	4	100.0	4.7	100.0
NTSB Determined Probable Cause	43		26.3		3		3.9	

Scheduled 14 CFR Part 135 Operations

There were 16 accidents involving scheduled 14 CFR Part 135 operations (commuter air carriers) in 1997. The average number of accidents per year in this category for the years 1987 through 1996 was 18. The accident rate per 100,000 hours flown for 1997 was 1.628, compared with 0.744 for the period 1987 through 1996. The number of hours flown in 1997 by scheduled Part 135 operators was the lowest in a decade and less than half the activity recorded for the previous year (1996). This decrease in activity is associated with the regulatory reclassification of Part 135/Part 121 operations and has a direct effect on the accident rate.

For the purpose of comparison, one can estimate the accident rate in 1997 if there had been no reclassification of Part 121/135 operations. Six accidents occurred after March that, based on aircraft size, would probably have been classified as Part 135 operations instead of Part 121 operations if there had been no regulatory reclassification. If those six are added to the 16 Part 135 accidents (raising the total to 22) and divided by the average hours flown by Part 135 operators (average hours flown from 1987 to 1996 was 2,405,500) the accident rate for 1997 drops to 0.915 per 100,000 flight hours flown.

Five fatal accidents in 1997 resulted in 46 fatalities in Part 135 operations (one of these accidents which occurred in January 1997 had 29 fatalities; had that accident occurred later in the year it would have been classified as a Part 121 operation). The annual average for the period 1987 through 1996 was 4.5 fatal accidents and 31 fatalities per year in scheduled Part 135 operations. The fatal accident rate for 1997 was 0.509 per 100,000 hours flown. This rate, the highest since 1987, is directly affected by the substantially lower activity measure of aircraft hours flown for 1997.

Table 20 - SUMMARY OF LOSSES
SCHEDULED 14 CFR 135 OPERATIONS
1987 - 1997

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Accidents											
Fatal	10	2	5	3	8	7	4	3	2	1	5
Serious Injury	5	2	2	2	3	1	2	1	2	1	1
Minor Injury	6	2	3	1	3	3	2	1	0	5	3
No Injury	12	12	9	9	9	12	8	5	8	4	7
Total	33	18	19	15	23	23	16	10	12	11	16
Fatalities											
Passenger	42	17	25	3	64	13	19	19	7	10	40
Crew	15	4	6	1	13	8	4	6	2	2	6
Other Persons	2	0	0	2	22	0	1	0	0	2	0
Total	59	21	31	6	99	21	24	25	9	14	46
Aircraft Damage											
Destroyed	11	3	5	2	9	7	4	3	3	1	5
Substantial	19	14	14	12	13	16	10	6	9	10	11
Minor	2	1	0	1	0	0	0	1	0	0	0
None	1	0	1	0	1	0	2	0	0	0	0
Total	33	18	20[a]	15	23	23	16	10	12	11	16

[a] The number of aircraft damaged is higher than the number of accidents because these accidents included collisions between two aircraft.

Table 21 - ACCIDENT RATES
SCHEDULED 14 CFR 135 OPERATIONS
1987 - 1997

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Accidents Rates [d]											
Miles Flown [b]	.094	.047	.048	.033	.053	.043	.029	.017	.022	.019	.064
Hours Flown [c]	1.695	.860	.848	.641	1.004	.942	.606	.359	.457	.399	1.628
Departures Flown [c]	1.174	.619	.674	.475	.815	.706	.444	.279	.373	.313	1.148
Fatal Accident Rates [d]											
Miles Flown [b]	.029	.005	.013	.009	.018	.014	.007	.005	.004	.002	.020
Hours Flown [c]	.514	.096	.223	.171	.349	.300	.152	.108	.076	.036	.509
Departures Flown [c]	.356	.069	.177	.127	.284	.225	.111	.084	.062	.028	.359

[b] Per Million Miles Flown
[c] Per Hundred Thousand Hours and Departures Flown

[d] The 4/17/92 suicide involving a Mesaba Airline Fairchild SA-227AC is excluded from accident rate computation.

Table 22 - LIST OF ACCIDENTS
SCHEDULED 14 CFR 135 OPERATIONS
1997

Date	Location	Type of Operation	Air Carrier	Aircraft Type	Aircraft Damage	Degree of Injury	First Occurrence
01/09	Monroe, MI	Passenger	COMAIR	Embraer EMB-120RT	Destroyed	Fatal (29)	Loss of control - in flight
01/10	Bangor, ME	Passenger	MESA AIRLINES	Beech 1900D	Substantial	Minor	Airframe/component/system failure/malfunction
02/08	St. Thomas, VI	Passenger	AIR SUNSHINE	Cessna 402C	Destroyed	Fatal (2)	In flight collision with terrain
03/27	Grayling, AK	Pax/Cargo	YUTE AIR ALASKA	Cessna 207	Substantial	Minor	Loss of power(partial) - mech. failure/malfunction
04/01	Virgin Gorda, VI	Passenger	VIRGIN AIR	Piper PA-23-250	Substantial	None	Not reported
04/03	Teller, AK	Passenger	OLSON AIR SERVICE	Cessna 207	Substantial	Minor	In flight encounter with weather
04/07	Stebbins, AK	Pax/Cargo	CAPE SMYTHE AIR	Piper PA-31-T3	Substantial	None	In flight collision with terrain
04/10	Wainwright, AK	Pax/Cargo	HAGELAND AVIATION	Cessna 208B	Destroyed	Fatal (5)	In flight collision with terrain
04/23	Minto, AK	Pax/Cargo	FRONTIER FLYING	Cessna 207A	Substantial	None	Miscellaneous/other (cargo door opened in cruise flight)
04/25	Selawik, AK	Pax/Cargo	YUTE AIR	Piper PA-31-350	Substantial	None	Wheels up landing
06/20	Prudhoe Bay, AK	Pax/Cargo	WARBELOW'S	Cessna 206	Substantial	None	Miscellaneous/other (cargo door opened during descent)
06/27	Nome, AK	Passenger	OLSON AND SONS	Cessna 207A	Destroyed	Fatal (2)	In flight collision with object
07/21	Naknek, AK	Pax/Cargo	PENINSULA AIRWAYS	Cessna 208	Substantial	None	In flight encounter with weather

Table 22 - LIST OF ACCIDENTS (Continued)
SCHEDULED 14 CFR 135 OPERATIONS
1997

Date	Location	Type of Operation	Air Carrier	Aircraft Type	Aircraft Damage	Degree of Injury	First Occurrence
08/07	Fajardo, PR	Passenger	FLAMENCO AIRWAYS	Pilatus BN-2 Islander	Substantial	Serious	Midair collision
09/14	Kivalina, AK	Pax/Cargo	HAGELAND AVIATION	Cessna 402C	Substantial	None	Nose gear collapsed
11/08	Barrow, AK	Pax/Cargo	HAGELAND AVIATION	Cessna 208B	Destroyed	Fatal (8)	Loss of control - in flight

Table 23 - PERSONS BY ROLE AND DEGREE OF INJURY
SCHEDULED 14 CFR 135 OPERATIONS
1997

Role of Person	Degree of Injury				
	Fatal	Serious	Minor	None	Total
Pilot	4	0	1	11	16
Copilot	1	0	0	1	2
Cabin attendants	1	0	0	0	1
Passenger	40	1	10	27	78
Total aboard	46	1	11	39	97
Other aircraft*	0	0	1	3	4
Grand total	46	1	12	42	101
Percent	45.5	1.0	11.9	41.6	

* Injuries carried opposite "Other aircraft" are injuries occurring in aircraft that are not part of this tabulation, but which were involved in collisions with aircraft which are a part of this tabulation.

Table 24 - AIRCRAFT BY DAMAGE AND DEGREE OF INJURY
SCHEDULED 14 CFR 135 OPERATIONS
1997

Aircraft damage	Degree of injury				Aircraft	
	None	Minor	Serious	Fatal	No.	Percent
Substantial	7	3	1	0	11	68.8
Destroyed	0	0	0	5	5	31.3
Aircraft						
Number -	7	3	1	5	16	
Percent -	43.8	18.8	6.3	31.3		

Table 25 - AIRCRAFT BY FIRST OCCURRENCE AND DEGREE OF INJURY AND BY DAMAGE
SCHEDULED 14 CFR 135 OPERATIONS
1997

Type of first occurrence	Degree of injury				Aircraft damage				Aircraft	
	None	Minor	Serious	Fatal	None	Minor	Substantial	Destroy	No.	Percent
Airframe/component/system failure/malfunction	0	1	0	0	0	0	1	0	1	6.3
In flight collision with object	0	0	0	1	0	0	0	1	1	6.3
In flight collision with terrain	1	0	0	2	0	0	1	2	3	18.8
Wheels up landing	1	0	0	0	0	0	1	0	1	6.3
In flight encounter with weather	1	1	0	0	0	0	2	0	2	12.5
Loss of control - in flight	0	0	0	2	0	0	0	2	2	12.5
Loss of power (partial) - mechanical failure/malfunction	0	1	0	0	0	0	1	0	1	6.3
Nose gear collapsed	1	0	0	0	0	0	1	0	1	6.3
Midair collision	0	0	1	0	0	0	1	0	1	6.3
Miscellaneous/other	2	0	0	0	0	0	2	0	2	12.5
Not reported	1	0	0	0	0	0	1	0	1	6.3
Aircraft										
Number -	7	3	1	5	0	0	11	5	16	
Percent -	43.8	18.8	6.3	31.3	.0	.0	68.8	31.3		

Table 26 - AIRCRAFT BY FIRST OCCURRENCE AND BROAD PHASE OF OPERATION
SCHEDULED 14 CFR 124 OPERATIONS
1997

Type of first occurrence	Phase of operation							Aircraft	
	Tkoff	Cruis	Dscnt	Aprch	Landg	Manvr	Nrept	No.	Percent
Airframe/component/system failure/malfunction	1	0	0	0	0	0	0	1	6.3
Nose gear collapsed	0	0	0	0	1	0	0	1	6.3
In flight collision w/obj.	0	0	0	0	1	0	1	6.3	
In flight collision w/ter.	0	1	0	1	1	0	3	18.8	
Wheels up landing	0	0	0	0	1	0	0	1	6.3
In flight encounter w/wx.	0	0	0	2	0	0	0	2	12.5
Loss of control - in flight	1	0	0	1	0	0	0	2	12.5
Loss of engine power - (partial) - mechanical	1	0	0	0	0	0	0	1	6.3
Midair collision	0	0	0	1	0	0	0	1	6.3
Miscellaneous/other	0	1	1	0	0	0	0	2	12.5
Not reported	0	0	0	0	0	0	1	1	6.3
Aircraft									
Number -	3	1	2	4	3	2	1	16	
Percent -	18.8	6.3	12.5	25.0	18.8	12.5	6.3		

Table 27 - AIRCRAFT BY PHASE OF OPERATION AND DEGREE OF INJURY AND BY DAMAGE
SCHEDULED 14 CFR 135 OPERATIONS
1997

Phase of operation *	Degree of injury				Aircraft damage				Aircraft	
	None	Minor	Seri-ous	Fatal	None	Minor	Substan-tial	De-stroy	No.	Percent
Takeoff - initial climb	0	2	0	1	0	0	2	1	3	18.8
Cruise	1	0	0	0	0	0	1	0	1	6.3
Descent	0	0	0	1	0	0	0	1	1	6.3
Descent - normal	1	0	0	0	0	0	1	0	1	6.3
Approach	0	0	0	1	0	0	0	1	1	6.3
Approach - VFR pattern - final approach	1	1	1	0	0	0	3	0	3	18.8
Landing	1	0	0	0	0	0	1	0	1	6.3
Landing - flare/touchdown	1	0	0	0	0	0	1	0	1	6.3
Landing - roll	1	0	0	0	0	0	1	0	1	6.3
Maneuvering	0	0	0	2	0	0	0	2	2	12.5
Not reported	1	0	0	0	0	0	1	0	1	6.3
Aircraft										
Number -	7	3	1	5	0	0	11	5	16	
Percent -	43.8	18.8	6.3	31.3	.0	.0	68.8	31.3		

* Phase of Operation is the phase of flight in which the first occurrence happened.

Table 28 - AIRCRAFT BY CONDITION OF LIGHT AND TYPE OF WEATHER
SCHEDULED 14 CFR 135 OPERATIONS
1997

Condition of light	Type of weather			Aircraft	
	VMC	IMC	Not reported	No.	Percent
Daylight	8	4	1	13	81.3
Night (dark)	2	0	0	2	12.5
Not reported	1	0	0	1	6.3
Aircraft					
Number -	11	4	1	16	
Percent -	68.8	25.0	6.3		

Table 29 - AIRCRAFT BY TYPE OF OPERATION AND DEGREE OF INJURY
SCHEDULED 14 CFR 135 OPERATIONS
1997

Type of Operation	Degree of Injury				Aircraft	
	None	Minor	Serious	Fatal	No.	Percent
Scheduled Domestic Passenger	0	2	1	3	6	37.5
Scheduled Domestic Pax/Cargo	6	1	0	2	9	56.3
Scheduled International Passenger	1	0	0	0	1	6.3
Aircraft						
Number -	7	3	1	5	16	
Percent -	43.8	18.8	6.3	31.3		

Table 30 - AIRCRAFT BY PROXIMITY TO AIRPORT AND FLIGHT PLAN
SCHEDULED 14 CFR 135 OPERATIONS
1997

Accident location	Flight plan				Aircraft	
	None	VFR	IFR	Cmpny VFR	No.	Percent
Off airport/airstrip	1	4	1	2	8	50.0
On airport	1	2	1	3	7	43.8
On airstrip	0	0	0	1	1	6.3
Aircraft						
Number -	2	6	2	5	16	
Percent -	12.5	37.5	12.5	31.3		

Table 31 - AIRCRAFT BY OCCURRENCE OF FIRE AND DEGREE OF INJURY AND BY DAMAGE
SCHEDULED 14 CFR 135 OPERATIONS
1997

	Degree of injury				Aircraft damage				Aircraft	
Aircraft fire	None	Minor	Serious	Fatal	None	Minor	Substantial	Dest	No.	Percent
None	7	3	1	4	0	0	11	4	15	93.8
On ground	0	0	0	1	0	0	0	1	1	6.3
Aircraft										
Number -	7	3	1	5	0	0	11	5	16	
Percent -	43.8	18.8	6.3	31.3	.0	.0	68.8	31.3		

Table 32 - AIRCRAFT BY TYPE OF AIRCRAFT AND DEGREE OF INJURY AND BY DAMAGE
SCHEDULED 14 CFR 135 OPERATIONS
1997

	Degree of injury				Aircraft damage				Aircraft	
Type of aircraft	None	Minor	Serious	Fatal	None	Minor	Substantial	Dest	No.	Percent
Fixed Wing - Single Reciprocating Engine	2	2	0	1	0	0	4	1	5	31.3
Fixed Wing - Multiengine	3	0	1	1	0	0	4	1	5	31.3
Fixed Wing - Turboprop	2	1	0	3	0	0	3	3	6	37.5
Aircraft										
Number -	7	3	1	5	0	0	11	5	16	
Percent -	43.8	18.8	6.3	31.3	.0	.0	68.8	31.3		

Table 33 - BROAD CAUSE/FACTOR ASSIGNMENTS*
SCHEDULED 14 CFR 135 OPERATIONS
1997

	Cited as a Cause		Cited as a Factor		Cited as Either a Cause or a Factor (or Both)	
Cause/Factor	Fatal Accidents	All Accidents	Fatal Accidents	All Accidents	Fatal Accidents	All Accidents
Aircraft #	**0**	**4**	**1**	**1**	**1**	**5**
Propulsion System and Controls	0	1	1	1	1	2
Airframe	0	2	0	0	0	2
Landing Gear	0	1	0	0	0	1
Environment #	**0**	**0**	**2**	**8**	**2**	**8**
Weather	0	0	2	6	2	6
Terrain/Runway Condition	0	0	0	3	0	3
Personnel #	**4**	**11**	**2**	**6**	**4**	**11**
Pilot	4	11	2	5	4	11
Others (Not Aboard)	0	1	0	1	0	1
Number of Aircraft					5	16
NTSB Determined Probable Cause					4	14

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* Multiple causes and factors may be assigned in an accident.

