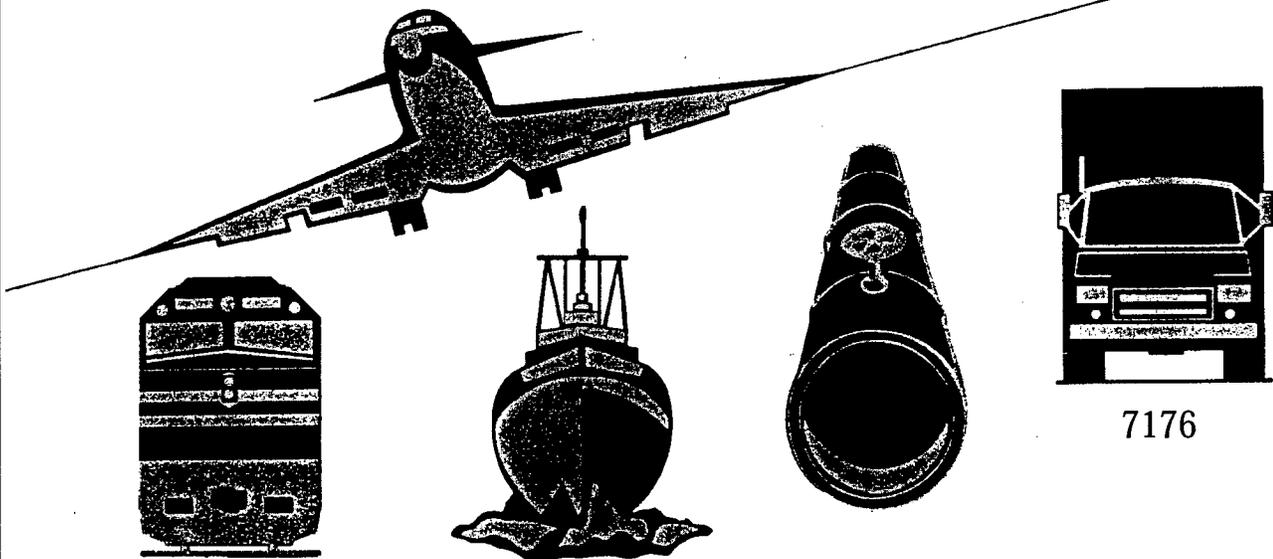


NATIONAL TRANSPORTATION SAFETY BOARD

WASHINGTON, D.C. 20594

ANNUAL REVIEW OF AIRCRAFT ACCIDENT DATA

U.S. AIR CARRIER OPERATIONS
CALENDAR YEAR 1996



7176

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CONTENTS

Introduction	1
14 CFR 121 Operations.	2
Scheduled 14 CFR 135 Operations	20
Nonscheduled 14 CFR 135 Operations	32
Appendix A -- Midair Collision Accidents	51
Appendix B -- Explanatory Notes	52
Appendix C -- Cause/Factor Table - 14 CFR 121.	54
Appendix D -- Cause/Factor Table - Scheduled 14 CFR 135	57
Appendix E -- Cause/Factor Table - Nonscheduled 14 CFR 135	59
Appendix F -- NTSB Form 6120.4	63

LIST OF TABLES WITH TABLE NUMBERS

	Part <u>121</u>	Sched Part <u>135</u>	Nonsch Part <u>135</u>
Summary of Losses	1	20	38
Accident Rates	2	21	39
List of Accidents	3	22	40
Accidents and Rates by Type of Operation	4	--	--
Persons by Role and Degree of Injury	5	23	41
Aircraft by Damage and Degree of Injury	6	24	42
Aircraft by First Occurrence and Degree of Injury and by Damage	7	25	43
Aircraft by First Occurrence and Broad Phase of Operation	8	26	44
Aircraft by Phase of Operation and Degree of Injury and by Damage	9	27	45
Aircraft by Condition of Light and Type of Weather		10	28
Aircraft by Type of Operation and Degree of Injury		11	29
Aircraft by Proximity to Airport and Flight Plan	--	30	48
Aircraft by Occurrence of Fire and Degree of Injury and by Damage	12	31	49
Type of Aircraft by Degree of Injury and by Damage		--	32
Broad Cause/Factor Assignments	13	33	51
Accidents, Fatal Accidents, Fatalities, and Rates	14	--	--
Accidents, Fatal Accidents, Fatalities, and Rates (Sched. Ops.)	15	34	--
Accidents, Fatal Accidents, Fatalities, and Rates (Nschd. Ops.)	16	--	52
First Occurrences in All and in Fatal Accidents	17	35	53
First Phases of Operation in All and in Fatal Accidents	18	36	54
Broad Cause/Factor Assignments in All and in Fatal Accidents	19	37	55
Mid-air Collision Accidents (U.S. Air Carrier Ops. 1985 - 1995)	app A	--	--
Explanatory Notes	app B	--	--
Detailed Cause/Factor Assignments	app C	app D	app E
NTSB Form 6120.4	app F	--	--

INTRODUCTION

This report presents a statistical compilation and review of air carrier accidents that occurred in 1996, and 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 to air taxis. For a complete definition of operations under each of these Parts, consult the applicable sections of the CFR.

The report is divided into three major sections: 14 CFR 121 Operations; Scheduled 14 CFR 135 Operations; and Nonscheduled 14 CFR 135 Operations. Each section begins with an overview of accidents and their consequences (injuries and aircraft damage) for 1996 and for the 10 preceding years. Several tables then present accident parameters for 1996 only. Each section concludes with tabulations that present comparative statistics for 1996 and for the 10-year period 1986-1995.

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 Federal Aviation Administration (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.

14 CFR 121 OPERATIONS

There were 38 accidents in Part 121 operations in 1996. The overall accident rate for 1996 was 0.276 accidents per 100,000 hours flown, a 3 percent increase from the 1995 rate of 0.267. The 1996 rate was 25 percent higher than the overall rate of 0.221 for the period from 1986 through 1995.

There were five fatal accidents involving Part 121 operators in 1996 with a fatal accident rate of 0.036 per 100,000 hours flown, a 64 percent increase from the 1995 rate of 0.022. The five fatal accidents in 1996 were responsible for a total of 380 fatalities. The most serious of these accidents involved a Boeing 747 in East Moriches, New York (230 fatalities), a McDonnell Douglas DC-9 in Miami, Florida (110 fatalities) and a Boeing 707 in Manta, Ecuador (34 fatalities).

Probable causes and contributing factors are shown in Tables 13 and 19 for Part 121 operations. Aircraft accidents still under NTSB investigation and accidents occurring on foreign soil are excluded from these findings. The list below shows aircraft accidents occurring in the United States in which investigations are on-going.

Date	Location	Air Carrier	Aircraft Type	Aircraft Damage	Degree of Injury
10/16/91	Newark, NJ	Continental American	Boeing 737 Douglas MD-80	Substantial Substantial	Minor Minor
01/17/96	Atlantic Ocean	American	Airbus A300	Minor	Serious
07/17/96	East Moriches, NY	Trans World	Boeing 747	Destroyed	Fatal (230)
10/28/96	Jamaica, NY	American	Douglas MD-80	Minor	Serious

Table 1 - SUMMARY OF LOSSES
14 CFR 121 OPERATIONS
1986 - 1996

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Accidents											
Fatal	3	5	3	11	6	4	4	1	4	3	5
Serious Injury	15	12	16	5	11	11	12	13	12	16	18
Minor Injury	2	3	4	5	1	2	0	3	3	1	6
No Injury	4	14	7	7	6	9	2	6	4	16	9
Total	24	34	30	28	24	26	18	23	23	36	38
Fatalities											
Passenger	4	213	255	259	8	40	26	0	228	152	321
Crew	3	17	19	17	4	9	5	0	9	10	29
Other Persons	1	2	11	2	27	13	2	1	2	6	30
Total	8	232	285	278	39	62	33	1	239	168	380
Aircraft Damage											
Destroyed	2	5	3	7	3	5	3	1	3	3	5
Substantial	8	16	13	11	8	10	3	8	8	18	15
Minor	4	4	0	0	4	3	1	3	3	2	7
None	10	12	14	10	10	9	11	11	9	14	13
Total	24	37^a	30	28	25^a	27^a	18	23	23	37^a	40^a

^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
1986 - 1996

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Accidents Rates ^d											
Miles Flown ^b	.0057	.0076	.0064	.0061	.0049	.0054	.0036	.0044	.0040	.0064	.0065
Hours Flown ^c	.231	.310	.260	.248	.198	.221	.146	.181	.168	.267	.276
Departures Flown ^c	.319	.434	.376	.366	.297	.333	.228	.285	.267	.426	.462
Fatal Accident Rates ^d											
Miles Flown ^b	.0005	.0009	.0004	.0024	.0012	.0008	.0008	.0002	.0007	.0005	.0009
Hours Flown ^c	.020	.038	.018	.098	.049	.034	.032	.008	.030	.022	.036
Departures Flown ^c	.028	.053	.026	.144	.074	.051	.051	.012	.049	.035	.061

^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, 12/7/87 suicide/sabotage involving a PSA BAe-146e and the 4/2/86 sabotage of a TWA B727-200 are also excluded from accident rate computations.

Table 3 - LIST OF ACCIDENTS
14 CFR 121 OPERATIONS
1996

Date	Location	Type of Operation	Air Carrier	Aircraft Type	Aircraft Damage	Degree of Injury	First Occurrence
01/07	Nashville, TN	Sch Passenger	Valujet	McD-Douglas DC-9-32	Substantial	Minor	Airframe/component/system failure/malfunction
01/17	Atlantic Ocean	Sch Passenger	American	Airbus A300B4-605R	Minor	Serious	In flight encounter with weather
02/01	Nashville, TN	Sch Passenger	Valujet	McD-Douglas DC9-32	Substantial	None	Airframe/component/system failure/malfunction
02/04	Denver, CO	Sch Passenger	Delta	McD-Douglas MD-88	Substantial	Minor	Hard landing
02/19	Houston, TX	Sch Pax/Cargo	Continental	McD-Douglas DC-9-32	Substantial	Minor	Wheels up landing
02/20	Fairbanks, AK	Sch Pax/Cargo Sch Pax/Cargo	Delta United	Boeing 757-232 Boeing 757-222	Minor Substantial	None None	Collision between aircraft (other than midair)
02/20	Jamaica, NY	Sch Pax/Cargo	American	Airbus A300B4-605R	Minor	Serious	Airframe/component/system failure/malfunction
02/20	Portland, OR	Sch Passenger	Delta	Boeing 767-332	None	Serious	Airframe/component/system failure/malfunction
03/20	Wilmingtong, OH	Nonsch Cargo	ABX Air	McD-Douglas DC-8-62	Substantial	None	On ground collision with object
03/20	Jacksonville, FL	Sch Passenger	Air South	Boeing 737-200	Substantial	None	Airframe/component/system failure/malfunction
03/23	Taos, NM	Sch Passenger	United	Boeing B757-222	None	Serious	In flight encounter with weather
03/27	Memphis, TN	Nonsch Cargo	Federal Ex.	Boeing 727-225	Substantial	None	On ground collision with object
04/07	Atlantic Ocean	Sch Passenger	American	Boeing 757-200	None	Serious	In flight encounter with weather
05/11	Miami, FL	Sch Passenger	Valujet	McD-Douglas DC-9-32	Destroyed	Fatal (110)	Fire
05/16	Anchorage, AK	Nonsch Cargo	Federal Ex.	McD-Douglas MD-11-F	Substantial	Minor	Vortex turbulence encountered
06/06	San Francisco, CA	Sch Passenger Sch Passenger	United American	Boeing 737-322 Boeing 767-223	Substantial Minor	None None	Collision between aircraft (other than midair)
06/22	Granite, CO	Sch Passenger	Frontier	Boeing 737-201	None	Serious	In flight encounter with weather

Table 3 - LIST OF ACCIDENTS (Continued)
14 CFR 121 OPERATIONS
1996

Date	Location	Type of Operation	Air Carrier	Aircraft Type	Aircraft Damage	Degree of Injury	First Occurrence
07/01	DFW Airport, TX	Sch Passenger	Wings West	Saab F340B	Substantial	None	Loss of power(total) - mech failure/malfunction
07/06	Pensacola, FL	Sch Passenger	Delta	McD-Douglas MD-88	Substantial	Fatal (2)	Loss of power(total) - mech failure/malfunction
07/08	Nashville, TN	Sch Passenger	Southwest	Boeing 737-200	Minor	Serious	On ground collision with object
07/11	Providence, RI	Sch Passenger	Business Ex.	Saab 340A	None	Serious	Miscellaneous/other (pax lost balance on stairs while disembarking plane)
07/13	Westerly, RI	Sch Pax/Cargo	American	McD-Douglas MD-11	None	Serious	Abrupt maneuver
07/17	East Moriches, NY	Sch Pax/Cargo	Transworld	Boeing 747-131	Destroyed	Fatal (230)	Explosion
07/20	Russian Mission, AK	Nonsch Cargo	Northern Air	McD-Douglas DC-6A	Destroyed	Fatal (4)	Loss of power(total) - mech failure/malfunction
08/25	Jamaica, NY	Sch Pax/Cargo	Transworld	Lockheed L-1011-100	Substantial	None	Dragged wing, rotor, pod, or float
08/29	Chattanooga, TN	Sch Pax/Cargo	US Air	Boeing 737-300	Minor	Serious	In flight encounter with weather
09/05	Newburgh, NY	Sch Cargo	Federal Ex.	McD-Douglas DC-10-10	Destroyed	Minor	Fire
09/20	Fort Smith, AR	Sch Passenger	Wings West	Saab SF-340B	None	Serious	Miscellaneous/other (pax slipped on stairs while disembarking plane)
10/19	Flushing, NY	Sch Pax/Cargo	Delta	McD-Douglas MD-88	Substantial	Minor	In flight collision with object
10/22	Manta, Ecuador	Nonsch Cargo	Millon Air	Boeing 707-323	Destroyed	Fatal (34)	Crashed into residential area
10/28	Jamaica, NY	Sch Pax/Cargo	American	McD-Douglas MD-80	Minor	Serious	Wheels up landing
11/18	Grand Rapids, MI	Sch Pax/Cargo	United	Boeing 737-222	None	Serious	Airframe/component/system failure/malfunction
11/19	Bishop, CA	Sch Passenger	United	Boeing 737-500	None	Serious	In flight encounter with weather
12/15	Honolulu, HI	Sch Passenger	Aloha Isle.	DeHavilland DHC-8	Substantial	None	Airframe/component/system failure/malfunction

Table 3 - LIST OF ACCIDENTS (Continued)
 14 CFR 121 OPERATIONS
 1996

Date	Location	Type of Operation	Air Carrier	Aircraft Type	Aircraft Damage	Degree of Injury	First Occurrence
12/20	Denver, CO	Sch Passenger	Air Wisconsin	BAE 146-200A	None	Serious	In flight encounter with weather
12/22	Yakutat, AK	Sch Pax/Cargo	Alaska	Boeing 737-400	None	Serious	In flight encounter with weather
12/22	San Jose, CA	Sch Passenger	American	McD-Douglas MD-83	None	Serious	In flight encounter with weather
12/22	Las Vegas, NV	Nonsch Passenger	Sun Country	McD-Douglas DC-10-15	None	Serious	Miscellaneous/other (ramp agent's ankle injured)

Table 4 - ACCIDENTS AND RATES BY TYPE OF OPERATION
14 CFR 121 OPERATIONS
1996

	Type of Operation				
	----- Scheduled				
	Passenger/ Cargo	All Cargo	All	All Non- Scheduled	All
Accidents	31	1	32	6	38
Fatal Accidents	3	0	3	2	5
Aircraft Miles Flown (Thousands)	5,154,835	295,162	5,449,997	423,111	5,873,109
Aircraft Hours Flown	12,199,881	771,795	12,971,676	774,436	13,746,112
Departures Flown	7,354,419	496,879	7,851,298	377,512	8,228,810
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
1996

Role of Person	Degree of Injury				Total
	Fatal	Serious	Minor	None	
Pilot	4	0	2	34	40
Copilot	4	0	0	36	40
Flight engineer	3	0	1	4	8
Cabin attendants	17	7	8	119	151
Other crew	1	0	0	2	3
Passenger	321	19	84	3239	3663
Total aboard	350	26	95	3434	3905
Other ground	30	51	0	2	83
Grand total	380	77	95	3436	3988
Percent	9.5	1.9	2.4	86.2	

Table 6 - AIRCRAFT BY DAMAGE AND DEGREE OF INJURY
14 CFR 121 OPERATIONS
1996

Aircraft damage	Degree of injury				Aircraft	
	None	Minor	Serious	Fatal	No.	Percent
None	0	0	13	0	13	32.5
Minor	2	0	5	0	7	17.5
Substantial	9	5	0	1	15	37.5
Destroyed	0	1	0	4	5	12.5
Aircraft						
Number -	11	6	18	5	40	
Percent -	27.5	15.0	45.0	12.5		

Table 7 - AIRCRAFT BY FIRST OCCURRENCE AND DEGREE OF INJURY AND BY DAMAGE
14 CFR 121 OPERATIONS
1996

Type of first occurrence *	Degree of injury				Aircraft damage				Aircraft	
	None	Minor	Serious	Fatal	None	Minor	Substantial	Destroyed	No.	Percent
Abrupt maneuver	0	0	1	0	1	0	0	0	1	2.5
Airframe/component/system failure/malfunction	3	1	3	0	2	1	4	0	7	17.5
Dragged wing, rotor, pod or float	1	0	0	0	0	0	1	0	1	2.5
Fire	0	1	0	1	0	0	0	2	2	5.0
Explosion	0	0	0	1	0	0	0	1	1	2.5
Hard landing	0	1	0	0	0	0	1	0	1	2.5
In flight collision with object	0	1	0	0	0	0	1	0	1	2.5
Wheels up landing	0	1	1	0	0	1	1	0	2	5.0
In flight encounter with weather	0	0	9	0	7	2	0	0	9	22.5
On ground collision with object	2	0	1	0	0	1	2	0	3	7.5
Loss of power (total) - mechanical failure/malfunction	1	0	0	2	0	0	2	1	3	7.5
Collision between aircraft (other than midair)	4	0	0	0	0	2	2	0	4	10.0
Vortex turbulence encountered	0	1	0	0	0	0	1	0	1	2.5
Miscellaneous/other	0	0	3	0	3	0	0	0	3	7.5
Not reported	0	0	0	1	0	0	0	1	1	2.5
Aircraft										
Number -	11	6	18	5	13	7	15	5	40	
Percent -	27.5	15.0	45.0	12.5	32.5	17.5	37.5	12.5		

* 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
1996

Type of first occurrence	Phase of operation										Aircraft	
	Stndg	Taxi	Tkoff	Climb	Cruis	Dscnt	Aprch	Landg	Nrept	No.	Percent	
Abrupt maneuver	0	0	0	0	0	1	0	0	0	1	2.5	
Airframe/component/system failure/malfunction	1	1	2	0	0	1	1	1	0	7	17.5	
Dragged wing, rotor, pod, or float	0	0	0	0	0	0	0	1	0	1	2.5	
Fire	0	0	0	1	1	0	0	0	0	2	5.0	
Explosion	0	0	0	1	0	0	0	0	0	1	2.5	
Hard landing	0	0	0	0	0	0	0	1	0	1	2.5	
In flight collision w/obj.	0	0	0	0	0	0	1	0	0	1	2.5	
Wheels up landing	0	0	0	0	0	0	0	2	0	2	5.0	
In flight encounter w/wx.	0	0	0	0	5	4	0	0	0	9	22.5	
On ground collision w/obj.	0	2	1	0	0	0	0	0	0	3	7.5	
Loss of power (total) - mech. failure/malfunction	0	0	2	0	1	0	0	0	0	3	7.5	
Collision between aircraft (other than midair)	1	3	0	0	0	0	0	0	0	4	10.0	
Vortex turbulence encountered	0	0	0	0	0	0	1	0	0	1	2.5	
Miscellaneous/other	2	1	0	0	0	0	0	0	0	3	7.5	
Not reported	0	0	0	0	0	0	0	0	1	1	2.5	
Aircraft												
Number -	4	7	5	2	7	6	3	5	1	40		
Percent -	10.0	17.5	12.5	2.5	17.5	15.0	7.5	12.5	2.5			

Table 9 - AIRCRAFT BY PHASE OF OPERATION AND DEGREE OF INJURY AND BY DAMAGE
14 CFR 121 OPERATIONS
1996

Phase of operation *	Degree of injury				Aircraft damage				Aircraft	
	None	Minor	Ser	Fatal	None	Minor	Subs	Dest	No.	Percent
Standing	1	0	0	0	0	0	1	0	1	2.5
Standing - engines operating	0	0	1	0	0	1	0	0	1	2.5
Standing - engines not operating	0	0	2	0	2	0	0	0	2	5.0
Taxi	0	0	1	0	1	0	0	0	1	2.5
Taxi - pushback/tow	1	0	1	0	1	0	1	0	2	5.0
Taxi - to takeoff	3	0	0	0	0	2	1	0	3	7.5
Taxi - from landing	1	0	0	0	0	0	1	0	1	2.5
Takeoff - roll/run	0	0	1	1	0	1	1	0	2	5.0
Takeoff - initial climb	2	1	0	0	0	0	3	0	3	7.5
Climb	0	0	0	1	0	0	0	1	1	2.5
Climb - to cruise	0	0	0	1	0	0	0	1	1	2.5
Cruise	0	1	3	0	2	1	0	1	4	10.0
Cruise - normal	0	0	2	1	2	0	0	1	3	7.5
Descent - normal	0	0	6	0	5	1	0	0	6	15.0
Approach	1	0	0	0	0	0	1	0	1	2.5
Approach - VFR pattern - final approach	0	1	0	0	0	0	1	0	1	2.5
Approach - FAF/outer marker to threshold (IFR)	0	1	0	0	0	0	1	0	1	2.5
Landing	0	0	1	0	0	1	0	0	1	2.5
Landing - flare/touchdown	1	2	0	0	0	0	3	0	3	7.5
Landing roll	1	0	0	0	0	0	1	0	1	2.5
Not reported	0	0	0	1	0	0	0	1	1	2.5
Aircraft										
Number -	11	6	18	5	13	7	15	5	40	
Percent -	27.5	15.0	45.0	12.5	32.5	17.5	37.5	12.5		