\# This category is composed of the sub-categories indented below it. The number of aircraft cited in a category may be less than or equal to the sum of the sub-category citations.

Table 34 - ACCIDENTS, FATAL ACCIDENTS, FATALITIES, AND RATES
SCHEDULED 14 CFR 135 OPERATIONS
1987 - 1997

Year	Accidents	Fatal Accidents	Fatalities		Accident Rate per 100,000* Aircraft Hours Flown		
			Total	Aboard Aircraft In This Category	Hours Flown	Total	Fatal
1987	33	10	59	57	1,946,349	1.695	0.514
1988	18	2	21	21	2,092,689	0.860	0.096
1989	19	5	31	31	2,240,555	0.848	0.223
1990	15	4	7	5	2,341,760	0.641	0.171
1991	23	8	99	77	2,291,581	1.004	0.349
1992	23	7	21	21	2,335,349	0.942	0.300
1993	16	4	24	23	2,638,347	0.606	0.152
1994	10	3	25	25	2,784,129	0.359	0.108
1995	12	2	9	9	2,627,866	0.457	0.076
1996	11	1	14	12	2,756,755	0.399	0.036
1997	16	5	46	46	982,764	1.628	0.509

* Suicide and sabotage accidents excluded from rates as follows :
Total - 1992 (1)

Figure 10 - ACCIDENTS AND FATAL ACCIDENTS
SCHEDULED 14 CFR 135 OPERATIONS

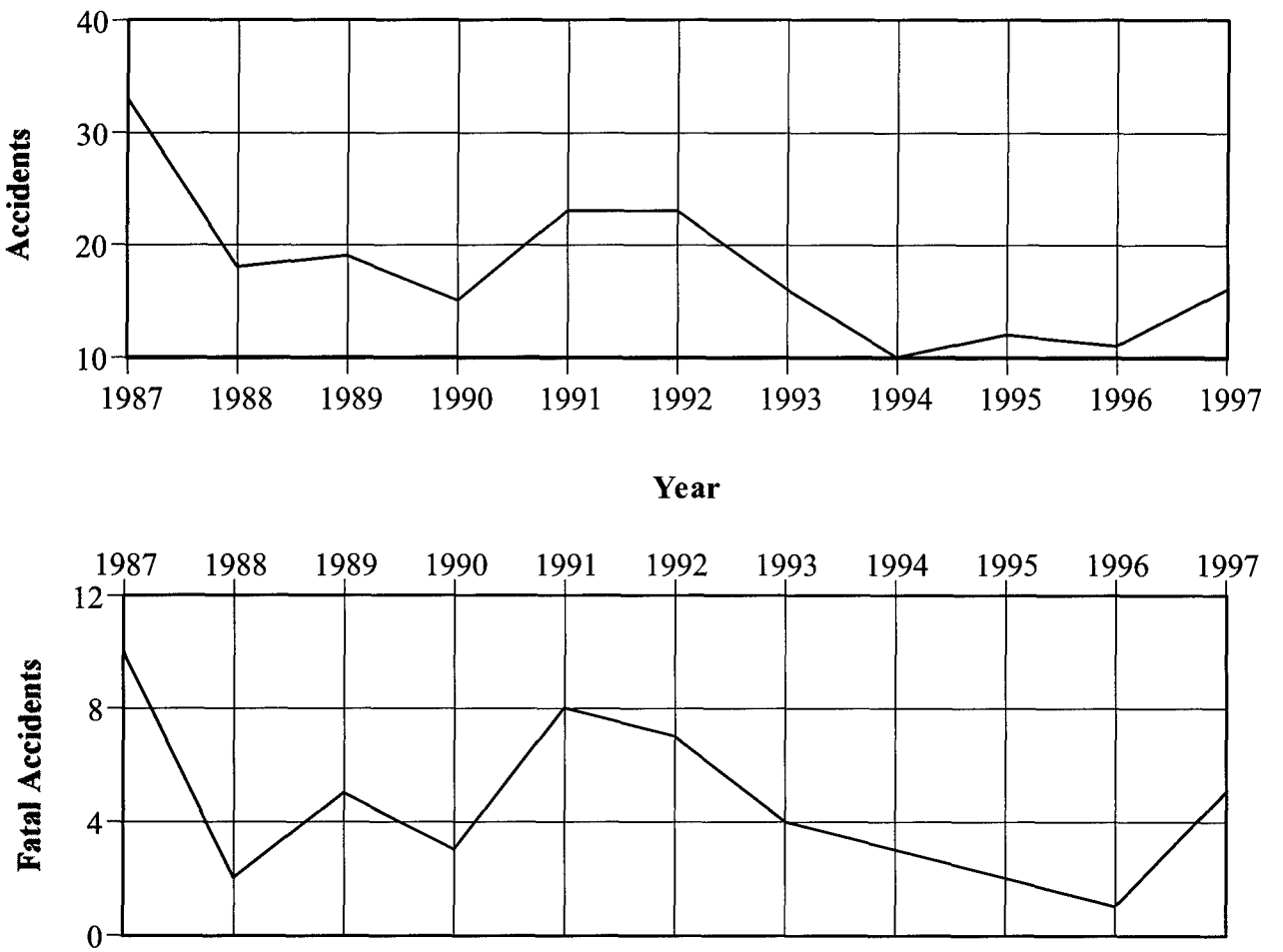


Figure 11 - NUMBER OF FATALITIES
SCHEDULED 14 CFR 135 OPERATIONS

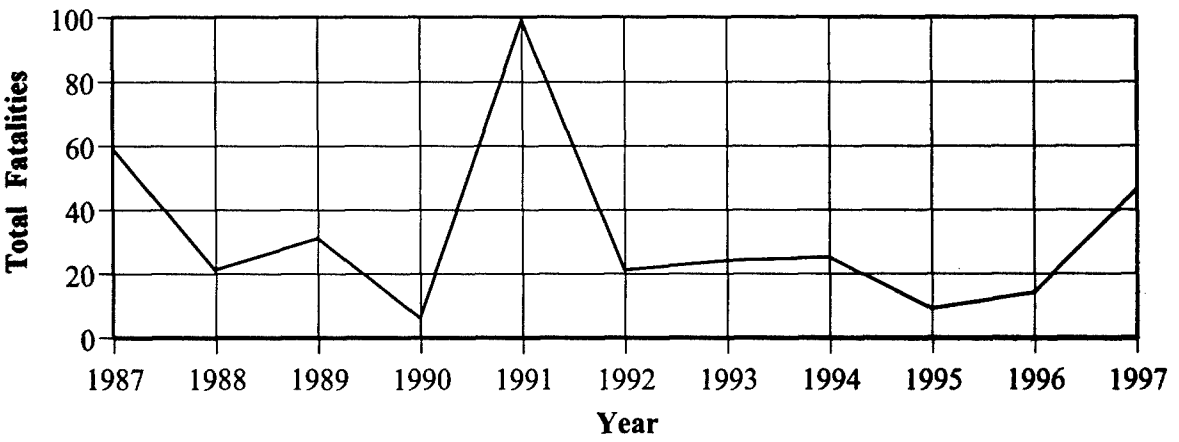
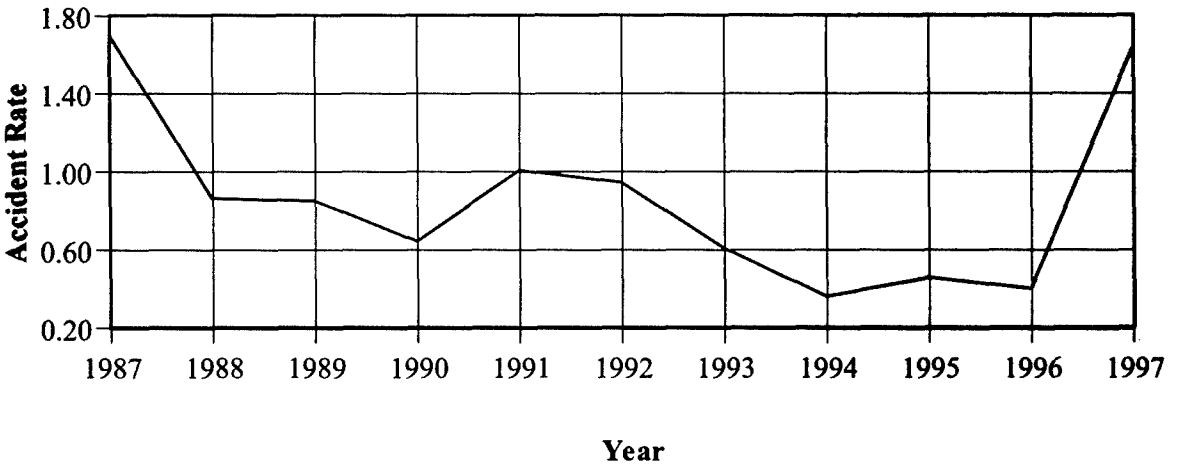


Figure 12 - ACCIDENT RATE PER 100,000 HOURS FLOWN
SCHEDULED 14 CFR 135 OPERATIONS



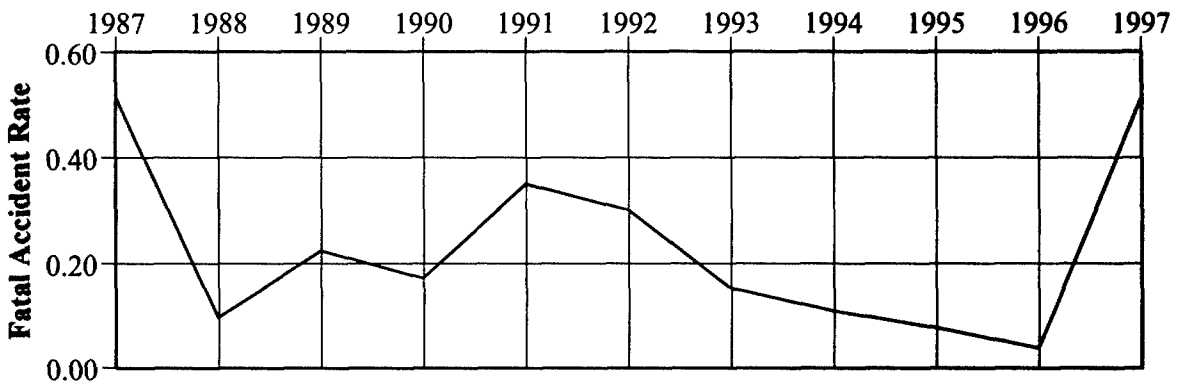


Table 35 - FIRST OCCURRENCES IN ALL ACCIDENTS AND IN FATAL ACCIDENTS
SCHEDULED 14 CFR 135 OPERATIONS
1997 AND 1987 - 1996

Type of Occurrence	All Accidents				Fatal Accidents			
	1997		1987 - 1996		1997		1987 - 1996	
	No.	Percent	Mean	Percent	No.	Percent	Mean	Percent
On ground collision with object	0	.0	2.8	15.5	0	.0	.1	2.2
Loss of control - in flight	2	12.5	2.2	12.2	2	40.0	1.1	24.4
In flight collision with terrain	3	18.8	2.1	11.6	2	40.0	1.1	24.4
In flight encounter with weather	2	12.5	1.6	8.8	0	.0	.8	17.8
Airframe/component/system failure/ malfunction	1	6.3	1.4	7.7	0	.0	.2	4.4
Hard landing	0	.0	.6	3.3	0	.0	.0	.0
In flight collision with object	1	6.3	.6	3.3	1	20.0	.1	2.2
Loss of control - on ground	0	.0	.6	3.3	0	.0	.0	.0
Overrun	0	.0	.6	3.3	0	.0	.0	.0
Loss of engine power(total) - non-mechanical	0	.0	.5	2.8	0	.0	.1	2.2
Gear not extended	0	.0	.4	2.2	0	.0	.0	.0
Midair collision	1	6.3	.4	2.2	0	.0	.2	4.4
Loss of engine power(total) - mechanical failure/malfunction	0	.0	.4	2.2	0	.0	.0	.0
Loss of engine power(partial)- mechanical failure/malfunction	1	6.3	.4	2.2	0	.0	.1	2.2
Propeller/rotor contact to person	0	.0	.4	2.2	0	.0	.1	2.2
Undershoot	0	.0	.4	2.2	0	.0	.0	.0
Nose gear collapsed	1	6.3	.3	1.7	0	.0	.0	.0
On ground encounter with terrain	0	.0	.3	1.7	0	.0	.0	.0
Vortex turbulence encountered	0	.0	.3	1.7	0	.0	.1	2.2
Miscellaneous/other	2	12.5	.3	1.7	0	.0	.0	.0
Main gear collapsed	0	.0	.2	1.1	0	.0	.0	.0
Loss of engine power	0	.0	.2	1.1	0	.0	.2	4.4
Loss of engine power(partial) - non-mechanical	0	.0	.2	1.1	0	.0	.0	.0
Not reported	1	6.3	.1	.6	0	.0	.1	2.2
Dragged wing, rotor, pod or float	0	.0	.1	.6	0	.0	.0	.0
Fire	0	.0	.1	.6	0	.0	.0	.0
Explosion	0	.0	.1	.6	0	.0	.0	.0
Complete gear collapsed	0	.0	.1	.6	0	.0	.0	.0
Undetermined	0	.0	.1	.6	0	.0	.0	.0
Gear retraction on ground	0	.0	.1	.6	0	.0	.0	.0
Propeller/failure malfunction	0	.0	.1	.6	0	.0	.1	2.2
Collision between aircraft (other than midair)	0	.0	.1	.6	0	.0	.1	2.2
Wheels up landing	1	6.3	.0	.0	0	.0	.0	.0
Total	16	100.0	18.1	100.0	5	100.0	4.5	100.0