* 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
1996

Condition of light	Type of weather			Aircraft	
	VMC	IMC	Unknown	No.	Percent
Dawn	0	1	0	1	2.5
Daylight	19	5	0	24	60.0
Night (dark)	4	0	1	5	12.5
Night (bright)	6	0	0	6	15.0
Dusk	2	0	0	2	5.0
Not reported	2	0	0	2	5.0
Aircraft					
Number -	33	6	1	40	
Percent -	82.5	15.0	2.5		

Table 11 - AIRCRAFT BY TYPE OF OPERATION AND DEGREE OF INJURY
14 CFR 121 OPERATIONS
1996

Type of Operation	Degree of Injury				Aircraft	
	None	Minor	Serious	Fatal	No.	Percent
Scheduled Domestic Passenger	6	2	10	2	20	50.0
Scheduled Domestic Cargo	0	1	0	0	1	2.5
Scheduled Domestic Pax/Cargo	3	2	4	0	9	22.5
Scheduled International Pax	0	0	1	0	1	2.5
Scheduled Int'l Pax/Cargo	0	0	2	1	3	7.5
Nonscheduled Domestic Passenger	0	0	1	0	1	2.5
Nonscheduled Domestic Cargo	2	1	0	1	4	10.0
Nonscheduled International Cargo	0	0	0	1	1	2.5
Aircraft						
Number -	11	6	18	5	40	
Percent -	27.5	15.0	45.0	12.5		

Table 12 - AIRCRAFT BY OCCURRENCE OF FIRE AND DEGREE OF INJURY AND BY DAMAGE
14 CFR 121 OPERATIONS
1996

Aircraft fire	Degree of injury				Aircraft damage				Aircraft	
	None	Minor	Ser	Fatal	None	Minor	Subs	Dest	No.	Percent
None	11	4	16	2	12	6	13	2	33	82.5
In-flight	0	0	0	2	0	0	0	2	2	5.0
On ground	0	2	2	1	1	1	2	1	5	12.5
Aircraft										
Number -	11	6	18	5	13	7	15	5	40	
Percent -	27.5	15.0	45.0	12.5	32.5	17.5	37.5	12.5		

Table 13 - BROAD CAUSE/FACTOR ASSIGNMENTS*
 14 CFR 121 OPERATIONS
 1996

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 #	3	8	0	3	3	11
Propulsion System and Controls	2	3	0	0	2	3
Flight Control System	0	0	0	1	0	1
Airframe	1	1	0	0	1	1
Landing Gear	0	2	0	0	0	2
Systems/Equipment/Instruments	2	6	0	2	2	8
Environment #	0	9	0	8	0	16
Weather	0	9	0	3	0	11
Light Conditions	0	0	0	3	0	3
Object (trees, wires, etc.)	0	0	0	2	0	2
Airport/Airways Facilities, Aids	0	0	0	1	0	1
Terrain/Runway Condition	0	0	0	1	0	1
Personnel #	2	22	0	7	2	24
Pilot	0	7	0	1	0	7
Others (Aboard)	0	6	0	1	0	5
Others (Not Aboard)	2	12	0	5	2	15
Number of Aircraft					5	40
NTSB Determined Probable Cause					3	35

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

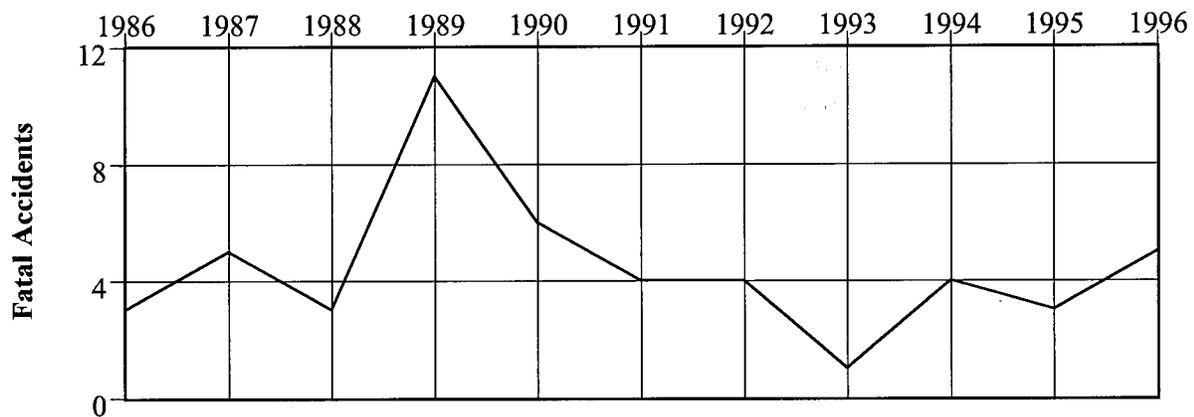
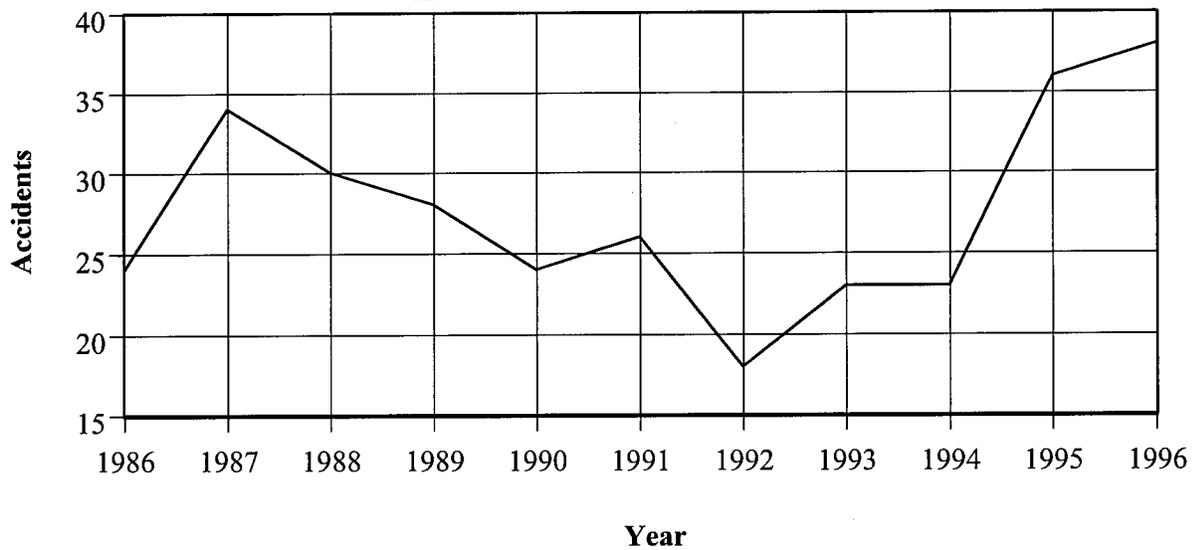
This category is composed of the sub-categories indented below it. The number of aircraft cited in a category may be less than or equal to the sum of the sub-category citations.

Table 14 - ACCIDENTS, FATAL ACCIDENTS, FATALITIES, AND RATES
ALL 14 CFR 121 OPERATIONS
1986 - 1996

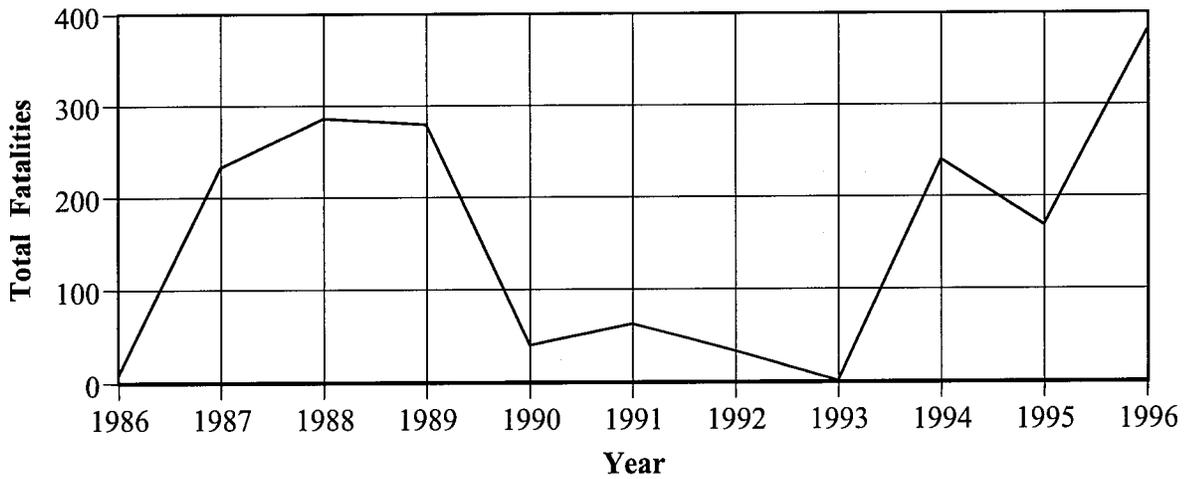
Year	Accidents	Fatal Accidents	Fatalities		Accident Rate per 100,000* Aircraft Hours Flown		
			Total	Aboard Aircraft In This Category	Hours Flown	Total	Fatal
1986	24	3	8	7	9,976,104	0.231	0.020
1987	34	5	232	230	10,645,192	0.310	0.038
1988	30	3	285	274	11,140,548	0.260	0.018
1989	28	11	278	276	11,274,543	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

* Suicide and sabotage accidents excluded from rates as follows:
Total - 1986 (1), 1987 (1), 1988 (1), 1994 (1)
Fatal - 1986 (1), 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**