Table 36 - FIRST PHASES OF OPERATION IN ALL ACCIDENTS AND IN FATAL ACCIDENTS
SCHEDULED 14 CFR 135 OPERATIONS
1997 AND 1987 - 1996

	All Accidents				Fatal Accidents			
	1997		1987 - 1996		1997		1987 - 1996	
Phase of operation	No.	Percent	Mean	Percent	No.	Percent	Mean	Percent
Landing	3	18.8	3.5	19.3	0	.0	.1	2.2
Takeoff	3	18.8	2.8	15.5	1	20.0	.4	8.9
Approach	4	25.0	2.8	15.5	1	20.0	1.6	35.6
Taxi	0	.0	2.5	13.8	0	.0	.0	.0
Cruise	1	6.3	1.9	10.5	0	.0	1.1	24.4
Standing	0	.0	1.4	7.7	0	.0	.2	4.4
Descent	2	12.5	1.2	6.6	1	20.0	.2	4.4
Maneuvering	2	12.5	1.1	6.1	2	40.0	.6	13.3
Climb	0	.0	.5	2.8	0	.0	.1	2.2
Not reported	1	6.3	.4	2.2	0	.0	.2	4.4
Total Aircraft	16	100.0	18.1	100.0	5	100.0	4.5	100.0

Table 37 - BROAD CAUSE/FACTOR ASSIGNMENTS IN ALL ACCIDENTS AND IN FATAL ACCIDENTS
SCHEDULED 14 CFR 135 OPERATIONS
1997 AND 1987 - 1996

	All Accidents				Fatal Accidents			
	1997		1987 - 1996		1997		1987 - 1996	
Broad Cause/Factor	No.	Percent	Mean	Percent	No.	Percent	Mean	Percent
Pilot	11	68.8	12.6	69.6	4	80.0	3.5	77.8
Other Person (Not Aboard)	1	6.3	6.5	35.9	0	.0	1.9	42.2
Weather	6	37.5	5.3	29.3	2	40.0	1.8	40.0
Terrain/Runway Condition	3	18.8	4.0	22.1	0	.0	1.2	26.7
Light Conditions	0	.0	2.6	14.4	0	.0	.7	15.6
Propulsion System and Controls	2	12.5	2.0	11.0	1	20.0	.6	13.3
Object (tree,wires,etc)	0	.0	1.4	7.7	0	.0	.1	2.2
Airframe	2	12.5	1.2	6.6	0	.0	.2	4.4
Landing Gear	1	6.3	1.2	6.6	0	.0	.0	.0
Systems/Equipment/ Instruments	0	.0	1.0	5.5	0	.0	.3	6.7
Airport/Airways Facilities, Aids	0	.0	.8	4.4	0	.0	.2	4.4
Flight Control System	0	.0	.4	2.2	0	.0	.2	4.4
Other Person (Aboard)	0	.0	.2	1.1	0	.0	.0	.0
Total Aircraft	16	100.0	18.1	100.0	5	100.0	4.5	100.0
NTSB Determined Probable Cause	14		17.6		4		4.3	

Nonscheduled 14 CFR Part 135 Operations

There were 82 accidents involving nonscheduled 14 CFR Part 135 aircraft (air taxis) in 1997. For the period 1987 through 1996, the average number of accidents per year in this category is 89.8 with an overall accident rate of 4.08 per 100,000 hours flown. The accident rate in 1997 was 3.64 accidents per 100,000 hours flown, an 18 percent decrease from the 1996 rate of 4.44.

There were 15 fatal accidents involving 39 fatalities in 1997. During the period 1987 through 1996, the yearly average was 26.2 fatal accidents and 62.4 fatalities. The fatal accident rate for 1997 was 0.67 per 100,000 hours flown, the lowest in 10 years.

Table 38 - SUMMARY OF LOSSES
NONSCHEDULED 14 CFR 135 OPERATIONS
1987 - 1997

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Accidents											
Fatal	30	28	25	29	28	24	19	26	24	29	15
Serious Injury	9	15	12	14	10	5	8	9	5	11	14
Minor Injury	7	11	14	12	8	9	13	13	7	10	14
No Injury	50	48	59	52	42	38	29	37	39	40	39
Total	96	102	110	107	88	76	69	85	75	90	82
Fatalities											
Passenger	31	22	46	20	42	43	20	40	29	31	22
Crew	32	33	35	29	32	22	22	22	23	32	17
Other Persons	2	4	2	2	4	3	0	1	0	0	0
Total	65	59	83	51	78	68	42	63	52	63	39
Aircraft Damage											
Destroyed	34	37	32	39	32	26	26	24	21	37	23
Substantial	61	63	79	68	53	49	44	60	54	51	58
Minor	4	1	0	1	2	1	0	0	1	0	2
None	0	1	0	1	2	0	0	2	0	3	1
Total	99[a]	102	111[a]	109[a]	89[a]	76	70[a]	86[a]	76[a]	91[a]	84[a]

[a] The number of aircraft damaged is higher than the number of accidents because these accidents included collisions between two aircraft.

Table 39 - ACCIDENT RATES
NONSCHEDULED 14 CFR 135 OPERATIONS
1987 - 1997

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Accident Rates											
Hours Flown [b]	3.61	3.88	3.64	4.76	3.93	3.86	4.16	4.58	4.39	4.44	3.64
Fatal Accident Rates											
Hours Flown [b]	1.13	1.06	0.83	1.29	1.25	1.22	1.15	1.40	1.41	1.43	0.67

[b] Per Hundred Thousand Hours Flown

Table 40 - LIST OF ACCIDENTS
NONSCHEDULED 14 CFR 135 OPERATIONS
1997

Date	Location	Type of Operation	Aircraft Type	Aircraft Damage	Degree of Injury	First Occurrence
01/01	Kansas City, MO	Cargo	Gates Learjet LR35	Substantial	None	Overrun
01/05	Bullhead City, AZ	Passenger	Fairchild SA227-AC	Destroyed	Minor	In flight encounter with weather
01/07	Cascade, ID	Pax and Cargo	Cessna TU-206	Substantial	Serious	In flight collision with terrain
01/13	St. Ignace, MI	Passenger	Piper PA-32-260	Substantial	None	On ground collision with terrain
01/17	Tununak, AK	Cargo	Cessna 207A	Substantial	Serious	In flight encounter with weather
01/27	Tampa, FL	Cargo	Cessna U206D	Substantial	None	Loss of power(total) - mech failure/malfunction
01/29	Sparrevohn, AK	Cargo	Dehavilland DHC-4A	Destroyed	Fatal (1)	Propeller failure/malfunction
02/10	Weston, FL	Cargo	Cessna 210L	Substantial	None	Loss of power
02/14	Covington, KY	Cargo	Cessna 208B	Substantial	None	In flight collision with object
02/20	Chicago, IL	Cargo	Cessna T210N	Destroyed	Fatal (2)	Missing aircraft
02/21	Milolii, HI	Passenger	Hughes HU-369-D	Substantial	Serious	Airframe/component/system failure/malfunction
02/22	Chevak, AK	Cargo	Cessna 207	Substantial	None	In flight encounter with weather
02/22	Honolulu, HI	Cargo	Beech H18	Destroyed	Minor	Loss of control - in flight
02/24	Mtn. Spring, NV	Passenger	Bell 206B	Destroyed	Serious	In flight encounter with weather
02/26	Dillingham, AK	Passenger	Piper PA-32-300	Substantial	None	Overrun
03/04	Jamaica Beach, TX	Passenger	Bell 206L-1	Destroyed	Minor	In flight encounter with weather
03/06	Mabie, WV	Cargo	Beech E-18S	Destroyed	Fatal (2)	Loss of control - in flight
03/06	Nome, AK	Cargo	Beech G-18S	Substantial	None	Propeller failure/malfunction

Table 40 - LIST OF ACCIDENTS (Continued)
NONSCHEDULED 14 CFR 135 OPERATIONS
1997

Date	Location	Type of Operation	Aircraft Type	Aircraft Damage	Degree of Injury	First Occurrence
03/31	Deep Water Cay, Bahamas	Passenger	Cessna 310R	Substantial	None	Not reported
04/03	Troy, AL	Cargo	Cessna 210M	Substantial	None	Loss of power
04/12	Quinhagak, AK	Pax and Cargo	Piper PA-32	Substantial	None	Fire
04/22	Mission, KS	Cargo	Gulfstream 500B	Substantial	Serious	Loss of power(total) - non-mechanical
05/01	Hope, AK	Passenger	Cessna U206F	Substantial	Minor	Loss of power(total) - non-mechanical
05/12	Burbank, CA	Cargo	Piper PA-32R-300	Substantial	None	Airframe/component/system failure/malfunction
05/27	Greeley, CO	Cargo	Piper PA-31-350	Substantial	None	Airframe/component/system failure/malfunction
05/27	Tinian, Saipan	Passenger	Piper PA-32-300	Substantial	None	Loss of control - on ground
06/01	Atlin, Canada	Passenger	Cessna 206	Destroyed	Minor	In flight collision with terrain
06/01	Rawlins, WY	Cargo	Cessna 402C	Substantial	Serious	In flight collision with terrain
06/04	Lake Powell, UT	Passenger	Cessna 177B	Substantial	Minor	Loss of power
06/12	Weston, CO	Passenger	Bell 206L-3	Substantial	None	In flight encounter with weather
07/03	Skagway, AK	Passenger	Piper PA-32	Destroyed	Fatal (4)	Loss of power(total) - mech failure/malfunction
07/04	Austin, TX	Passenger	Piper PA-31T	Substantial	None	Wheels up landing
07/05	Skwentna, AK	Pax and Cargo	Dehavilland DHC-2	Substantial	Fatal (4)	Loss of power(partial) - mech failure/malfunction

Table 40 - LIST OF ACCIDENTS (Continued)
NONSCHEDULED 14 CFR 135 OPERATIONS
1997

Date	Location	Type of Operation	Aircraft Type	Aircraft Damage	Degree of Injury	First Occurrence
07/08	Cantwell, AK	Passenger	Piper PA-18-160	Substantial	Minor	In flight encounter with weather
07/08	Dallas, TX	Cargo	Aero Commander 500-B	Substantial	Serious	Loss of power(partial) - mech failure/malfunction
07/16	Gakona, AK	Passenger	Piper PA-18	Substantial	Minor	Main gear collapsed
07/23	Talkeetna, AK	Passenger	Cessna 185	Substantial	None	In flight collision with terrain
07/26	Pollock Pines, CA	Passenger	Bell 206B	None	Serious	Propeller/rotor contact
08/09	Chickaloon, AK	Passenger	Cessna 185	Substantial	None	Main gear collapsed
08/13	Lexington, KY	Cargo	Dassault DA-20	Substantial	None	Undershoot
08/13	Seattle, WA	Cargo	Beech 1900C	Destroyed	Serious	Hard landing
08/19	Karluk, AK	Passenger	Cessna 185	Substantial	Minor	On ground collision with terrain
08/19	Des Moines, IA	Cargo	Swearingen SA226TC	Substantial	Minor	Airframe/component/system failure/malfunction
08/20	Dillingham, AK	Pax and Cargo	Bell BH-206B	Destroyed	Fatal (1)	In flight encounter with weather
08/20	Hayden, CO	Cargo	Piper PA-31-350	Substantial	None	On ground collision with object
08/23	Fort Yukon, AK	Passenger	Helio H-295	Substantial	None	Loss of control - on ground
08/23	Brownsville, TN	Cargo	Beech 95-B55	Destroyed	Fatal (1)	Loss of power(total) - non-mechanical
08/24	Bethel, AK	Passenger	Piper PA-32-300	Substantial	Serious	Loss of power(total) - non-mechanical
08/31	Albuquerque, NM	Passenger	Beech E90	Substantial	None	Main gear collapsed

Table 40 - LIST OF ACCIDENTS (Continued)
NONSCHEDULED 14 CFR 135 OPERATIONS
1997

Date	Location	Type of Operation	Aircraft Type	Aircraft Damage	Degree of Injury	First Occurrence
09/01	McGrath, AK	Passenger	Cessna U206E	Substantial	Serious	Hard landing
09/01	King Salmon, AK	Passenger	Cessna U206F	Destroyed	Minor	On ground collision with terrain
09/06	Bethel, AK	Passenger	Cessna 207A	Substantial	None	In flight encounter with weather
09/06	Stanley, ID	Cargo	Cessna U206F	Substantial	None	On ground collision with terrain
09/08	Buckland, AK	Passenger Passenger	Cessna 402C Cessna 208B	Substantial Substantial	None None	Collision between aircraft (other than midair)
09/12	Brinkley, AR	Passenger	Hughes MDL-369HS	Substantial	None	In flight collision with object
09/18	Fourchon, LA	Passenger	Bell 407	Substantial	Minor	Airframe/component/system failure/malfunction
09/26	Twin Hills, AK	Cargo	Cessna 207A	Destroyed	Fatal (1)	In flight collision with terrain
09/28	Mora, NM	Passenger	Beech 58	Destroyed	Serious	Loss of power(partial) - non-mechanical
09/29	Albuquerque, NM	Cargo	Cessna 210L	Substantial	None	Gear collapsed
10/06	Crosbyton, TX	Cargo	Beech G18S	Substantial	Serious	Loss of power
10/08	Montrose, CO	Pax and Cargo	Cessna 208B	Destroyed	Fatal (9)	In flight encounter with weather
10/12	Sago, WV	Passenger	Bell 206B	Destroyed	Fatal (4)	Loss of power
10/20	Scottsville, VA	Passenger	Piper PA-32RT-300S	Substantial	None	Loss of power(total) - mech failure/malfunction
10/23	Juneau, AK	Pax and Cargo	Piper PA-32-300	Destroyed	Fatal (2)	In flight encounter with weather
10/28	Norfolk, VA	Passenger	Beech B200	None	Serious	Miscellaneous/other (passenger injured)
10/29	Sheboygan, WI	Passenger	Learjet 35A	Substantial	None	On ground collision with object

Table 40 - LIST OF ACCIDENTS (Continued)
NONSCHEDULED 14 CFR 135 OPERATIONS
1997

Date	Location	Type of Operation	Aircraft Type	Aircraft Damage	Degree of Injury	First Occurrence
10/31	Barrow, AK	Passenger	Cessna 185F	Substantial	None	On ground collision with terrain
10/31	Santa Rosa, CA	Cargo	Piper PA-32R-300	Substantial	None	Loss of power
11/02	Ft. Lauderdale, FL	Passenger	Cessna 402B	Destroyed	None	Loss of power(total) - non-mechanical
11/06	Myton, UT	Cargo	Piper PA-34-200T	Destroyed	Fatal (1)	Airframe/component/system failure/malfunction
11/11	Tyonek, AK	Passenger	Piper PA-31-T3	Substantial	None	On ground collision with object
11/13	Wheeling, WV	Passenger	Beech 65-A90	Substantial	None	Hard landing
11/29	Spencer, IA	Cargo	Cessna 402B	Substantial	None	In flight collision with terrain
12/04	Walker Cay, Bahamas	Passenger	Piper PA-31-350	Substantial	Minor	On ground collision with terrain
12/08	Milwaukee, WI	Cargo	Cessna 402A	Substantial	None	Loss of power(total) - non-mechanical
12/14	Littleton, CO	Passenger	Bell 407	Destroyed	Fatal (4)	In flight collision with object
12/15	Alakanuk, AK	Cargo	Cessna 207	Substantial	None	Loss of power(partial) - non-mechanical
12/21	Co. Springs, CO	Passenger	Beech A100	Destroyed	Fatal (2)	In flight collision with terrain
12/29	DFW Airport, TX	Cargo Cargo	Beech E18S Beech E18S	Minor Substantial	None None	Collision between aircraft (other than midair)
12/30	Watertown, SD	Cargo	Cessna 402B	Destroyed	Fatal (1)	Loss of control - in flight

Table 41 - PERSONS BY ROLE AND DEGREE OF INJURY
NONSCHEDULED 14 CFR 135 OPERATIONS
1997

Role of Person	Degree of Injury: Fatal	Serious	Minor	None	Total
Pilot	13	11	11	49	84
Copilot	2	0	1	7	10
Other crew	2	0	1	2	5
Passenger	22	11	18	123	174
Total aboard	39	22	31	181	273
Other ground	0	1	0	1	2
Grand total	39	23	31	182	275
Percent	14.2	8.4	11.3	66.2	

Table 42 - AIRCRAFT BY DAMAGE AND DEGREE OF INJURY
NONSCHEDULED 14 CFR 135 OPERATIONS
1997

Aircraft damage	Degree of injury: None	Minor	Serious	Fatal	Aircraft: No.	Percent
None	0	0	2	0	2	2.4
Minor	1	0	0	0	1	1.2
Substantial	39	9	9	1	58	69.0
Destroyed	1	5	3	14	23	27.4
Aircraft Number -	41	14	14	15	84	
Percent -	48.8	16.7	16.7	17.9		

Table 43 - AIRCRAFT BY FIRST OCCURRENCE AND DEGREE OF INJURY AND BY DAMAGE
NONSCHEDULED14 CFR 135 OPERATIONS
1997

Type of first occurrence	Degree of injury				Aircraft damage				Aircraft	
	None	Minor	Serious	Fatal	None	Minor	Substantial	Destroy	No.	Percent
Airframe/component/system failure/malfunction	2	2	1	1	0	0	5	1	6	7.1
Propeller failure/malfunction	1	0	0	1	0	0	1	1	2	2.4
Fire	1	0	0	0	0	0	1	0	1	1.2
Gear collapsed	1	0	0	0	0	0	1	0	1	1.2
Main gear collapsed	2	1	0	0	0	0	3	0	3	3.6
Hard landing	1	0	2	0	0	0	2	1	3	3.6
In flight collision with object	2	0	0	1	0	0	2	1	3	3.6
In flight collision with terrain	2	1	2	2	0	0	4	3	7	8.3
Wheels up landing	1	0	0	0	0	0	1	0	1	1.2
In flight encounter with weather	3	3	2	3	0	0	5	6	11	13.1
Loss of control - in flight	0	1	0	2	0	0	0	3	3	3.6
Loss of control - on ground	2	0	0	0	0	0	2	0	2	2.4
Collision between aircraft (other than midair)	4	0	0	0	0	1	3	0	4	4.8
On ground collision with object	3	0	0	0	0	0	3	0	3	3.6
On ground collision with terrain	3	3	0	0	0	0	5	1	6	7.1
Overrun	2	1	0	0	0	0	3	0	3	3.6
Loss of engine power	3	1	1	1	0	0	5	1	6	7.1
Loss of engine power(total) - mechanical failure/malfunction	2	0	0	1	0	0	2	1	3	3.6
Loss of engine power(partial) - mechanical failure/malfunction	0	0	1	1	0	0	2	0	2	2.4
Loss of engine power(total) - non-mechanical	3	1	2	1	0	0	5	2	7	8.3
Loss of engine power(partial) - non-mechanical	1	0	1	0	0	0	1	1	2	2.4
Propeller/rotor contact to person	0	0	1	0	1	0	0	0	1	1.2
Undershoot	1	0	0	0	0	0	1	0	1	1.2
Missing aircraft	0	0	0	1	0	0	0	1	1	1.2
Miscellaneous/other	0	0	1	0	1	0	0	0	1	1.2
Not reported	1	0	0	0	0	0	1	0	1	1.2
Aircraft										
Number -	41	14	14	15	2	1	58	23	84	
Percent -	48.8	16.7	16.7	17.9	2.4	1.2	69.0	27.4		

Table 44 - AIRCRAFT BY FIRST OCCURRENCE AND BROAD PHASE OF OPERATION
NONSCHEDULED 14 CFR 135 OPERATIONS
1997

Type of first occurrence	Phase of operation										Aircraft	
	Stndg	Taxi	Tkoff	Climb	Cruis	Aprch	Dscnt	Landg	Manvr	Nrept	No.	Percent
Airframe/component/system failure/malfunction	0	0	0	1	4	1	0	0	0	0	6	7.1
Propeller failure/ malfunction	0	0	0	0	2	0	0	0	0	0	2	2.4
Fire	0	0	0	1	0	0	0	0	0	0	1	1.2
Gear collapsed	0	0	0	0	0	0	0	1	0	0	1	1.2
Main gear collapsed	0	0	0	0	0	0	0	3	0	0	3	3.6
Hard landing	0	0	0	0	0	0	0	3	0	0	3	3.6
In flight collision w/obj.	0	0	1	0	1	1	0	0	0	0	3	3.6
In flight collision w/ter.	0	0	2	0	0	2	0	0	3	0	7	8.3
Wheels up landing	0	0	0	0	0	0	0	1	0	0	1	1.2
In flight encounter w/wx.	0	0	1	2	4	2	0	0	2	0	11	13.1
Loss of control - in flight	0	0	2	0	1	0	0	0	0	0	3	3.6
Loss of control - on ground	0	0	2	0	0	0	0	0	0	0	2	2.4
Collision between aircraft (other than midair)	2	2	0	0	0	0	0	0	0	0	4	4.8
On ground collision w/obj.	0	1	2	0	0	0	0	0	0	0	3	3.6
On ground collision w/ter.	0	0	3	0	0	0	0	3	0	0	6	7.1
Overrun	0	0	1	0	0	0	0	2	0	0	3	3.6
Loss of power	0	0	0	0	4	1	0	0	1	0	6	7.1
Loss of power (total) - mech. failure/malfunction	0	0	1	0	1	1	0	0	0	0	3	3.6
Loss of power (partial) - mech. failure/malfunction	0	0	0	1	1	0	0	0	0	0	2	2.4
Loss of power (total) - non-mechanical	0	0	0	1	1	3	2	0	0	0	7	8.3
Loss of power (partial) - non	0	0	0	1	0	1	0	0	0	0	2	2.4
Propeller/rotor contact to person	1	0	0	0	0	0	0	0	0	0	1	1.2
Undershoot	0	0	0	0	0	1	0	0	0	0	1	1.2
Missing aircraft	0	0	0	0	0	0	1	0	0	0	1	1.2
Miscellaneous/other	1	0	0	0	0	0	0	0	0	0	1	1.2
Not reported	0	0	0	0	0	0	0	0	0	1	1	1.2
Aircraft												
Number -	4	3	15	7	19	13	3	13	6	1	84	
Percent -	4.8	3.6	17.9	8.3	22.6	15.5	3.6	15.5	7.1	1.2		

Table 45 - AIRCRAFT BY PHASE OF OPERATION AND DEGREE OF INJURY AND BY DAMAGE
NONSCHEDULED 14 CFR 135 OPERATIONS
1997

Phase of operation	Degree of injury				Aircraft damage				Aircraft	
	None	Minor	Serious	Fatal	None	Minor	Substantial	Destroy	No.	Percent
Standing - engines operating	1	0	0	0	0	0	1	0	1	1.2
Standing - engines not operating	1	0	1	0	1	0	1	0	2	2.4
Standing - idling rotors	0	0	1	0	1	0	0	0	1	1.2
Taxi	1	0	0	0	0	0	1	0	1	1.2
Taxi - to takeoff	1	0	0	0	0	0	1	0	1	1.2
Taxi - from landing	1	0	0	0	0	1	0	0	1	1.2
Takeoff	1	0	0	0	0	0	1	0	1	1.2
Takeoff - roll/run	5	1	0	0	0	0	5	1	6	7.1
Takeoff - initial climb	3	1	1	2	0	0	4	3	7	8.3
Takeoff - aborted	1	0	0	0	0	0	1	0	1	1.2
Climb	2	0	1	1	0	0	3	1	4	4.8
Climb - to cruise	0	1	2	0	0	0	2	1	3	3.6
Descent	0	1	0	1	0	0	1	1	2	2.4
Descent - normal	1	0	0	0	0	0	1	0	1	1.2
Cruise	4	4	3	3	0	0	9	5	14	16.7
Cruise - normal	2	0	0	3	0	0	3	2	5	6.0
Approach	4	1	1	1	0	0	5	2	7	8.3
Approach - VFR pattern - final approach	1	0	1	0	0	0	1	1	2	2.4
Approach - FAF/outer marker to threshold (IFR)	3	0	0	0	0	0	3	0	3	3.6
Missed approach	0	0	0	1	0	0	0	1	1	1.2
Landing	1	0	0	0	0	0	1	0	1	1.2
Landing - flare/touchdown	1	1	2	0	0	0	3	1	4	4.8
Landing - roll	4	3	0	0	0	0	7	0	7	8.3
Emergency landing after takeoff	1	0	0	0	0	0	1	0	1	1.2
Maneuvering	1	1	1	2	0	0	2	3	5	6.0
Maneuvering - turn to reverse direction	0	0	0	1	0	0	0	1	1	1.2
Not reported	1	0	0	0	0	0	1	0	1	1.2
Aircraft										
Number -	41	14	14	15	2	1	58	23	84	
Percent -	48.8	16.7	16.7	17.9	2.4	1.2	69.0	27.4		

Table 46 - AIRCRAFT BY CONDITION OF LIGHT AND TYPE OF WEATHER
NONSCHEDULED 14 CFR 135 OPERATIONS
1997

Condition of light	Type of weather		Aircraft	
	VMC	IMC	No.	Percent
Daylight	45	9	54	64.3
Night (dark)	13	8	21	25.0
Night (bright)	2	0	2	2.4
Dusk	2	1	3	3.6
Not reported	3	1	4	4.8
Aircraft				
Number -	65	19	84	
Percent -	77.4	22.6		

Table 47 - AIRCRAFT BY TYPE OF OPERATION AND DEGREE OF INJURY
NONSCHEDULED 14 CFR 135 OPERATIONS
1997

Type of Operation	Degree of Injury				Aircraft	
	None	Minor	Serious	Fatal	No.	Percent
Domestic Passenger	17	10	7	4	38	45.2
Domestic Cargo	20	2	6	7	35	41.7
Domestic Pax/Cargo	1	0	1	4	6	7.1
International Passenger	3	2	0	0	5	6.0
Aircraft						
Number -	41	14	14	15	84	
Percent -	48.8	16.7	16.7	17.9		

Table 48 - AIRCRAFT BY PROXIMITY TO AIRPORT AND FLIGHT PLAN
NONSCHEDULED 14 CFR 135 OPERATIONS
1997

Accident location	Flight plan					Aircraft	
	None	VFR	IFR	VFR/ IFR	Cmpny VFR	No.	Percent
Off airport/airstrip	5	8	8	1	23	45	53.6
On airport	2	3	15	0	7	27	32.1
On airstrip	1	0	0	0	5	6	7.1
Not reported	1	1	2	0	2	6	7.1
Aircraft							
Number -	9	12	25	1	37	84	
Percent -	10.7	14.3	29.8	1.2	44.0		

Table 49 - AIRCRAFT BY OCCURRENCE OF FIRE AND DEGREE OF INJURY AND BY DAMAGE
NONSCHEDULED 14 CFR 135 OPERATIONS
1997

	Degree of injury				Aircraft damage				Aircraft	
Aircraft fire	None	Minor	Serious	Fatal	None	Minor	Substantial	Destroy	No.	Percent
None	39	13	11	12	2	1	56	16	75	89.3
In-flight	1	0	0	0	0	0	1	0	1	1.2
On ground	1	1	3	3	0	0	1	7	8	9.5
Aircraft										
Number -	41	14	14	15	2	1	58	23	84	
Percent -	48.8	16.7	16.7	17.9	2.4	1.2	69.0	27.4		

Table 50 - AIRCRAFT BY TYPE OF AIRCRAFT AND DEGREE OF INJURY AND BY DAMAGE
NONSCHEDULED 14 CFR 135 OPERATIONS
1997

	Degree of injury				Aircraft damage				Aircraft	
Type of aircraft	None	Minor	Serious	Fatal	None	Minor	Substantial	Destroy	No.	Percent
All Fixed Wing *	39	12	11	12	1	1	54	18	74	88.1
Single reciprocating engine	19	8	4	5	0	0	30	6	36	42.9
Mutiple reciprocating engine	11	2	5	5	0	1	14	8	23	27.4
Turboprop	6	2	2	2	1	0	7	4	12	14.3
Turbojet	3	0	0	0	0	0	3	0	3	3.6
All Rotorcraft *	2	2	3	3	1	0	4	5	10	11.9
Turbine Engine	2	2	3	3	1	0	4	5	10	11.9
Aircraft										
Number -	41	14	14	15	2	1	58	23	84	
Percent -	48.8	16.7	16.7	17.9	2.4	1.2	69.0	27.4		

* Not included in column totals

Table 51 - BROAD CAUSE/FACTOR ASSIGNMENTS*
NONSCHEDULED 14 CFR 135 OPERATIONS
1997

Cause/Factor	Cited as a Cause		Cited as a Factor		Cited as Either a Cause or a Factor (or Both)	
	Fatal Accidents	All Accidents	Fatal Accidents	All Accidents	Fatal Accidents	All Accidents
Aircraft #	**6**	**25**	**4**	**10**	**8**	**32**
Propulsion System and Controls	5	20	0	3	5	23
Flight Control System	1	1	0	0	1	1
Airframe	1	1	0	0	1	1
Landing Gear	0	4	0	0	0	4
Systems/Equipment/ Instruments	1	2	3	4	3	5
Environment #	**0**	**3**	**12**	**45**	**12**	**46**
Weather	0	0	7	24	7	24
Light Conditions	0	0	3	11	3	11
Object(trees,wires,etc.)	0	2	0	4	0	6
Airport/Airways Facilities, Aids	0	0	0	2	0	2
Terrain/Runway Condition	0	1	6	26	6	27
Personnel #	**11**	**60**	**8**	**27**	**13**	**63**
Pilot	10	52	8	23	12	57
Others (Aboard)	0	2	2	3	2	5
Others (Not Aboard)	1	7	3	8	4	14
Number of Aircraft					15	84
NTSB Determined Probable Cause					15	80

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* Multiple causes and factors may be assigned in an accident.