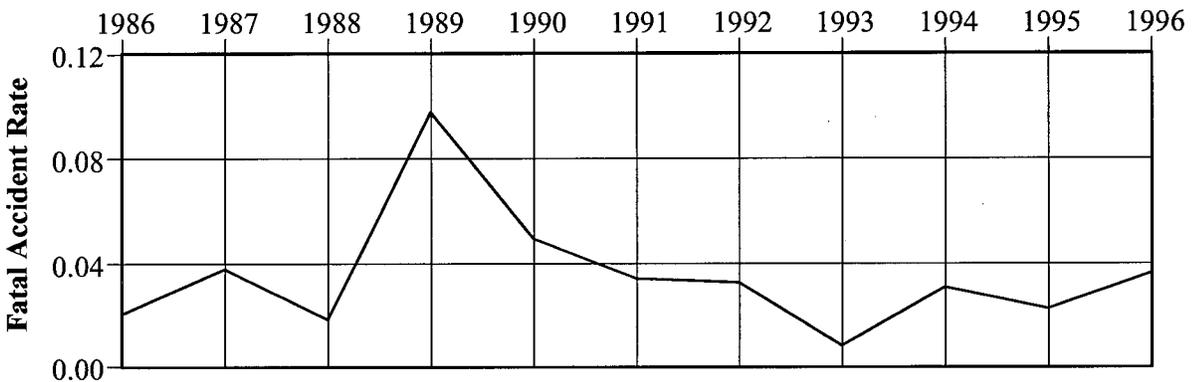
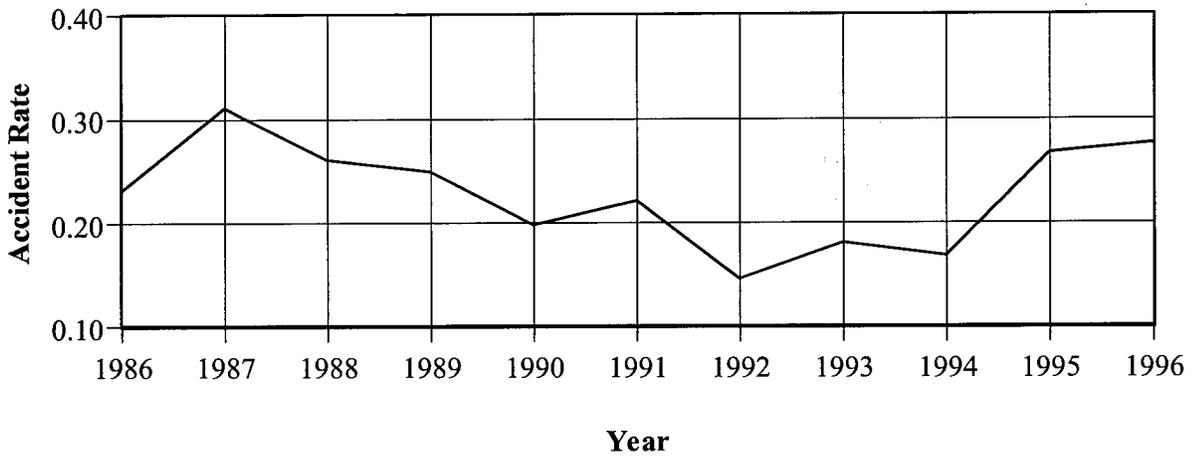
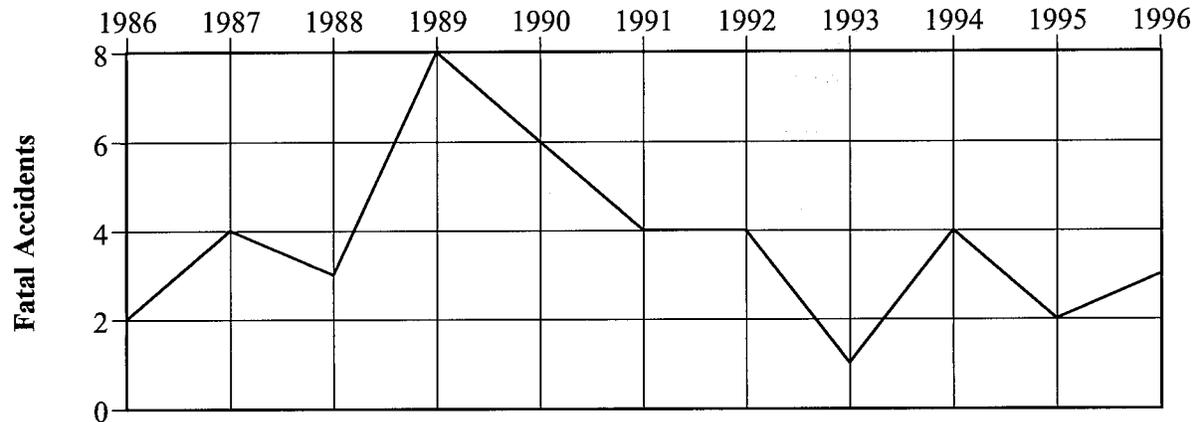
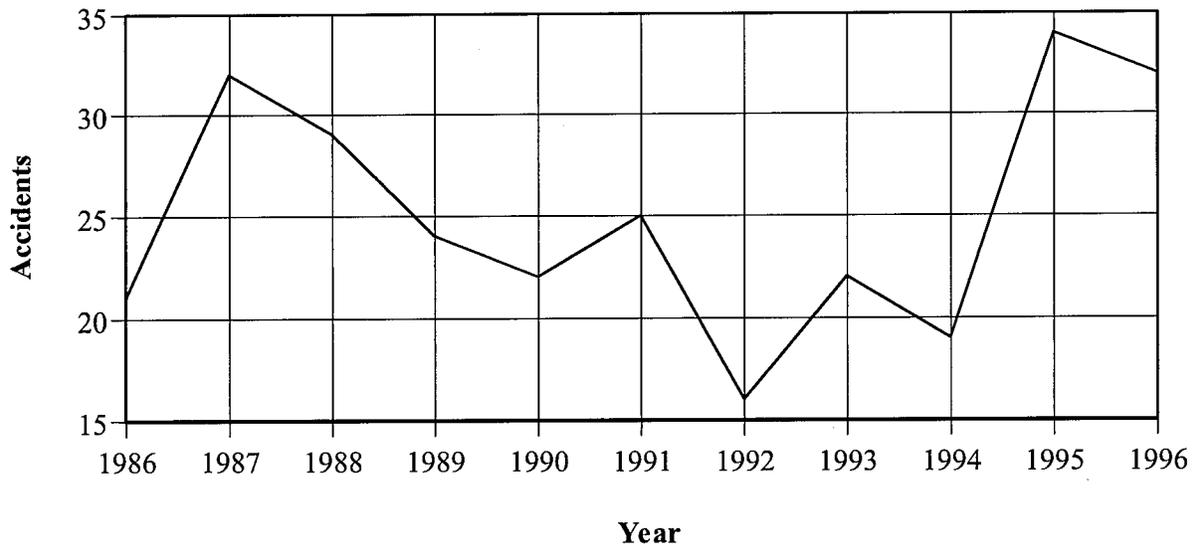


Table 15 - ACCIDENTS, FATAL ACCIDENTS, FATALITIES, AND RATES
SCHEDULED 14 CFR 121 OPERATIONS
1986 - 1996

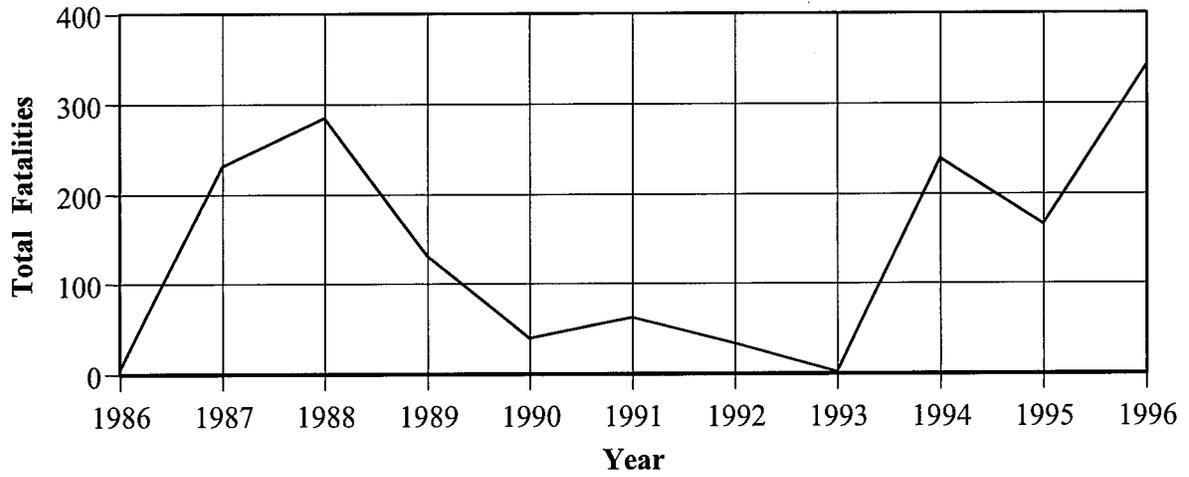
Year	Accidents	Fatal Accidents	Fatalities		Accident Rate per 100,000* Aircraft Hours Flown		
			Total	Aboard Aircraft In This Category	Hours Flown	Total	Fatal
1986	21	2	5	4	9,495,158	0.211	0.011
1987	32	4	231	229	10,115,407	0.306	0.030
1988	29	3	285	274	10,521,052	0.266	0.019
1989	24	8	131	130	10,597,922	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

* Suicide and sabotage accidents excluded from rates as follows:
Total - 1986 (1), 1987 (1), 1988 (1), 1994 (1)
Fatal - 1986 (1), 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**

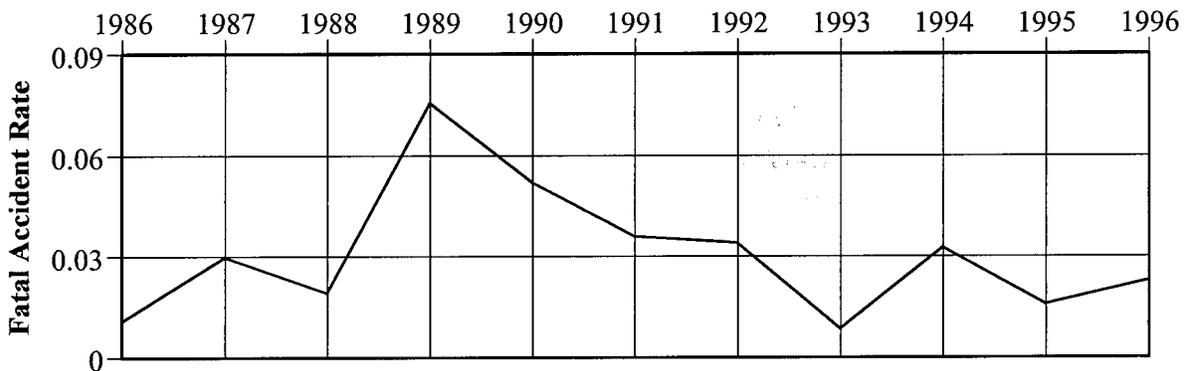
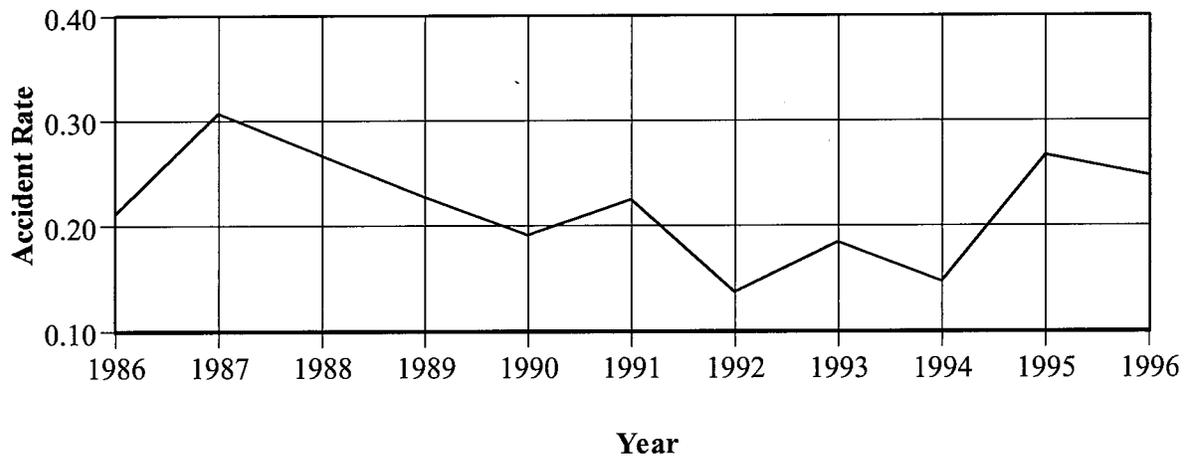
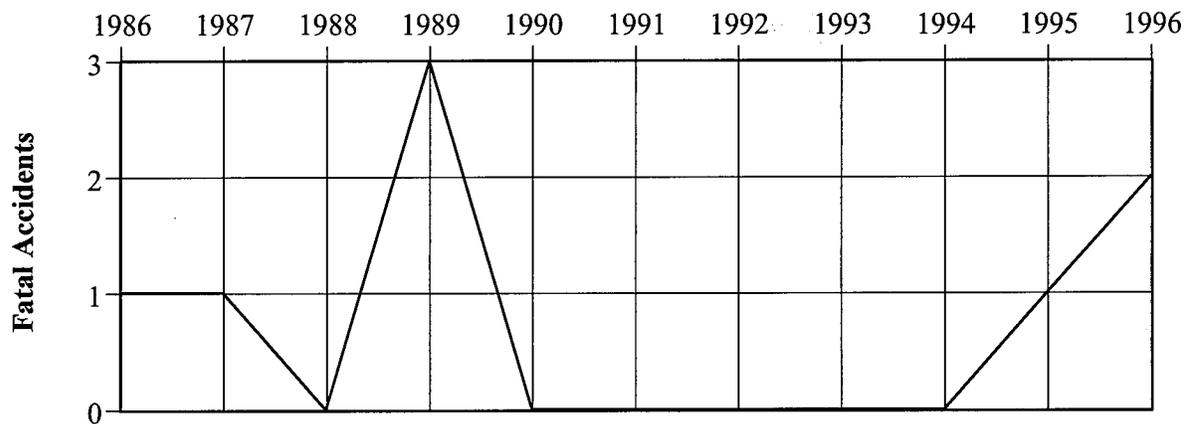
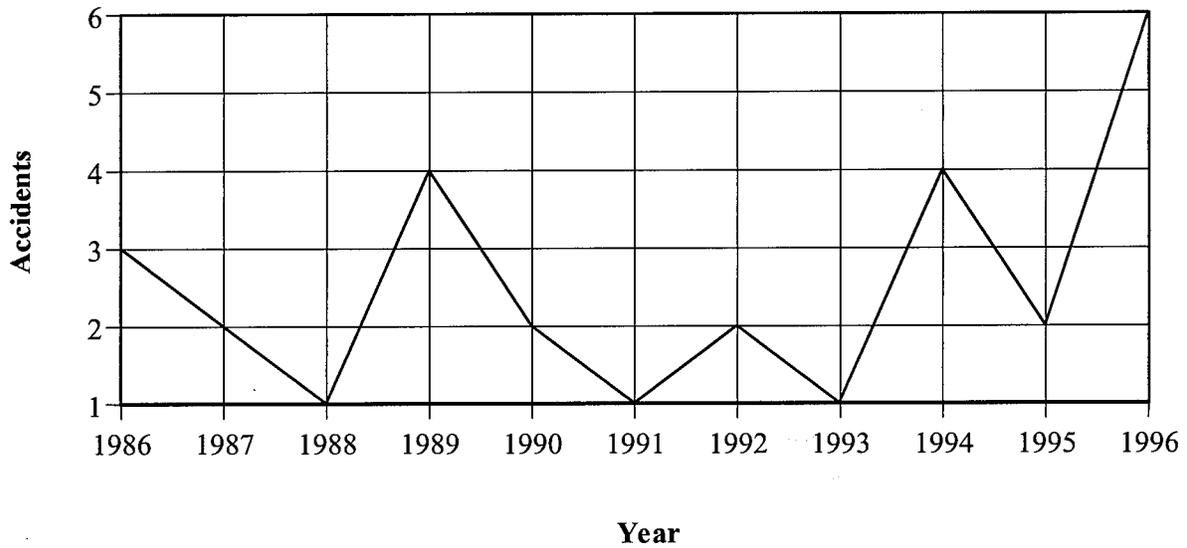


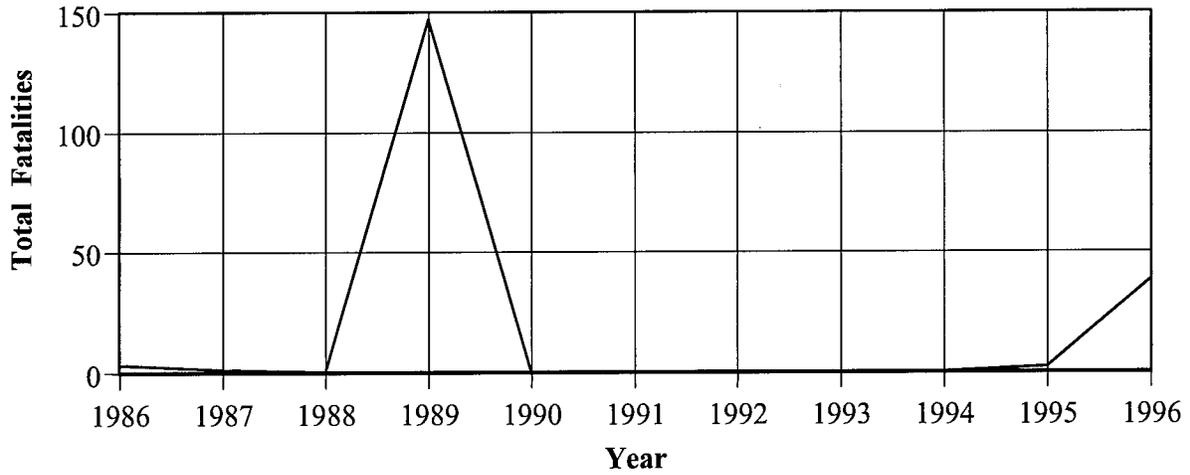
Table 16 - ACCIDENTS, FATAL ACCIDENTS, FATALITIES, AND RATES
 NONSCHEDULED 14 CFR 121 OPERATIONS
 1986 - 1996

Year	Accidents	Fatal Accidents	Fatalities		Accident Rate per 100,000* Aircraft Hours Flown		
			Total	Aboard Aircraft In This Category	Hours Flown	Total	Fatal
1986	3	1	3	3	480,946	0.624	0.208
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	6	2	38	8	774,436	0.775	0.258

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**

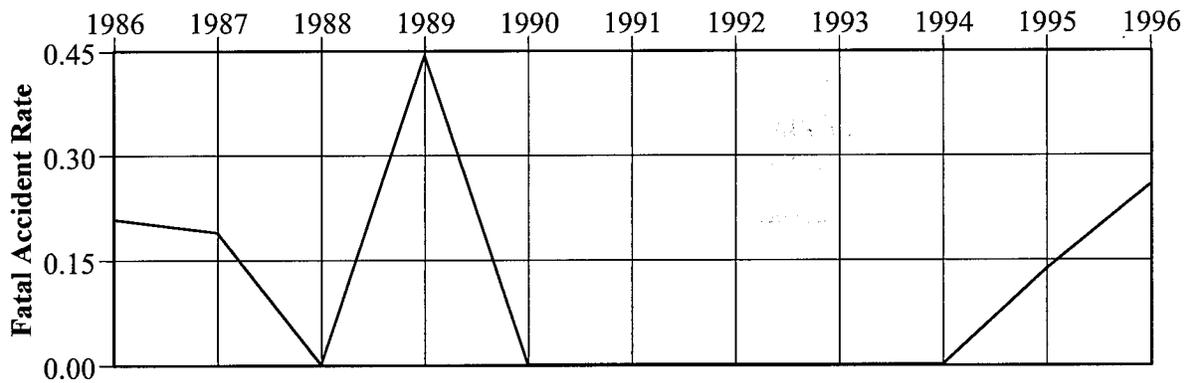
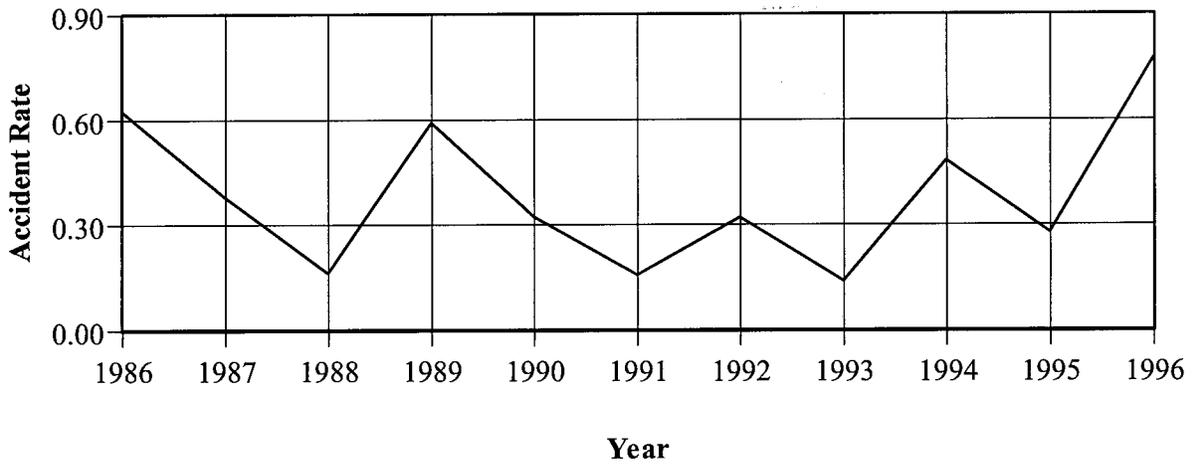


Table 17 - FIRST OCCURRENCES IN ALL ACCIDENTS AND IN FATAL ACCIDENTS
 14 CFR 121 OPERATIONS
 1996 AND 1986 - 1995

Type of Occurrence	All Accidents				Fatal Accidents			
	1996		1986 - 1995		1996		1986 - 1995	
	No.	Percent	Mean	Percent	No.	Percent	Mean	Percent
In flight encounter with weather	9	22.5	6.2	22.9	0	0.0	0.1	2.3
On ground collision with object	3	7.5	4.0	14.8	0	.0	1.0	22.7
Airframe/component/system failure/ malfunction	7	17.5	3.7	13.7	0	.0	.6	13.6
Miscellaneous/other	3	7.5	2.8	10.3	0	.0	.2	4.5
Not reported	1	2.5	1.2	4.4	1	20.0	.5	11.4
Loss of control - in flight	0	.0	1.2	4.4	0	.0	1.0	22.7
Hard landing	1	2.5	.7	2.6	0	.0	.0	.0
In flight collision with terrain	0	.0	.6	2.2	0	.0	.3	6.8
On ground collision with terrain	0	.0	.6	2.2	0	.0	.0	.0
Loss of engine power(total) - mechanical failure/malfunction	3	7.5	.6	2.2	2	40.0	.0	.0
Altitude deviation,uncontrolled	0	.0	.5	1.8	0	.0	.0	.0
In flight collision with object	1	2.5	.5	1.8	0	.0	.1	2.3
Loss of control - on ground	0	.0	.4	1.5	0	.0	.1	2.3
Overrun	0	.0	.4	1.5	0	.0	.0	.0
Collision between aircraft (other than midair)	4	10.0	.4	1.5	0	.0	.0	.0
Abrupt maneuver	1	2.5	.3	1.1	0	.0	.1	2.3
Fire/explosion	0	.0	.3	1.1	0	.0	.0	.0
Fire	2	5.0	.3	1.1	1	20.0	.0	.0
Main gear collapsed	0	.0	.3	1.1	0	.0	.0	.0
Loss of engine power(total) - non-mechanical	0	.0	.3	1.1	0	.0	.0	.0
Propeller blast or jet exhaust	0	.0	.3	1.1	0	.0	.0	.0
Dragged wing, rotor, pod, or float	1	2.5	.2	.7	0	.0	.0	.0
On ground encounter with weather	0	.0	.2	.7	0	.0	.1	2.3
Propeller/rotor contact to person	0	.0	.2	.7	0	.0	.1	2.3
Explosion	1	2.5	.1	.4	1	20.0	.1	2.3
Nose gear collapsed	0	.0	.1	.4	0	.0	.0	.0
Tail gear collapsed	0	.0	.1	.4	0	.0	.0	.0
Midair collision	0	.0	.1	.4	0	.0	.0	.0
Loss of engine power	0	.0	.1	.4	0	.0	.1	2.3
Loss of engine power(partial) - mechanical failure/malfunction	0	.0	.1	.4	0	.0	.0	.0
Engine tearaway	0	.0	.1	.4	0	.0	.0	.0
Undershoot	0	.0	.1	.4	0	.0	.0	.0
Wheels up landing	2	5.0	.1	.4	0	.0	.0	.0
Vortex turbulence encountered	1	2.5	.0	.0	0	.0	.0	.0
Total	40	100.0	27.1	100.0	5	100.0	4.4	100.0