\# This category is composed of the sub-categories indented below it. The number of aircraft cited in a category may be less than or equal to the sum of the sub-category citations.

Table 52 - ACCIDENTS, FATAL ACCIDENTS, FATALITIES, AND RATES
NONSCHEDULED 14 CFR 135 OPERATIONS
1987 - 1997

Year	Accidents	Fatal Accidents	Fatalities		Hours Flown	Accident Rate per 100,000* Aircraft Hours Flown	
			Total	Aboard Aircraft In This Category		Total	Fatal
1987	96	30	65	63	2,657,000	3.613	1.129
1988	102	28	59	55	2,632,000	3.875	1.064
1989	110	25	83	81	3,020,000	3.642	0.828
1990	107	29	51	49	2,249,000	4.758	1.289
1991	88	28	78	74	2,241,000	3.927	1.249
1992	76	24	68	65	1,967,000	3.864	1.220
1993	69	19	42	42	1,659,000	4.159	1.145
1994	85	26	63	62	1,854,000	4.585	1.402
1995	75	24	52	52	1,707,000	4.394	1.406
1996	90	29	63	63	2,029,000	4.436	1.429
1997	82	15	39	39	2,250,000	3.644	0.667

Figure 13 - ACCIDENTS AND FATAL ACCIDENTS NONSCHEDULED 14 CFR 135 OPERATIONS

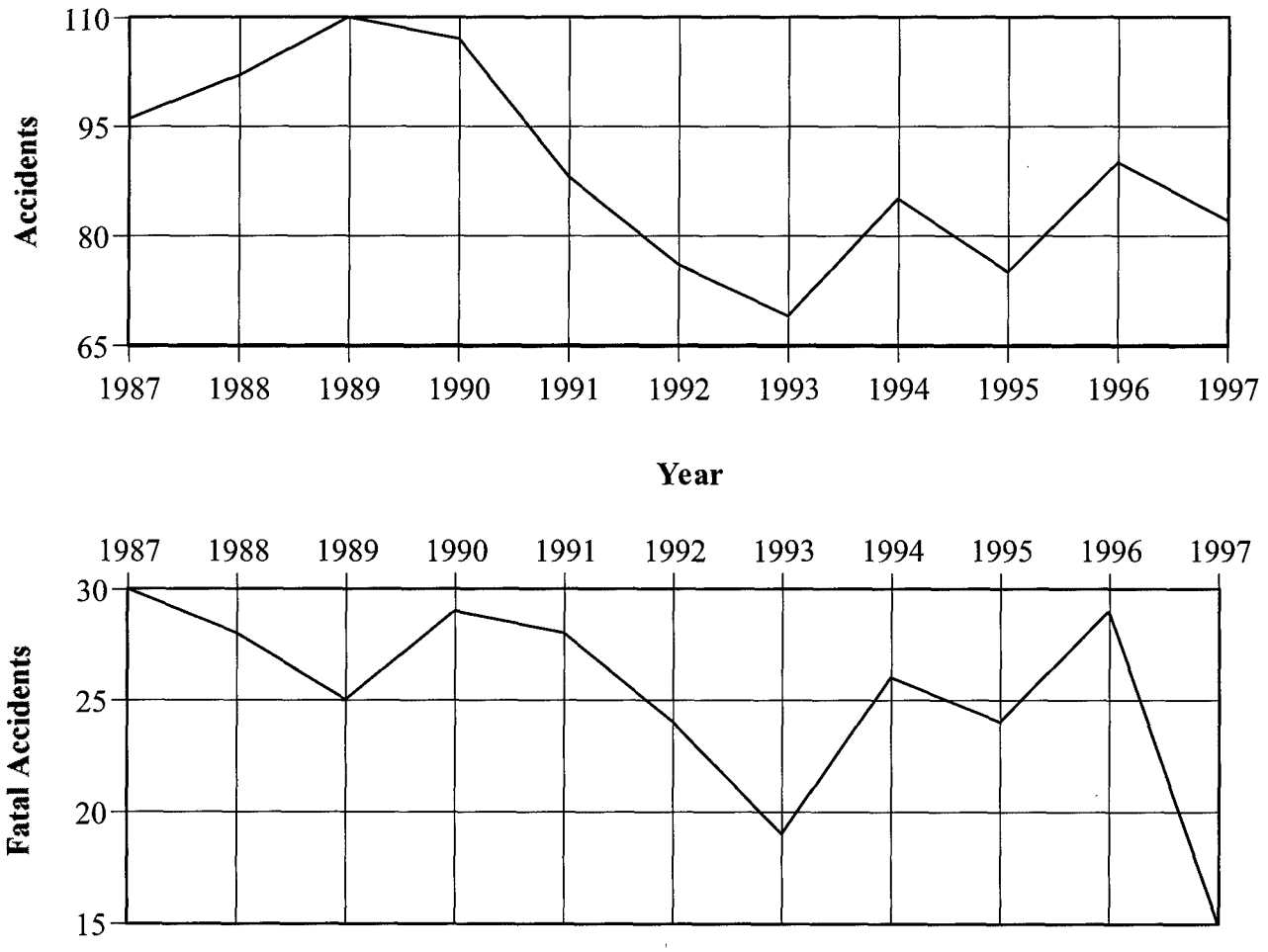


Figure 14 - NUMBER OF FATALITIES
NONSCHEDULED 14 CFR 135 OPERATIONS

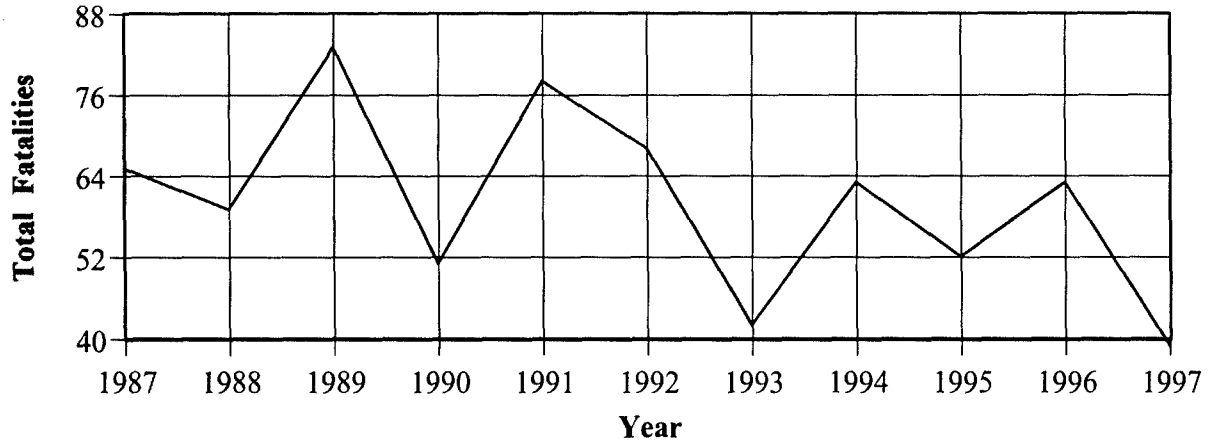
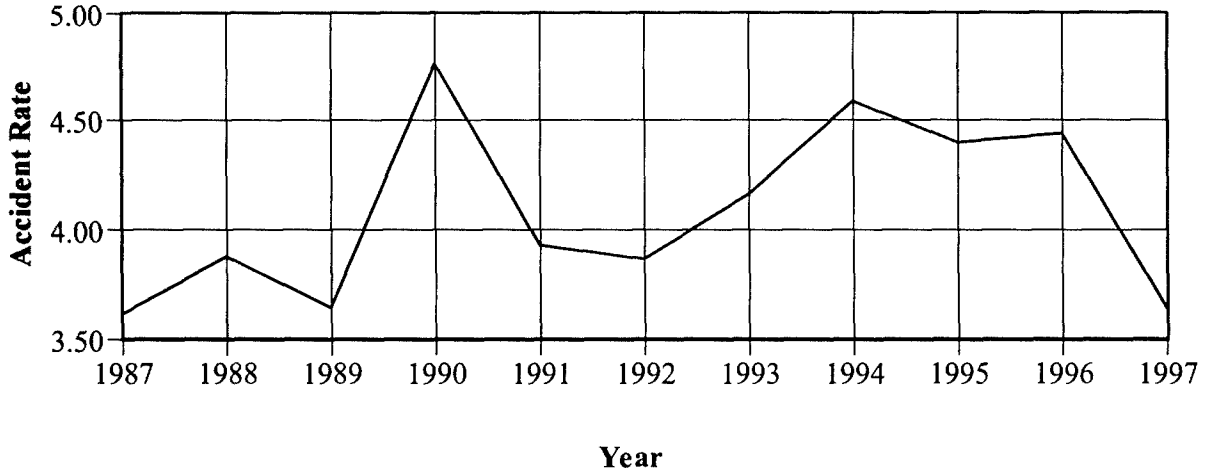


Figure 15 - ACCIDENT RATE PER 100,000 HOURS FLOWN
NONSCHEDULED 14 CFR 135 OPERATIONS



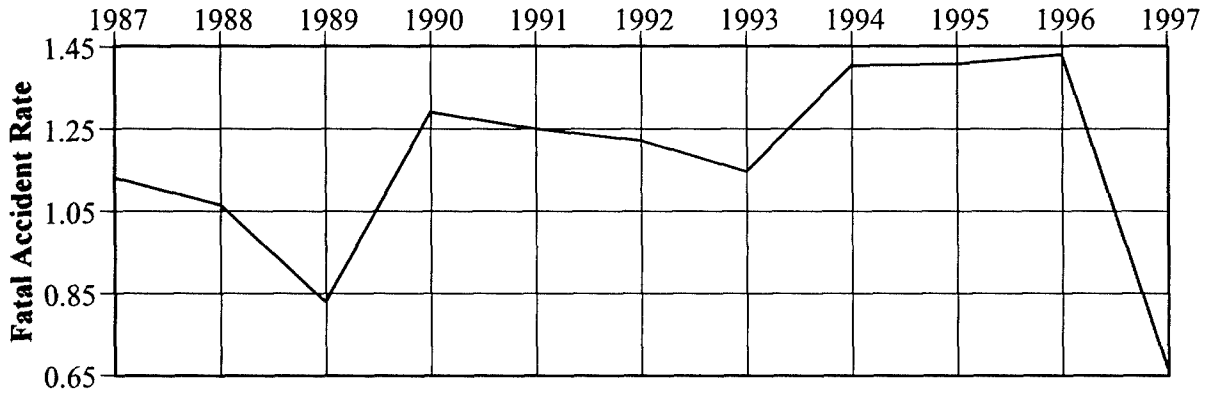


Table 53 - FIRST OCCURRENCES IN ALL ACCIDENTS AND IN FATAL ACCIDENTS
NONSCHEDULED 14 CFR 135 OPERATIONS
1997 AND 1987 - 1996