Table 18 - FIRST PHASES OF OPERATION IN ALL ACCIDENTS AND IN FATAL ACCIDENTS
 14 CFR 121 OPERATIONS
 1996 AND 1986 - 1995

Phase of Operation	All Accidents				Fatal Accidents			
	1996		1986 - 1995		1996		1986 - 1995	
	No.	Percent	Mean	Percent	No.	Percent	Mean	Percent
Cruise	7	17.5	5.0	18.5	1	20.0	.6	13.6
Taxi	7	17.5	4.4	16.2	0	.0	.5	11.4
Takeoff	5	12.5	3.3	12.2	1	20.0	1.1	25.0
Landing	5	12.5	3.3	12.2	0	.0	.2	4.5
Standing	4	10.0	2.8	10.3	0	.0	.5	11.4
Descent	6	15.0	2.8	10.3	0	.0	.0	.0
Climb	2	5.0	2.0	7.4	2	40.0	.2	4.5
Approach	3	7.5	1.9	7.0	0	.0	.7	15.9
Not reported	1	2.5	1.2	4.4	1	20.0	.5	11.4
Maneuvering	0	.0	.3	1.1	0	.0	.1	.0
Other	0	.0	.1	.4	0	.0	.0	.0
Total Aircraft	40	100.0	27.1	100.0	5	100.0	4.4	100.0

Table 19 - BROAD CAUSE/FACTOR ASSIGNMENTS IN ALL ACCIDENTS AND IN FATAL ACCIDENTS
 14 CFR 121 OPERATIONS
 1996 AND 1986 - 1995

Broad Cause/Factor	All Accidents				Fatal Accidents			
	1996		1986 - 1995		1996		1986 - 1995	
	No.	Percent	Mean	Percent	No.	Percent	Mean	Percent
Other Person (Not Aboard)	16	40.0	10.6	39.1	2	40.0	2.5	56.8
Pilot	7	17.5	8.6	31.7	0	.0	1.4	31.8
Weather	12	30.0	7.6	28.0	0	.0	.8	18.2
Other Person (Aboard)	6	15.0	5.0	18.5	0	.0	.2	4.5
Systems/Equipment/Instruments	8	20.0	3.8	14.0	2	40.0	.8	18.2
Propulsion System and Controls	3	7.5	2.2	8.1	2	40.0	.1	2.3
Object (tree,wires,etc)	2	5.0	1.3	4.8	0	.0	.3	6.8
Airframe	1	2.5	1.2	4.4	1	20.0	.6	13.6
Landing Gear	2	5.0	1.2	4.4	0	.0	.1	2.3
Light Conditions	3	7.5	.9	3.3	0	.0	.1	2.3
Terrain/Runway Condition	1	2.5	.8	3.0	0	.0	.1	2.3
Flight Control System	1	2.5	.5	1.8	0	.0	.2	4.5
Airport/Airways Facilities, Aids	1	2.5	.4	1.5	0	.0	.3	6.8
Total Aircraft	40	100.0	27.1	100.0	5	100.0	4.4	100.0
NTSB Determined Probable Cause	35		24.7		3		3.6	

Scheduled 14 CFR 135 OPERATIONS

There were 11 accidents involving scheduled 14 CFR 135 operations (commuter air carriers) in 1996. The average number of accidents per year in this category for the years 1986 through 1995 was 18.3. The accident rate per 100,000 hours flown for 1996 was 0.399, compared with 0.791 for the period 1986 through 1995.

One fatal accident resulted in 14 fatalities. The annual averages for the period 1986 through 1995 were an average of 4.6 fatal accidents and 29.9 fatalities per year in scheduled 14 CFR 135 operations. The fatal accident rate for 1996 was 0.036 per 100,000 hours flown.

Table 20 - SUMMARY OF LOSSES
SCHEDULED 14 CFR 135 OPERATIONS
1986 - 1996

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Accidents											
Fatal	2	10	2	5	3	8	7	4	3	2	1
Serious Injury	2	5	2	2	2	3	1	2	1	2	1
Minor Injury	1	6	2	3	1	3	3	2	1	0	5
No Injury	9	12	12	9	9	9	12	8	5	8	4
Total	14	33	18	19	15	23	23	16	10	12	11
Fatalities											
Passenger	3	42	17	25	3	64	13	19	19	7	10
Crew	1	15	4	6	1	13	8	4	6	2	2
Other Persons	0	2	0	0	2	22	0	1	0	0	2
Total	4	59	21	31	6	99	21	24	25	9	14
Aircraft Damage											
Destroyed	1	11	3	5	2	9	7	4	3	3	1
Substantial	12	19	14	14	12	13	16	10	6	9	10
Minor	1	2	1	0	1	0	0	0	1	0	0
None	1	1	0	1	0	1	0	2	0	0	0
Total	15^a	33	18	20^a	15	23	23	16	10	12	11

^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
1986 - 1996

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Accidents Rates ^d											
Miles Flown ^b	.046	.094	.047	.048	.033	.053	.043	.029	.017	.022	.019
Hours Flown ^c	.812	1.695	.860	.848	.641	1.004	.942	.606	.359	.457	.399
Departures Flown ^c	.500	1.174	.619	.674	.475	.815	.706	.444	.279	.373	.313
Fatal Accident Rates ^d											
Miles Flown ^b	.007	.029	.005	.013	.007	.018	.014	.007	.005	.004	.002
Hours Flown ^c	.116	.514	.096	.223	.128	.349	.300	.152	.108	.076	.036
Departures Flown ^c	.071	.356	.069	.177	.095	.284	.225	.111	.084	.062	.028

^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
1996

Date	Location	Type of Operation	Air Carrier	Aircraft Type	Aircraft Damage	Degree of Injury	First Occurrence
2/07	Bradford, PA	Passenger	Liberty Airlines	Beech 1900D	Substantial	Minor	Hard landing
3/02	Nome, AK	Passenger	Grant Aviation	Piper PA-32-301	Substantial	Minor	In flight encounter with weather
4/07	Virgin Gorda, VI	Passenger	Dolphin Express	DeHavilland DH6	Substantial	Minor	Loss of control - on ground
5/02	Denver, CO	Passenger	Mesa Airlines	Beech 1900D	Substantial	None	Gear retraction on ground
5/03	St. George, AK	Pax/Cargo	Penair	Swearingen SW-4	Substantial	None	In flight collision with terrain
5/21	Barrow, AK	Pax/Cargo	Cape Smythe Air	Beech 99C	Substantial	Minor	In flight collision with Object
5/24	Point Hope, AK	Pax/Cargo	Cape Smythe Air	Piper PA-31-350	Substantial	Serious	Airframe/component/system failure/malfunction
6/23	Orlando, FL	Passenger	Comair	Embraer 120	Substantial	None	Airframe/component/system failure/malfunction
6/25	Grand Forks, ND	Passenger	Mesaba Airlines	Fairchild SA227AC	Substantial	None	Loss of power (partial) - mech. failure/malfunction
8/05	St. Barthelemy, French Antilles	Passenger	Virgin Air	Cessna 402B	Substantial	Minor	Overrun
11/19	Quincy, IL	Passenger	Great Lakes Aviation	Beech 1900C	Destroyed	Fatal (14)	Collision between aircraft (other than midair)

Table 23 - PERSONS BY ROLE AND DEGREE OF INJURY
SCHEDULED 14 CFR 135 OPERATIONS
1996

Role of Person	Degree of Injury				Total
	Fatal	Serious	Minor	None	
Pilot	1	1	0	9	11
Copilot	1	0	1	6	8
Cabin attendants	0	0	0	1	1
Passenger	10	1	7	94	112
Total aboard	12	2	8	110	132
Other aircraft*	2	0	0	0	2
Grand total	14	2	8	110	134
Percent	10.4	1.5	6.0	82.1	

* 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
1996

Aircraft damage	Degree of injury				Aircraft	
	None	Minor	Serious	Fatal	No.	Percent
Substantial	4	5	1	0	10	90.9
Destroyed	0	0	0	1	1	9.1
Aircraft Number -	4	5	1	1	11	
Percent -	36.4	45.5	9.1	9.1		

Table 25 - AIRCRAFT BY FIRST OCCURRENCE AND DEGREE OF INJURY AND BY DAMAGE
SCHEDULED 14 CFR 135 OPERATIONS
1996

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	1	0	1	0	0	0	2	0	2	18.2
Gear retraction on ground	1	0	0	0	0	0	1	0	1	9.1
Hard landing	0	1	0	0	0	0	1	0	1	9.1
In flight collision with object	0	1	0	0	0	0	1	0	1	9.1
In flight collision with terrain	1	0	0	0	0	0	1	0	1	9.1
In flight encounter with weather	0	1	0	0	0	0	1	0	1	9.1
Loss of control - on ground	0	1	0	0	0	0	1	0	1	9.1
Collision between aircraft (other than midair)	0	0	0	1	0	0	0	1	1	9.1
Overrun	0	1	0	0	0	0	1	0	1	9.1
Loss of power (partial) - mechanical failure/malfunction	1	0	0	0	0	0	1	0	1	9.1
Aircraft Number -	4	5	1	1	0	0	10	1	11	
Percent -	36.4	45.5	9.1	9.1	.0	.0	90.9	9.1		

Table 26 - AIRCRAFT BY FIRST OCCURRENCE AND BROAD PHASE OF OPERATION
SCHEDULED 14 CFR 135 OPERATIONS
1996

Type of first occurrence	Phase of operation					Aircraft	
	Take-off	Climb	Cruise	Descent	Landing	No.	Percent
Airframe/component/system failure/malfunction	1	0	0	1	0	2	18.2
Gear retraction on ground	0	0	0	0	1	1	9.1
Hard landing	0	0	0	0	1	1	9.1
In flight collision with object	0	0	1	0	0	1	9.1
In flight collision with terrain	0	0	0	0	1	1	9.1
In flight encounter with weather	0	0	1	0	0	1	9.1
Loss of control - on ground	1	0	0	0	0	1	9.1
Collision between aircraft (other than midair)	0	0	0	0	1	1	9.1
Overrun	1	0	0	0	0	1	9.1
Loss of power (partial) - mechanical failure/malfunction	0	1	0	0	0	1	9.1
Aircraft							
Number -	3	1	2	1	4	11	
Percent -	27.3	9.1	18.2	9.1	36.4		

Table 27 - AIRCRAFT BY PHASE OF OPERATION AND DEGREE OF INJURY AND BY DAMAGE
SCHEDULED 14 CFR 135 OPERATIONS
1996

Phase of operation *	Degree of injury				Aircraft damage				Aircraft	
	None	Minor	Seri-ous	Fatal	None	Minor	Substantial	De-struct	No.	Percent
Takeoff - roll/run	0	1	0	0	0	0	1	0	1	9.1
Takeoff - initial climb	0	0	1	0	0	0	1	0	1	9.1
Takeoff - aborted	0	1	0	0	0	0	1	0	1	9.1
Climb	1	0	0	0	0	0	1	0	1	9.1
Cruise	0	2	0	0	0	0	2	0	2	18.2
Descent	1	0	0	0	0	0	1	0	1	9.1
Landing	1	0	0	0	0	0	1	0	1	9.1
Landing - flare/touchdown	0	1	0	0	0	0	1	0	1	9.1
Landing - roll	0	0	0	1	0	0	0	1	1	9.1
Landing - aborted	1	0	0	0	0	0	1	0	1	9.1
Aircraft										
Number -	4	5	1	1	0	0	10	1	11	
Percent -	36.4	45.5	9.1	9.1	.0	.0	90.9	9.1		

* 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
1996

Condition of light	Type of weather		Aircraft	
	VMC	IMC	No.	Percent
Daylight	5	3	8	72.7
Dusk	1	0	1	9.1
Not reported	2	0	2	18.2
Aircraft Number -	8	3	11	
Percent -	72.7	27.3		

Table 29 - AIRCRAFT BY TYPE OF OPERATION AND DEGREE OF INJURY
SCHEDULED 14 CFR 135 OPERATIONS
1996

Type of Operation	Degree of Injury				Aircraft	
	None	Minor	Serious	Fatal	No.	Percent
Scheduled Domestic Passenger	3	2	0	1	6	54.5
Scheduled Domestic Pax/Cargo	1	1	1	0	3	27.3
Scheduled International Passenger	0	2	0	0	2	18.2
Aircraft Number -	4	5	1	1	11	
Percent -	36.4	45.5	9.1	9.1		

Table 30 - AIRCRAFT BY PROXIMITY TO AIRPORT AND FLIGHT PLAN
SCHEDULED 14 CFR 135 OPERATIONS
1996

Accident location	Flight Plan			Aircraft	
	VFR	IFR	Cmpny VFR	No.	Percent
Off Airport/Airstrip	1	2	1	4	36.4
On Airport	1	4	0	5	45.5
Other	1	1	0	2	18.2
Aircraft Number -	3	7	1	11	
Percent -	27.3	63.6	9.1		

Table 31 - AIRCRAFT BY OCCURRENCE OF FIRE AND DEGREE OF INJURY AND BY DAMAGE
SCHEDULED 14 CFR 135 OPERATIONS
1996

Aircraft fire	Degree of injury				Aircraft damage				Aircraft	
	None	Minor	Seri- ous	Fatal	None	Minor	Substan- tial	Dest	No.	Percent
None	4	5	1	0	0	0	10	0	10	90.9
On ground	0	0	0	1	0	0	0	1	1	9.1
Aircraft										
Number -	4	5	1	1	0	0	10	1	11	
Percent -	36.4	45.5	9.1	9.1	.0	.0	90.9	9.1		

Table 32 - AIRCRAFT BY TYPE OF AIRCRAFT AND DEGREE OF INJURY AND BY DAMAGE
SCHEDULED 14 CFR 135 OPERATIONS
1996

Type of aircraft	Degree of injury				Aircraft damage				Aircraft	
	None	Minor	Seri- ous	Fatal	None	Minor	Substan- tial	Dest	No.	Percent
Fixed Wing - Single Reciprocating Engine	0	1	0	0	0	0	1	0	1	9.1
Fixed Wing - Multiengine	0	1	1	0	0	0	2	0	2	18.2
Fixed Wing - Turboprop	4	3	0	1	0	0	7	1	8	72.7
Aircraft										
Number -	4	5	1	1	0	0	10	1	11	
Percent -	36.4	45.5	9.1	9.1	.0	.0	90.9	9.1		

Table 33 - BROAD CAUSE/FACTOR ASSIGNMENTS*
 SCHEDULED 14 CFR 135 OPERATIONS
 1996

Cause/Factor	Cited as a Cause		Cited as a Factor		Cited as Either a Cause or a Factor (or Both)	
	Fatal	All	Fatal	All	Fatal	All
	Accidents	Accidents	Accidents	Accidents	Accidents	Accidents
Aircraft #	0	4	0	2	0	4
Propulsion System and Controls	0	1	0	1	0	1
Airframe	0	1	0	0	0	1
Landing Gear	0	1	0	0	0	1
Systems/Equipment/Instruments	0	1	0	1	0	1
Environment #	0	1	1	2	1	3
Weather	0	0	0	1	0	1
Object (trees, wires, etc.)	0	1	0	0	0	1
Airport/Airways Facilities, Aids	0	0	1	1	1	1
Terrain/Runway Condition	0	0	0	1	0	1
Personnel #	1	6	1	3	1	6
Pilot	0	4	0	2	0	4
Others (Not Aboard)	1	2	1	1	1	2
Number of Aircraft					1	11
NTSB Determined Probable Cause					1	9

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

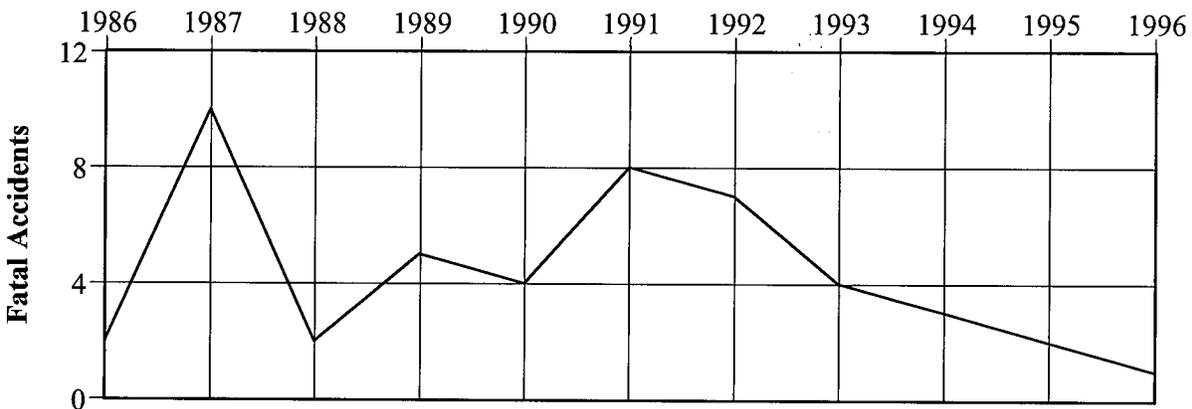
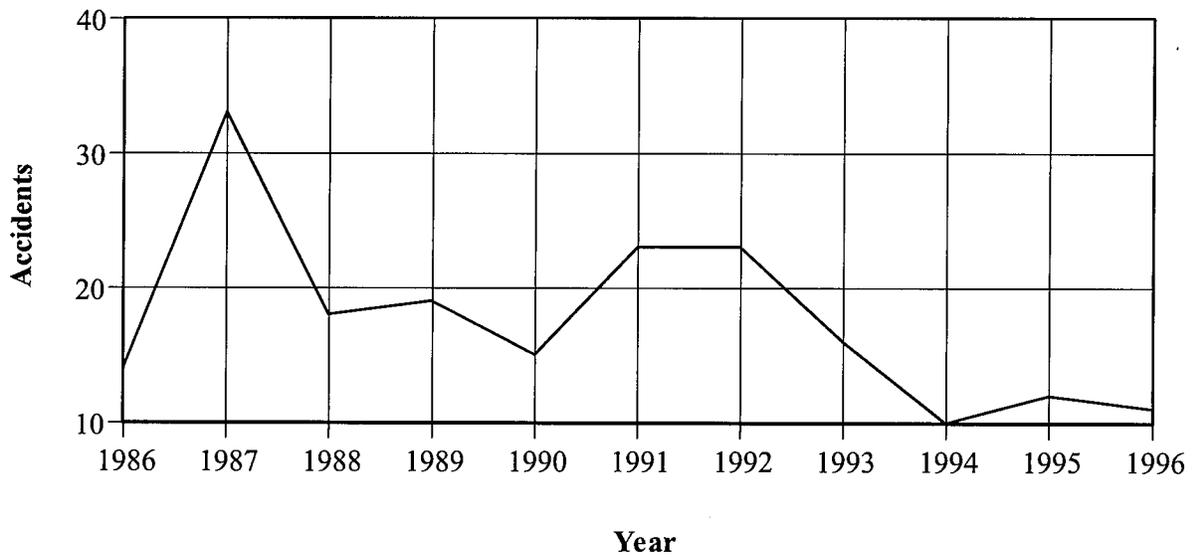
This category is composed of the sub-categories indented below it. The number of aircraft cited in a category may be less than or equal to the sum of the sub-category citations.

Table 34 - ACCIDENTS, FATAL ACCIDENTS, FATALITIES, AND RATES
SCHEDULED 14 CFR 135 OPERATIONS
1986 - 1996

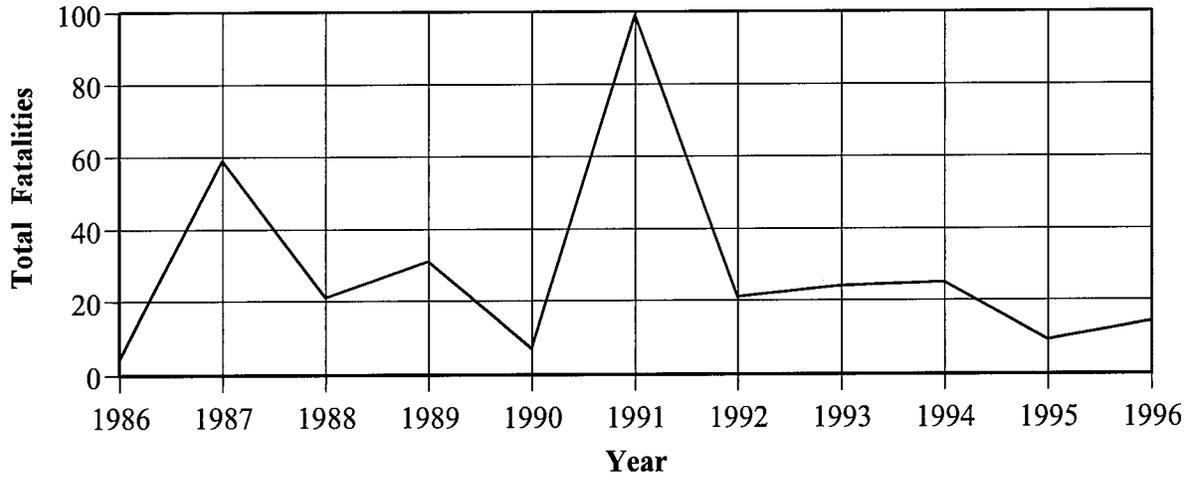
Year	Accidents	Fatal Accidents	Fatalities		Accident Rate per 100,000* Aircraft Hours Flown		
			Total	Aboard Aircraft In This Category	Hours Flown	Total	Fatal
1986	14	2	4	4	1,724,586	0.812	0.116
1987	33	10	59	57	1,946,349	1.695	0.514
1988	18	2	21	21	2,092,689	0.860	0.096
1989	19	5	31	31	2,240,555	0.848	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