	All Accidents				Fatal Accidents			
	1997		1987 - 1996		1997		1987 - 1996	
Type of Occurrence	No.	Percent	Mean	Percent	No.	Percent	Mean	Percent
In flight collision with terrain	7	8.3	9.3	10.2	2	13.3	5.8	22.1
Loss of control - in flight	3	3.6	8.2	9.0	2	13.3	4.5	17.1
Loss of engine power(total) - mechanical failure/malfunction	3	3.6	7.3	8.0	1	6.7	1.6	6.1
Airframe/component/system failure/ malfunction	6	7.1	6.9	7.6	1	6.7	2.5	9.5
In flight encounter with weather	11	13.1	6.8	7.5	3	20.0	3.5	13.3
Loss of control - on ground	2	2.4	6.8	7.5	0	.0	.0	.0
Loss of engine power(total) - non-mechanical	7	8.3	5.1	5.6	1	6.7	.6	2.3
In flight collision with object	3	3.6	5.0	5.5	1	6.7	2.0	7.6
On ground collision with object	3	3.6	4.4	4.8	0	.0	.0	.0
Loss of engine power	6	7.1	4.0	4.4	1	6.7	.9	3.4
On ground collision with terrain	6	7.1	2.9	3.2	0	.0	.0	.0
Overrun	3	3.6	2.9	3.2	0	.0	.1	.4
Loss of engine power(partial) - mechanical failure/malfunction	2	2.4	2.3	2.5	1	6.7	.6	2.3
Hard landing	3	3.6	1.7	1.9	0	.0	.0	.0
Midair collision	0	.0	1.5	1.7	0	.0	.8	3.0
Loss of engine power(partial) - non-mechanical	2	2.4	1.5	1.7	0	.0	.5	1.9
Not reported	1	1.2	1.4	1.5	0	.0	.3	1.1
Main gear collapsed	3	3.6	1.4	1.5	0	.0	.0	.0
Fire	1	1.2	1.1	1.2	0	.0	.7	2.7
Miscellaneous/other	1	1.2	1.1	1.2	0	.0	.6	2.3
Undershoot	1	1.2	1.0	1.1	0	.0	.0	.0
Gear not extended	0	0.0	0.8	0.9	0	.0	.0	.0
Dragged wing, rotor, pod, or float	0	0.0	0.7	0.8	0	.0	.1	.4
Nose gear collapsed	0	.0	0.7	0.8	0	.0	.0	.0
Roll over	0	0.0	0.7	0.8	0	.0	.0	.0
Nose over	0	0.0	0.6	0.7	0	.0	.0	.0
Collision between aircraft (other than midair)	4	4.8	0.6	0.7	0	.0	.0	.0
Altitude deviation,uncontrolled	0	0.0	0.5	0.6	0	.0	.1	.4
Propeller/rotor contact to person	1	1.2	0.5	0.6	0	.0	.2	.8
Gear collapsed	1	1.2	0.4	0.4	0	.0	.0	.0
Abrupt maneuver	0	0.0	0.3	0.3	0	.0	.2	.8
Missing aircraft	1	1.2	0.3	0.3	1	6.7	.3	1.1
Wheels up landing	1	1.2	0.3	0.3	0	.0	.0	.0
Fire/explosion	0	0.0	0.2	0.2	0	.0	.0	.0
Forced landing	0	0.0	0.2	0.2	0	.0	.0	.0
Gear not retracted	0	0.0	0.2	0.2	0	.0	.0	.0
Propeller blast or jet exhaust/suction	0	0.0	0.2	0.2	0	.0	.0	.0
Undetermined	0	0.0	0.2	0.2	0	.0	.2	.8
Rotor failure/malfunction	0	0.0	0.2	0.2	0	.0	.0	.0
Cargo shift	0	0.0	0.1	0.1	0	.0	.1	.4
Explosion	0	0.0	0.1	0.1	0	.0	.0	.0
Hazardous materials leak/spill	0	0.0	0.1	0.1	0	.0	.0	.0
Nose down	0	0.0	0.1	0.1	0	.0	.0	.0
On ground encounter with weather	0	0.0	0.1	0.1	0	.0	.0	.0
Vortex turbulence encountered	0	0.0	0.1	0.1	0	.0	.1	.4
Propeller failure/malfunction	2	2.4	0.1	0.1	1	6.7	.0	.0
Total	84	100.0	90.9	100.0	15	100.0	26.3	100.0

Table 54 - FIRST PHASES OF OPERATION IN ALL ACCIDENTS AND IN FATAL ACCIDENTS
NONSCHEDULED 14 CFR 135 OPERATIONS
1997 AND 1987 - 1996

	All Accidents				Fatal Accidents			
	1997		1987 - 1996		1997		1987 - 1996	
Phase of operation	No.	Percent	Mean	Percent	No.	Percent	Mean	Percent
Cruise	19	22.6	20.4	22.4	6	40.0	8.5	32.3
Takeoff	15	17.9	19.3	21.2	2	13.3	4.4	16.7
Landing	13	15.5	16.5	18.2	0	.0	.6	2.3
Approach	13	15.5	12.6	13.9	2	13.3	5.6	21.3
Maneuvering	6	7.1	7.1	7.8	3	20.0	3.2	12.2
Taxi	3	3.6	4.8	5.3	0	.0	.0	.0
Climb	7	8.3	3.6	4.0	1	6.7	1.4	5.3
Descent	3	3.6	2.5	2.8	1	6.7	1.2	4.6
Standing	4	4.8	2.2	2.4	0	.0	.6	2.3
Not reported	1	1.2	1.9	2.1	0	.0	.8	3.0
Total Aircraft	84	100.0	90.7	100.0	15	100.0	26.3	100.0

Table 55 - BROAD CAUSE/FACTOR ASSIGNMENTS IN ALL ACCIDENTS AND IN FATAL ACCIDENTS
NONSCHEDULED 14 CFR 135 OPERATIONS
1997 AND 1987 - 1996

	All Accidents				Fatal Accidents			
	1997		1987 - 1996		1997		1987 - 1996	
Broad Cause/Factor	No.	Percent	Mean	Percent	No.	Percent	Mean	Percent
Pilot	57	67.9	66.8	73.5	12	80.0	21.1	80.2
Weather	24	28.6	28.3	31.1	7	46.7	11.1	42.2
Terrain/Runway Condition	27	32.1	26.3	28.9	6	40.0	6.2	23.6
Propulsion System and Controls	23	27.4	19.0	20.9	5	33.3	4.7	17.9
Other Person (Not Aboard)	14	16.7	16.4	18.0	4	26.7	5.3	20.2
Light Conditions	11	13.1	12.1	13.3	3	20.0	5.8	22.1
Object (tree,wires,etc)	6	7.1	7.6	8.4	0	.0	2.0	7.6
Systems/Equipment/ Instruments	5	6.0	7.5	8.3	3	20.0	1.9	7.2
Landing Gear	4	4.8	5.8	6.4	0	.0	.2	.8
Airframe	1	1.2	2.9	3.2	1	6.7	.9	3.4
Flight Control System	1	1.2	1.8	2.0	1	6.7	.8	3.0
Airport/Airways Facilities, Aids	2	2.4	1.4	1.5	0	.0	.1	.4
Other Person (Aboard)	5	6.0	.5	.6	2	13.3	.3	1.1
Total Aircraft	84	100.0	90.9	100.0	15	100.0	26.3	100.0
NTSB Determined Probable Cause	80		89.0		15		25.7	

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Adopted: January 24, 2002

Appendix A

Midair Collision Accidents
U.S. Air Carrier Operations
1987 - 1997

APPENDIX A
MIDAIR COLLISION ACCIDENTS
U.S. AIR CARRIER OPERATIONS
1987 - 1997

Year	Accidents		Total Fatalities	Number of Accidents by Segements of Aviation Involved			
	Total	Fatal		S135 and GA	N135 and N135	N135 and GA	S121 and Forgn
1987	5	2	12	3	0	2	0
1988	2	1	4	0	0	2	0
1989	1	1	2	0	0	1	0
1990	3	2	5	1	1	1	0
1991	2	2	9	0	1	1	0
1992	2	1	3	0	0	2	0
1993	1	0	0	0	0	0	1
1994	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0
1996	1	0	0	0	1	0	0
1997	1	0	0	1	0	0	0
	18	9	35	5	3	9	1

NOTE: S135 = Scheduled 14 CFR 135 Operation
N135 = Nonscheduled 14 CFR 135 Operation
S121 = Scheduled 14 CFR 121 Operation
Forgn = Foreign Registered Aircraft Operation
GA = General Aviation

Appendix B

Explanatory Notes

APPENDIX B -- EXPLANATORY NOTES

AIRCRAFT ACCIDENT: The accidents included herein are the occurrences incident to flight in which, as a result of the operation of an aircraft, any person (occupant or nonoccupant) receives fatal or serious injury or any aircraft receives substantial damage. The definition of substantial damage is:

> Substantial damage means damage or failure which adversely affects the structural strength, performance, or flight characteristics of the aircraft, and which would normally require major repair or replacement of the affected component. Engine failure or damage limited to an engine if only one engine fails or is damaged, bent fairings or cowling, dented skin, small punctured holes in the skin of fabric, ground damage to rotor or propeller blades, and damage to landing gear, wheels, tires, flaps, engine accessories, brakes, or wingtips are not considered "substantial damage."

AIRCRAFT-MILES: The distance flown by aircraft in terms of great circle airport-to-airport distances measured in statute miles.

CAUSES AND RELATED FACTORS: In determining probable cause(s) of an accident, all facts, conditions, and circumstances are considered. The objective is to ascertain those cause and effect relationships in the accident sequence about which something can be done to prevent recurrence of the type of accident under consideration. Accordingly, for statistical purposes, where there are two or more causes of an accident, each is recorded and no attempt is made to establish a primary cause. Therefore, in the cause and related factor table, the figures shown in the columns dealing with cause will exceed the total number of accidents. The term "factor" is used, in general, to denote those elements of an accident that further explain or supplement the probable cause(s); this provides a means for collecting essential items of information that could not be readily categorized elsewhere in the system.

COLLISION BETWEEN AIRCRAFT: Collisions between aircraft are so classified only when both aircraft are occupied. This includes collisions wherein both aircraft are airborne (midair); one is airborne, the other on the ground; and both are on the ground. A collision with a parked, unoccupied aircraft is classified under the broad category of collision with objects.

FATAL INJURY: Any injury which results in death within 30 days of the accident.

INJURY INDEX: Injury index refers to the highest degree of personal injury sustained as a result of the accident.

NONSCHEDULED SERVICE: Revenue flights that are not operated in regular scheduled service, such as charter flights, and all nonrevenue flights incident to such flights.

PASSENGER-MILES: One passenger transported 1 mile. Passenger miles are computed by the summation of the products of the aircraft-miles flown on each inter-airport flight multiplied by the number of passengers carried on the flight.

PERSONNEL (NON-PILOT): As defined for the Broad Cause/Factor tables may include any of the following personnel:

Rules, Regulations, Standards Personnel
Maintenance, Servicing, Inspection Personnel
Weather Service Personnel
Airport Management
Production-Design Personnel
Ground Signalman
Passenger
Driver of Vehicle
Flight Engineer
Radio Operator
Other Flight Personnel
Flight Instructor on Ground
Operational Supervisor Personnel
Air Traffic Control Personnel
Airways Facilities Personnel
Pilot of Another Aircraft
Ground Crewman
Spectator
Third Pilot
Navigator
Flight Attendant
Dispatching Personnel

PHASE OF OPERATION: The phase of flight in which the first occurrence happened.

REVENUE PASSENGER: A person receiving air transportation from an air carrier for which remuneration is received by the air carrier. Air carrier employees and others receiving air transportation for which a token service charge is levied are considered nonrevenue passengers.

REVENUE PLANE-MILES: The total plane-miles flown in revenue service.

SERIOUS INJURY: Any injury which 1) requires hospitalization for more than 48 hours, commencing within 7 days from the date the injury was received; 2) results in a fracture of any bone (except simple fractures of fingers, toes, or nose); 3) involves lacerations which cause severe hemorrhages, nerve, muscle, or tendon damage; 4) involves injury to any internal organ; or 5) involves second-or third-degree burns, or any burns affecting more than 5 percent of body surface.

TYPE OF OCCURRENCE: The concept of sequence of events as a method of accident classification was introduced in 1982 to describe the circumstances in an accident. A maximum of five occurrences may be used. Typically each occurrence is further described by one or more "findings" which, when presented chronologically, depict the accident scenario from beginning to end. The findings are developed by Safety Board analysts from a menu of words and phrases, and are the most detailed means of classifying an accident. The findings are also used to describe the probable cause of and related factors in an accident. The example below illustrates the relationship between occurrences and findings.

Occurrence #1 LOSS OF POWER (PARTIAL) - MECHANICAL FAILURE/MALFUNCTION
Phase of Operation TAKEOFF - GROUND RUN

Finding(s)

1. COMPRESSOR ASSEMBLY - FATIGUE
2. COMPRESSOR ASSEMBLY - FAILURE, TOTAL
3. MATERIAL DEFECT (INADEQUATE QUALITY CONTROL) - MANUFACTURER

TYPES OF WEATHER CONDITIONS: Weather condition is described as visual meteorological conditions (VMC) or instrument meteorological conditions (IMC) and is expressed in terms of visibility, distance from clouds, and ceilings in accordance with Part 91 of the Federal Aviation Regulations.

Appendix C

Detailed Cause/Factor Assignments
14 CFR 121 Operations

CAUSE/FACTOR TABLE
14 CFR 121 OPERATIONS
1997

	Cause or Factor	Cause
AIRCRAFT		
All engines	1	1
Door, cargo/baggage	1	0
Landing gear	1	0
Landing gear,brake temperature system	1	0
Landing gear,gear locking mechanism	1	1
Landing gear,main gear	1	1
Landing gear,main gear attachment	1	0
Landing gear,tire	1	1
Misc eqpt/furnishings,galley/personnel lift	1	1
Wing	1	0
FACILITY		
Aircraft manuals	1	0
Airport facilities,ramp facilities	1	0
Airport facilities,taxiway condition	2	1
ENVIRONMENT		
Crosswind	2	0
Dark night	2	0
Icing conditions	1	0
Other	1	0
Other	1	0
Other	1	0
Rain	1	0
Snow	1	0
Terrain condition	1	0
Turbulence	3	2
Turbulence in clouds	2	0
Turbulence(thunderstorms)	1	1
Turbulence,clear air	7	6
Whiteout	1	0
FLIGHT CREW		
Aborted takeoff	1	0
Aircraft control	2	2
Aircraft preflight	1	0
Airspeed(Vref)	1	0
Autopilot	1	1
Clearance	1	1
Directional control	1	1
Evasive maneuver	1	1
Flight into adverse weather	1	1
Go-around	1	0
Ice/frost removal from aircraft	1	1
In-flight planning/decision	1	1
Low altitude flight/maneuver	1	0
Proper descent rate	2	2
Recovery from bounced landing	1	1
Remedial action	1	1
Rotation	1	1
Supervision	1	1
Visual lookout	1	1
Wrong taxi route	1	1
OTHER PERSON		
Acft/equip, inadequate aircraft component	1	1
Aircraft preflight	1	1
Airport snow removal	1	1
Airspeed	2	2

CAUSE/FACTOR TABLE
14 CFR 121 OPERATIONS
1997

	Cause or Factor	Cause
OTHER PERSON (continued)		
Approach/departure control service	1	1
Autopilot	1	0
Clearance	2	2
Communications	1	1
Crew/group briefing	1	1
Crew/group coordination	1	1
Design stress limits of aircraft	1	1
Dispatch	1	1
Diverted attention	1	0
Facility inadequate, visual restriction	1	0
Improper use of procedure	1	1
Inadequate initial training	1	0
Inadequate surveillance of operation	1	1
Instructions,written/verbal	2	2
Maintenance,inspection	2	2
Miscellaneous	2	2
Miscellaneous equipment	1	1
Procedure inadequate	2	1
Procedures/directives	2	1
Radar separation	1	1
Remedial action	1	1
Safety advisory	1	0
Seat belt	5	5
Seat belt sign	2	2
Stall	1	1
Traffic advisory	1	1
Transponder	1	1
Unsafe/hazardous condition	3	3
Visual lookout	2	1

Appendix D

Detailed Cause/Factor Assignments
Scheduled 14 CFR 135 Operations

CAUSE/FACTOR TABLE
SCHEDULED 14 CFR 135 OPERATIONS
1997

	Cause or Factor	Cause
AIRCRAFT		
Door, cargo/baggage	2	2
Engine assembly,connecting rod bolt	1	1
Fluid,fuel	1	0
Landing gear,nose gear attach point	1	1
FACILITY		
Airport facilities,runway/landing area condition	2	0
ENVIRONMENT		
Crosswind	2	0
Downdraft	1	0
Fog	2	0
Icing conditions	1	0
Low ceiling	2	0
Obscuration	1	0
Rain	1	0
Terrain condition	1	0
FLIGHT CREW		
Abort above V1	1	1
Aircraft preflight	2	2
Aircraft weight and balance	1	1
Airspeed	1	1
Altimeter	1	1
Altitude/clearance	1	1
Clearance	1	1
Compensation for wind conditions	1	1
Descent	1	1
Directional control	1	1
Diverted attention	1	0
Flight into known adverse weather	1	1
Gear extension	1	1
Go-around	2	0
Ice/frost removal from aircraft	1	1
In-flight planning/decision	1	1
Lack of familiarity with geographic area	1	0
Proper alignment	1	1
Raising of flaps	1	0
Refueling	1	0
Self-induced pressure	1	0
Stall/spin	1	1
Touchdown	1	0
VFR flight into IMC	3	3
VFR procedures	1	1
Visual illusion	1	1
OTHER PERSON		
Airport snow removal	1	1
Condition(s)/step(s) in improper sequence	1	0
Inadequate certification/approval	1	1
Inadequate surveillance of operation	3	1
Inadequate training	1	1
Information unclear	1	1

Appendix E

Detailed Cause/Factor Assignments
Nonscheduled 14 CFR 135 Operations

CAUSE/FACTOR TABLE
NONSCHEDULED 14 CFR 135 OPERATIONS
1997

	Cause or Factor	Cause
AIRCRAFT		
1 engine	1	0
Accessory drive assy,drive gear	1	1
Aircraft performance,engine out capability	1	0
Airframe	2	0
Anti-ice/deice system, windshield	1	0
Cabin heater	1	0
Cooling system,cowling	1	1
Engine assembly,connecting rod	1	1
Engine assembly,cylinder	2	1
Engine assembly,push rod	1	1
Exhaust system, manifold/pipe	1	1
Fluid,fuel	7	6
Fuel system	2	2
Horizontal stabilizer	1	1
Ignition system,ignition lead	1	0
Ignition system,magneto	1	1
Induction air control,alternate air/door	1	1
Landing gear	1	1
Landing gear,main gear	1	1
Landing gear,main gear attachment	1	1
Landing gear,normal retraction/extension assembly	1	1
Misc eqpt/furnishings,cargo restraints	1	0
Misc eqpt/furnishings,survival equipment	1	0
Miscellaneous,engine	1	1
Propeller system/accessories,blade	1	1
Propeller system/accessories,hydraulic pitch ctl	1	1
Rotor drive system,tail rotor drive shaft	1	1
Rotor system,tail rotor	2	2
Throttle/power lever,cable	1	0
Turboshaft engine,free turbine governor	1	1
Wing,spar	1	1
FACILITY		
Airport facilities,perimeter fence	2	0
Airport facilities,runway/landing area condition	1	0
ENVIRONMENT		
Animal(s)	2	2
Carburetor icing conditions	1	0
Clouds	3	0
Crosswind	2	0
Dark night	9	0
Downdraft	4	0
Fog	4	0
Gusts	2	0
High density altitude	2	0
High wind	2	0
Icing conditions	3	0
Low ceiling	7	0
Night	1	0
Obscuration	1	0
Other	1	0
Other	2	0
Pole	1	0
Snow	2	0
Tailwind	4	0
Terrain condition	26	1
Tree(s)	1	0
Turbulence,terrain induced	2	0
Unfavorable wind	1	0

CAUSE/FACTOR TABLE
NONSCHEDULED 14 CFR 135 OPERATIONS
1997

	Cause or Factor	Cause
ENVIRONMENT (continued)		
Utility pole	1	0
Whiteout	2	0
FLIGHT CREW		
Aborted takeoff	2	2
Aircraft control	1	1
Aircraft preflight	2	2
Aircraft weight and balance	1	0
Airspeed	3	1
All available runway	1	0
Altitude	2	2
Altitude/clearance	4	4
Checklist	2	1
Clearance	4	4
Decision height	1	1
Directional control	1	1
Distance	1	1
Distance/altitude	1	1
Emergency procedure	2	2
Flare	1	1
Flight into adverse weather	1	1
Flight into known adverse weather	2	2
Fuel management	3	3
Fuel supply	1	1
Fuel tank selector position	2	2
Gear extension	1	1
Gear retraction	1	1
Ground loop/swerve	1	1
Hazardous weather advisory	1	1
IFR procedure	2	2
Ice/frost removal from aircraft	1	1
Impairment (drugs)	1	0
In-flight planning/decision	5	5
Information	1	0
Judgment	1	1
Lack of recent instrument time	1	0
Lack of total experience in type operation	1	0
Load tie-down/security	1	0
Loss of tail rotor effectiveness	1	0
Lowering of flaps	2	0
Maintenance,installation	1	0
Maneuver	1	1
Minimum descent altitude	1	1
Overconfidence in personal ability	1	0
Passenger briefing	1	0
Planning/decision	2	2
Porpoise/pilot-induced oscillation	1	1
Preflight planning/preparation	3	2
Procedures/directives	3	2
Propeller feathering	1	1
Proper alignment	1	1
Proper glidepath	1	1
Proper touchdown point	3	3
Raising of flaps	1	1
Recovery from bounced landing	1	1
Refueling	1	1
Remedial action	1	1
Self-induced pressure	1	0
Stall/spin	1	1
Unsuitable terrain or takeoff/landing/taxi area	6	5

CAUSE/FACTOR TABLE
NONSCHEDULED 14 CFR 135 OPERATIONS
1997

	Cause or Factor	Cause
FLIGHT CREW(continued)		
VFR flight into IMC	5	4
Visual illusion	1	0
Visual lookout	4	3
Visual/aural detection	1	1
Weather evaluation	4	3
OTHER PERSON		
Aircraft weight and balance	1	1
Airspeed	1	1
Clearance	1	1
Condition(s)/step(s) insufficiently defined	1	0
Crew/group coordination	1	0
Emergency equipment	1	0
Inadequate surveillance of operation	1	0
Information	1	0
Instructions,written/verbal	2	0
Insufficient standards/requirements	1	0
Maintenance	1	1
Maintenance,adjustment	1	0
Maintenance,inspection	1	1
Maintenance,installation	1	1
Maintenance,modification	1	0
Maintenance,overhaul	1	1
Pressure induced by others	1	0
Procedure inadequate	1	0
Procedures/directives	1	0
Proper assistance	1	0
Proper touchdown point	1	1
Reason for occurrence undetermined	1	1
Seat belt	1	0
Shoulder Harness	1	0
Unsafe/hazardous condition	1	1
Visual lookout	2	1

Appendix F

NTSB Form 6120.4

National Transportation Safety Board

FACTUAL REPORT
AVIATION

NTSB Accident/Incident Number

2
1 ☐ Accident
2 ☐ Incident

3 Investigation
1 ☐ NTSB
2 ☐ FAA Delegated

4 Aircraft Registration Number	5 Nearest City/Place	6 State	7 Zip Code *(First 5 numbers only)*

8 Date of Accident *(Nos. for M,D,Y)*	9 Day of Week *(First 2 letters)*	10 Local Time *(24 hour clock)*	11 Time Zone

12 Narrative Statement of Facts, Conditions and Circumstances Pertinent to the Accident/Incident

Additional Persons Participating in this Accident/Incident Investigation *(Name, address, affiliation. Continue on page 2 if necessary)*

Investigated By:

13 Date *(Nos. for M,D,Y)*	14 Agency	15 Name/Signature

National Transportation Safety Board

FACTUAL REPORT
AVIATION

NTSB Accident/Incident Number

12 Narrative Statement of Facts, Conditions and Circumstances Pertinent to the Accident/Incident *(continued)*

Attach additional pages as necessary (Page 2b 2c 2d etc)

National Transportation Safety Board

FACTUAL REPORT AVIATION

NTSB Accident/Incident Number

Airport/Approach/Landing Information

16 Accident Location
1 ☐ Off airport/airstrip
2 ☐ On airport
3 ☐ On airstrip
4 ☐ UNK/NA

17 Airport Information
☐ Not Applicable
(go to Block 28)

18 Airport Name

19 Airport Identifier

20 Distance From Airport Center *(Nearest SM)*
_____ SM
1 ☐ UNK/NA

21 Direction from Airport
_____ ° mag
1 ☐ UNK/NA

22 Runway Used Identifier
_____
1 ☐ UNK/NA

23 Runway Length
_____ Feet
1 ☐ UNK/NA

24 Runway Width
_____ Feet
1 ☐ UNK/NA

25 Airport Elevation
_____ Ft. MSL
1 ☐ UNK/NA

26 Runway/Landing Surface
1 ☐ Macadam
2 ☐ Asphalt
3 ☐ Concrete
4 ☐ Gravel
5 ☐ Dirt
6 ☐ Grass/turf
7 ☐ Snow
8 ☐ Ice
9 ☐ Water
10 ☐ Metal/Wood
11 ☐ UNK/NA

27 Runway/Landing Surface Condition *(Multiple entry)*
1 ☐ Dry
2 ☐ Wet
3 ☐ Ice covered
4 ☐ Snow--dry
5 ☐ Snow--wet
6 ☐ Snow--crusted
7 ☐ Snow--compacted
8 ☐ Vegetation
9 ☐ Water--calm
10 ☐ Water--choppy
11 ☐ Water--glassy
12 ☐ Rubber deposits
13 ☐ Soft
14 ☐ Rough
15 ☐ Slush covered
16 ☐ Holes
17 ☐ UNK/NA

28 Type Instrument Approach Flown *(Multiple entry)*
1 ☐ None
2 ☐ ADF/NDB
3 ☐ SDF
4 ☐ VOR/TVOR
5 ☐ VOR/DME
6 ☐ TACAN
7 ☐ ILS-complete
8 ☐ ILS-localizer
9 ☐ ILS-backcourse
10 ☐ RNAV
11 ☐ MLS
12 ☐ LDA
13 ☐ ASR
14 ☐ PAR
15 ☐ Sidestep
16 ☐ Visual
17 ☐ Contact
18 ☐ Circling
19 ☐ Practice
20 ☐ UNK/NA

29 VFR Approach/Landing *(Multiple entry)*
1 ☐ None
2 ☐ Traffic pattern
3 ☐ Straight-in
4 ☐ Valley/terrain following
5 ☐ Go around
6 ☐ Touch and go
7 ☐ Full stop
8 ☐ Stop and go
9 ☐ Simulated forced landing
10 ☐ Forced landing
11 ☐ Precautionary landing
12 ☐ UNK/NA

Aircraft Information

30 Aircraft Manufacturer

31 Aircraft Model/Series

32 Serial No.
_____
1 ☐ UNK/NA

33 Certificated Maximum Gross Weight
_____
1 ☐ UNK/NA

34 Type of Aircraft
1 ☐ Airplane
2 ☐ Helicopter
3 ☐ Glider
4 ☐ Balloon
5 ☐ Blimp/dirigible
6 ☐ Ultralight
7 ☐ Gyroplane
A Specify
_____

35 Type Airworthiness Certificate *(Multiple entry)*
Standard
1 ☐ Normal
2 ☐ Utility
3 ☐ Acrobatic
4 ☐ Transport
Special
5 ☐ Restricted
6 ☐ Limited
7 ☐ Provisional
8 ☐ Special flight
9 ☐ Experimental
10 ☐ UNK/NA

36 Home Built
1 ☐ Yes
2 ☐ No
3 ☐ UNK/NA

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NTSB Accident/Incident Number

Aircraft Information *(continued)*

37 Landing Gear

1 ☐ Tricycle--fixed
2 ☐ Tricycle--retractable
3 ☐ Tailwheel--all fixed
4 ☐ Tailwheel--all retractable
5 ☐ Tailwheel--retractable mains
6 ☐ Amphibian
7 ☐ Hull
8 ☐ Float
9 ☐ Emerg float
10 ☐ Ski
11 ☐ Ski/wheel
12 ☐ Skid
13 ☐ High Skid
14 ☐ UNK/NA

38 N0. of Seats

_____
1 ☐ UNK/NA

39 Stall Warning System Installed

1 ☐ Yes
2 ☐ No
3 ☐ UNK/NA

40 Aircraft Not Engine Powered

☐ Go to block 46

41 Engine Type

1 ☐ Reciprocating--carburetor
2 ☐ Reciprocating--fuel injected
3 ☐ Turbo prop
4 ☐ Turbo jet
5 ☐ Turbo fan
6 ☐ Turbo shaft
7 ☐ UNK/NA

42 Engine Manufacturer

43 Engine Model and Series

44 Engine Rated Power

A _____ Horsepower
B _____ Lbs. Thrust
C _____ UNK/NA

45 Number of Engines

_____
1 ☐ UNK/NA

46 Type of Last Inspection

1 ☐ Annual
2 ☐ 100 hour
3 ☐ AAIP
4 ☐ Continuous airworthiness
5 ☐ UNK/NA

47 Date Last Inspection Performed

(Nos. for M. D. Y)

_____
1 ☐ UNK/NA

48 Time Since Inspection

_____ Hours
1 ☐ UNK/NA

49 Airframe Total Time

_____ Hours
1 ☐ UNK/NA

Emergency Locator Transmitter (ELT)	1 Yes	2 No	3 UNK/NA
50 Installed			
51 Operated			
52 Aided in location of accident site			

Owner/Operator Information

53 Registered Aircraft Owner

Name :

54 Address

55 Operator of Aircraft 1 ☐ Same as registered owner

A Name :
B dba
2 ☐ UNK/NA

56 Address 1 ☐ Same as registered owner

A _____
_____
2 ☐ UNK/NA

57 Operator Designator Code

_____

Type of Certificate(s) Held

58 None ☐ *(Go to block 62)*

59 Air Carrier Operationg Certificate *(Check all applicable)*

1 ☐ Flag carrier/domestic (121)
2 ☐ Supplemental
3 ☐ All cargo (418)
4 ☐ Large helicopter (127)
5 ☐ Commuter air carrier
6 ☐ On-demand air taxi

60 Operating Certificate

☐ Other operator of large aircraft

61 Operator Certificate

1 ☐ Rotorcraft--external load operator (133)
2 ☐ Agricultural aircraft (137)

Regulation Flight Conducted Under

62 Regulation Flight Conducted Under

1 ☐ 14 CFR 91 *(only)*
2 ☐ 14 CFR 91D
3 ☐ 14 CFR 103
4 ☐ 14 CFR 105
5 ☐ 14 CFR 121
6 ☐ 14 CFR 125
7 ☐ 14 CFR 127
8 ☐ 14 CFR 133
9 ☐ 14 CFR 135
10 ☐ 14 CFR 137
11 ☐ 14 CFR 129 *(Foreign flag)*
A Specify

Type of Flight Operation Conducted

(Complete 63 a, b, c ONLY if flight was a revenue operation conducted under 121, 125, 127, 129, 135)

63a

1 ☐ Scheduled
2 ☐ Non-scheduled

63b

1 ☐ Domestic
2 ☐ International

63c

1 ☐ Passenger
2 ☐ Cargo
3 ☐ Passenger/cargo
4 ☐ Mail contract ONLY

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NTSB Accident/Incident Number

Owner/Operator Information *(continued)*

(Complete 64 ONLY if 63 a, b, c are not applicable)

64

1 ☐ Personal
2 ☐ Business
3 ☐ Instructional *(including air carrier training)*
4 ☐ Executive/corporate
5 ☐ Aerial application
6 ☐ Aerial observation
7 ☐ Other work use
8 ☐ Public use
9 ☐ Ferry
10 ☐ Positioning
A Specify _____

First Pilot Information

65 Name *(Last, First, Initial)*
1 ☐ UNK/NA

66 Pilot Certificate No.
1 ☐ UNK/NA

67 City
1 ☐ UNK/NA

68 State
1 ☐ UNK/NA

69 Date of Birth *(Nos. for M, D, Y)*
1 ☐ UNK/NA

70 Age
_____ Yrs.
1 ☐ UNK/NA

71 Sex
1 ☐ Male
2 ☐ Female

72 Seat Occupied
1 ☐ Left
2 ☐ Right
3 ☐ Center
4 ☐ Front
5 ☐ Rear
6 ☐ UNK/NA

73 Principal Profession
1 ☐ Pilot--civilian
2 ☐ Pilot--military
3 ☐ Other--military
4 ☐ Aircraft mechanic
5 ☐ Business
6 ☐ Lawyer
7 ☐ Doctor/dentist
8 ☐ Police
9 ☐ Student
10 ☐ Clergy
11 ☐ Teacher
12 ☐ Engineer
13 ☐ Farmer/rancher
14 ☐ Retired
15 ☐ UNK/NA

74 Certificate(s) *(Mutiple entry)*
1 ☐ Student
2 ☐ Private
3 ☐ Commercial
4 ☐ Airline Transport
5 ☐ Flight Instructor
6 ☐ Flight Engineer
7 ☐ Military
8 ☐ None
9 ☐ Foreign
10 ☐ UNK/NA

75 Ratings--Airplane *(multiple entry)*
1 ☐ None
2 ☐ Single engine land
3 ☐ Multiengine land
4 ☐ Single engine sea
5 ☐ Multiengine sea

76 Rotorcraft/Glider/LTA *(multiple entry)*
1 ☐ None
2 ☐ Helicopter
3 ☐ Gyroplane
4 ☐ Airship
5 ☐ Free balloon
6 ☐ Glider

77 Instrument Rating *(multiple entry)*
1 ☐ None
2 ☐ Airplane
3 ☐ Helicopter

78 Instructor Rating(s) *(multiple entry)*
1 ☐ None
2 ☐ Airplane SE
3 ☐ Airplane ME
4 ☐ Helicopter
5 ☐ Gyroplane
6 ☐ Glider
7 ☐ Instrument airplane
8 ☐ Instrument helicopter

79 Type-Rating Endorsement This Aircraft
1 ☐ Yes
2 ☐ No
3 ☐ UNK/NA

80 Biennial Flight Review *(Or equivalent)*
1 ☐ Yes
2 ☐ No
3 ☐ UNK/NA

81 Months since Last BFR
_____ Months
1 ☐ UNK/NA

82 BFR *(or equivalent)* **Aircraft Make/Model**
A Make _____
B Model _____
C ☐ UNK/NA

83 Medical Certificate
1 ☐ None
2 ☐ Class 1
3 ☐ Class 2
4 ☐ Class 3
5 ☐ UNK/NA

84 Medical Certificate Validity
1 ☐ Valid medical--no waivers/limitations
2 ☐ Valid medical--with waivers/limitations
3 ☐ Non valid medical for this flight
4 ☐ Expired
5 ☐ No medical certicate
6 ☐ UNK/NA

85 Date of Last Medical
(Nos. for M, D, Y)
1 ☐ UNK/NA

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FACTUAL REPORT AVIATION

NTSB Accident/Incident Number

First Pilot Information *(continued)*

86 Source of Pilot Flight Time *(Multiple entry)*

1 ☐ Pilot log
2 ☐ Company
3 ☐ FAA
4 ☐ Pilot/Operator Report
5 ☐ Investigators Estimate
6 ☐ Relative
7 ☐ Other Person
8 ☐ UNK/NA

Flight Time	A All A/C	B This Make & Model	C Airplane Single Engine	D Airplane Multiengine	E Night	F Instrument Actual	G Instrument Simulated	H Rotorcraft	I Glider	J Lighter Than Air
87 Total Time										
88 Pilot in Command (PIC)										
89 Instructor										
90 Last 90 Days										
91 Last 30 Days										
92 Last 24 Hours										

93 Seatbelt Used
1 ☐ Yes
2 ☐ No
3 ☐ UNK/NA

94 Shoulder Harness Used
1 ☐ Yes
2 ☐ No
3 ☐ UNK/NA

95 Autopsy Performed *(This pilot)*
1 ☐ Yes
2 ☐ No
3 ☐ UNK/NA

96 Toxicology Performed *(This pilot)*
1 ☐ Yes
2 ☐ No
3 ☐ UNK/NA

97 Person at Controls
1 ☐ Pilot in command
2 ☐ Second pilot
3 ☐ Both pilots
4 ☐ Non-pilot
5 ☐ No one
6 ☐ UNK/NA

98 Second Pilot
1 ☐ Yes *(Complete second pilot supplement)*
2 ☐ No

Flight Itinerary Information

99 Last Departure Point
1 ☐ Same as accident/incident location or
A Airport identifier _____
B City/Place _____
C State _____
2 ☐ UNK/NA

100 Destination
1 ☐ Same as accident/incident location or
2 ☐ Local flight
A Airport Identifier _____
B City/Place _____
C State _____
3 ☐ UNK/NA

101 Flight Plan Flied
1 ☐ None
2 ☐ Visual Flight Rules (VFR)
3 ☐ Instrument Flight Rules (IFR)
4 ☐ VFR/IFR
5 ☐ Company (VFR)
6 ☐ Military (VFR)
7 ☐ UNK/NA

102 Time of Departure
1 ☐ UNK/NA
A Time _____
B Time Zone _____

103 Type of Clearance *(Multiple entry)*
1 ☐ None
2 ☐ VFR
3 ☐ Special VFR
4 ☐ IFR
5 ☐ Special IFR
6 ☐ VFR on top
7 ☐ Cruise
8 ☐ Traffic Advisory
9 ☐ VFR Flight Following
10 ☐ UNK/NA

104 Airspace *(Multiple entry)*
1 ☐ Uncontrolled
2 ☐ Controlled
3 ☐ Airport traffic area
4 ☐ Control zone
5 ☐ Airport advisory area
6 ☐ Positive control area
7 ☐ Terminal control area
8 ☐ Stage II TRSA
9 ☐ Stage III TRSA
10 ☐ Prohibited area
11 ☐ Restricted area
12 ☐ Military Operation Area (MOA)
13 ☐ Student Jet Training Area
14 ☐ Demo Area
15 ☐ Warning area
16 ☐ FAR 93
17 ☐ (Special air traffic areas)
18 ☐ UNK/NA

Aircraft Loading Information

105 Load Description
1 ☐ None
2 ☐ Passengers
3 ☐ Cargo
4 ☐ Towing glider
5 ☐ Towing banner
6 ☐ Other external
7 ☐ Parachutists
8 ☐ Water
9 ☐ Chemical
10 ☐ Livestock
11 ☐ Illegal cargo
12 ☐ UNK/NA

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NTSB Accident/Incident Number

Weather Information

106 Source of Weather Briefing *(Multiple entry)*

1 ☐ No record of briefing *(Go to block 109)*
2 ☐ National Weather Service (NWS)
3 ☐ Flight Service Station
4 ☐ PATWAS (Pilot Automated Tel. WX Answering Svc)
5 ☐ VRS (Voice Response System)
6 ☐ Company
7 ☐ Commercial weather service
8 ☐ TV/radio weather
9 ☐ Military
10 ☐ UNK/NA

107 Method of Briefing *(Multiple entry)*

1 ☐ In person
2 ☐ Teletype
3 ☐ Telephone
4 ☐ Aircraft radio
5 ☐ TV/radio
6 ☐ UNK/NA

108 Completeness of Weather Briefing

1 ☐ Weather not pertinent
2 ☐ Full
3 ☐ Partial--limited by pilot
4 ☐ Partial--limited by briefer/forecaster
5 ☐ UNK/NA

109 Investigator's Source of Weather Information

1 ☐ Pilot *(Go to block 111)*
2 ☐ Witness *(Go to block 111)*
3 ☐ Weather observation facility

110 Weather Observation Facility

A Identifier _____
B Time of observation _____ zone _____
C Elevation _____ feet MSL
D Distance from accident site _____ NM
E Direction from accident site _____ ° magnetic

111 Basic Weather Conditions at Accident Site

1 ☐ Visual Meteorological Conditions (VMC)
2 ☐ Instrument Meteorological Conditions (IMC)
3 ☐ UNK/NA

112 Conditions of Light

1 ☐ Dawn
2 ☐ Daylight
3 ☐ Night (Dark)
4 ☐ Night (Bright)
5 ☐ Dusk
6 ☐ UNK/NA

113 Sky/Lowest/Cloud Conditions

1 ☐ Clear
2 ☐ Scattered
3 ☐ Thin broken
4 ☐ Thin overcast
5 ☐ Partial obscuration
6 ☐ UNK/NA

A _____ Feet AGL

114 Lowest Ceiling

1 ☐ None
2 ☐ Broken
3 ☐ Overcast
4 ☐ Obscured
5 ☐ UNK/NA

A _____ Feet AGL

115 Visibility *(Decimals)*

A _____ SM
B RVR _____ Feet
C RVV _____ SM
1 ☐ UNK/NA

116 Temperature

_____ F
1 ☐ UNK/NA

117 Dew Point

_____ F
1 ☐ UNK/NA

118 Wind (From)

1 ☐ Variable
2 ☐ UNK/NA

A _____ Magnetic

119 Wind Speed

1 ☐ Calm
2 ☐ Light and Variable
3 ☐ UNK/NA

A _____ Kts.

120 Gusts

1 ☐ None
2 ☐ UNK/NA

A _____ Kts

121 Altimeter Setting

_____ " Hg
1 ☐ UNK/NA

122 Density Altitude

_____ feet
1 ☐ UNK/NA

123 Restrictions to Visibility

1 ☐ None
2 ☐ Haze (H)
3 ☐ Dust (D)
4 ☐ Smoke (K)
5 ☐ Fog (F)
6 ☐ Ice fog (IF)
7 ☐ Ground fog (GF)
8 ☐ Blowing spray (BY)
9 ☐ Blowing dust (BD)
10 ☐ Blowing snow (BS)
11 ☐ Blowing sand (BN)
12 ☐ UNK/NA

124 Type of Precipitation

1 ☐ None *(Go to block 126)*
2 ☐ Rain (R)
3 ☐ Snow (S)
4 ☐ Hail (A)
5 ☐ Rain showers (RW)
6 ☐ Freezing rain (ZR)
7 ☐ Snow shower (SW)
8 ☐ Drizzle (L)
9 ☐ Ice pellets (IP)
10 ☐ Snow pellets (SP)
11 ☐ Snow Grains (SG)
12 ☐ Freezing drizzle (ZL)
13 ☐ Ice crystals (IC)
14 ☐ Ice pellet shower (IPW)
15 ☐ UNK/NA

125 Intensity of Precipitation

1 ☐ Light
2 ☐ Moderate
3 ☐ Heavy
4 ☐ UNK/NA

126 Aircraft Damage

1 ☐ None
2 ☐ Minor
3 ☐ Substantial
4 ☐ Destroyed
5 ☐ UNK/NA

127 Aircraft Fire

1 ☐ None
2 ☐ In-flight
3 ☐ On ground
4 ☐ UNK/NA

128 Explosion

1 ☐ None
2 ☐ In-flight
3 ☐ On ground
4 ☐ UNK/NA

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NTSB Accident/Incident Number

Accident Information

129 Injury Index *(Most critical injury)*

1 ☐ None 2 ☐ Minor 3 ☐ Serious 4 ☐ Fatal

Injury Summary	A Fatal	B Serious	C Minor	D None	E Total
130 First Pilot					
131 Co-pilot					
132 Dual Student					
133 Check Pilot					
134 Flight Engineer					
135 Cabin Attendants					
136 Other Crew					
137 Passengers					
138 TOTAL ABOARD					
139 Other Aircraft					
140 Other Ground					
141 GRAND TOTAL					

142 Classification

1 ☐ U.S. Registered Aircraft on U.S. Soil, Territories and Possessions, or International Waters
2 ☐ U.S. Registered Aircraft on foreign Soil
3 ☐ U.S. Registered Aircraft operated by a Foreign Operator
4 ☐ Foreign Registered Aircraft on U.S. Soil, Territories or Possessions
5 ☐ Military Aircraft
6 ☐ Aircraft not Registered

Part Failure/Incorrect Part

143 Part Failure/Malfunction *(Multiple entry)*

1 ☐ None 4 ☐ Part/component #3
2 ☐ Part/component #1 5 ☐ UNK/NA
3 ☐ Part/component #2

144 Incorrect Part *(Multiple entry)*

1 ☐ None 4 ☐ Part/component #3
2 ☐ Part/component #1 5 ☐ UNK/NA
3 ☐ Part/component #2

	A Part/Component #1	B Part/Component #2	C Part/Component #3
145 Part Name			
146 Bogus Part	1 ☐ Yes 2 ☐ No	1 ☐ Yes 2 ☐ No	1 ☐ Yes 2 ☐ No