* 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**

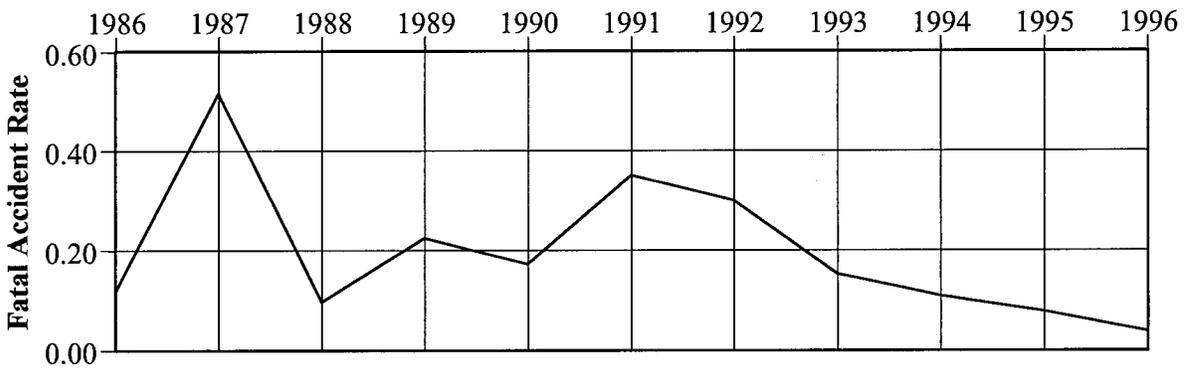
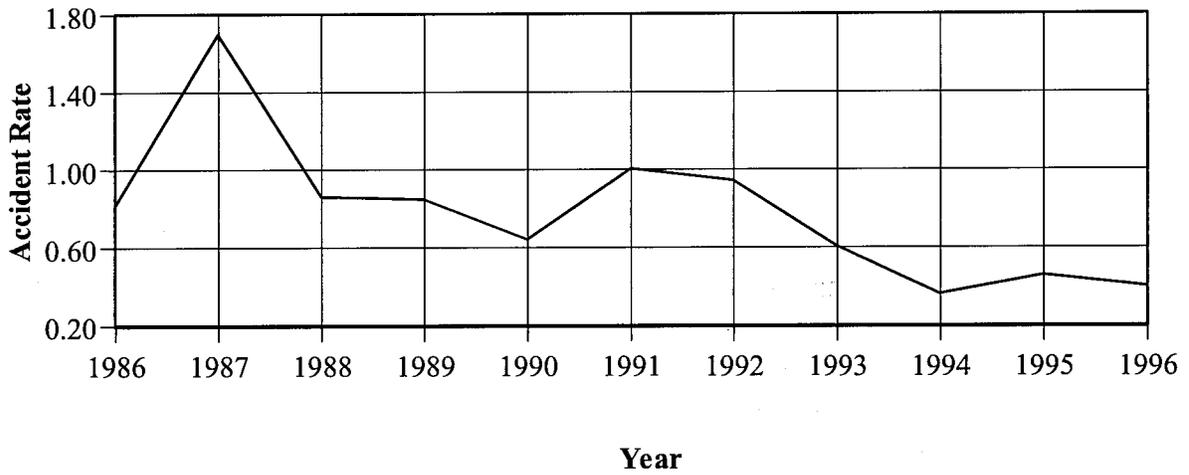


Table 35 - FIRST OCCURRENCES IN ALL ACCIDENTS AND IN FATAL ACCIDENTS
SCHEDULED 14 CFR 135 OPERATIONS
1996 AND 1986 - 1995

Type of Occurrence	All Accidents				Fatal Accidents			
	1996		1986 - 1995		1996		1986 - 1995	
	No.	Percent	Mean	Percent	No.	Percent	Mean	Percent
On ground collision with object	0	.0	2.7	14.6	0	.0	.1	2.2
Loss of control - in flight	0	.0	2.3	12.4	0	.0	1.1	23.9
In flight collision with terrain	1	9.1	2.2	11.9	0	.0	1.1	23.9
In flight encounter with weather	1	9.1	1.9	10.3	0	.0	.9	19.6
Airframe/component/system failure/ malfunction	2	18.2	1.4	7.6	0	.0	.3	6.5
Loss of control - on ground	1	9.1	.8	4.3	0	.0	.0	.0
Hard landing	1	9.1	.5	2.7	0	.0	.0	.0
In flight collision with object	1	9.1	.5	2.7	0	.0	.1	2.2
Overrun	1	9.1	.5	2.7	0	.0	.0	.0
Loss of engine power(total) - non-mechanical	0	.0	.5	2.7	0	.0	.1	2.2
Undershoot	0	.0	.5	2.7	0	.0	.0	.0
Gear not extended	0	.0	.4	2.2	0	.0	.0	.0
Midair collision	0	.0	.4	2.2	0	.0	.2	4.3
Loss of engine power(total) - mechanical failure/malfunction	0	.0	.4	2.2	0	.0	.0	.0
Propeller/rotor contact to person	0	.0	.4	2.2	0	.0	.1	2.2
Not reported	0	.0	.3	1.6	0	.0	.1	2.2
Nose gear collapsed	0	.0	.3	1.6	0	.0	.0	.0
On ground encounter with terrain	0	.0	.3	1.6	0	.0	.0	.0
Loss of engine power(partial)- mechanical failure/malfunction	1	9.1	.3	1.6	0	.0	.1	2.2
Vortex turbulence encountered	0	.0	.3	1.6	0	.0	.1	2.2
Miscellaneous/other	0	.0	.3	1.6	0	.0	.0	.0
Main gear collapsed	0	.0	.2	1.1	0	.0	.0	.0
Complete gear collapsed	0	.0	.2	1.1	0	.0	.0	.0
Loss of engine power	0	.0	.2	1.1	0	.0	.2	4.3
Loss of engine power(partial) - non-mechanical	0	.0	.2	1.1	0	.0	.0	.0
Dragged wing, rotor, pod or float	0	.0	.1	.5	0	.0	.0	.0
Fire	0	.0	.1	.5	0	.0	.0	.0
Explosion	0	.0	.1	.5	0	.0	.0	.0
Undetermined	0	.0	.1	.5	0	.0	.0	.0
Propeller failure/malfunction	0	.0	.1	.5	0	.0	.1	2.2
Gear retraction on ground	1	9.1	.0	.0	0	.0	.0	.0
Collision between aircraft (other than midair)	1	9.1	.0	.0	1	100.0	.0	.0
Total	11	100.0	18.5	100.0	1	100.0	4.6	100.0

Table 36 - FIRST PHASES OF OPERATION IN ALL ACCIDENTS AND IN FATAL ACCIDENTS
SCHEDULED 14 CFR 135 OPERATIONS
1996 AND 1986 - 1995

Phase of operation	All Accidents				Fatal Accidents			
	1996		1986 - 1995		1996		1986 - 1995	
	No.	Percent	Mean	Percent	No.	Percent	Mean	Percent
Landing	4	36.4	3.3	17.8	1	100.0	.0	.0
Approach	0	.0	3.1	16.8	0	.0	1.7	37.0
Taxi	0	.0	2.7	14.6	0	.0	.0	.0
Takeoff	3	27.3	2.7	14.6	0	.0	.4	8.7
Cruise	2	18.2	1.8	9.7	0	.0	1.1	23.9
Standing	0	.0	1.3	7.0	0	.0	.2	4.3
Descent	1	9.1	1.1	5.9	0	.0	.2	4.3
Maneuvering	0	.0	1.1	5.9	0	.0	.6	13.0
Climb	1	9.1	.7	3.8	0	.0	.2	4.3
Not reported	0	.0	.4	2.2	0	.0	.2	4.3
Other	0	.0	.3	1.6	0	.0	.0	.0
Total Aircraft	11	100.0	18.5	100.0	1	100.0	4.6	100.0

Table 37 - BROAD CAUSE/FACTOR ASSIGNMENTS IN ALL ACCIDENTS AND IN FATAL ACCIDENTS
SCHEDULED 14 CFR 135 OPERATIONS
1996 AND 1986 - 1995

Broad Cause/Factor	All Accidents				Fatal Accidents			
	1996		1986 - 1995		1996		1986 - 1995	
	No.	Percent	Mean	Percent	No.	Percent	Mean	Percent
Pilot	4	36.4	13.4	72.4	0	.0	3.7	80.4
Other Person (Not Aboard)	2	18.2	6.9	37.3	1	100.0	1.9	41.3
Weather	1	9.1	5.9	31.9	0	.0	1.9	41.3
Terrain/Runway Condition	1	9.1	4.3	23.2	0	.0	1.2	26.1
Light Conditions	0	.0	2.7	14.6	0	.0	.8	17.4
Propulsion System and Controls	1	9.1	2.0	10.8	0	.0	.6	13.0
Object (tree,wires,etc)	1	9.1	1.6	8.6	0	.0	.1	2.2
Landing Gear	1	9.1	1.3	7.0	0	.0	.0	.0
Systems/Equipment/ Instruments	1	9.1	1.3	7.0	0	.0	.4	8.7
Airframe	1	9.1	1.1	5.9	0	.0	.2	4.3
Airport/Airways Facilities, Aids	1	9.1	.8	4.3	1	100.0	.2	4.3
Flight Control System	0	.0	.5	2.7	0	.0	.3	6.5
Other Person (Aboard)	0	.0	.2	1.1	0	.0	.0	.0
Total Aircraft	11	100.0	18.5	100.0	1	100.0	4.6	100.0
NTSB Determined Probable Cause	9		18.1		1		4.4	

Nonscheduled 14 CFR 135 OPERATIONS

There were 90 accidents involving nonscheduled 14 CFR 135 aircraft (air taxis) in 1996. For the period 1986 through 1995, the average number of accidents per year in this category is 92.7 with an overall accident rate of 4.08 per 100,000 hours flown. The accident rate in 1996 was 4.44 accidents per 100,000 hours flown, a one percent increase from the 1995 rate of 4.39.

There were 29 fatal accidents that were responsible for 63 fatalities in 1996. During the period 1986 through 1995, the yearly average was 26.4 fatal accidents and 62.6 fatalities. The fatal accident rate for 1996 was 1.43 per 100,000 hours flown.

One of the accidents reported in this section involved a collision between two non-scheduled 14 CFR 135 aircraft. Therefore, this section lists 90 accidents involving 91 aircraft.

Table 38 - SUMMARY OF LOSSES
 NONSCHEDULED 14 CFR 135 OPERATIONS
 1986 - 1996

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Accidents											
Fatal	31	30	28	25	29	28	24	19	26	24	29
Serious Injury	13	9	15	12	14	10	5	8	9	5	11
Minor Injury 19	7	11	14	12	8	9	13	13	7	10	
No Injury	55	50	49	59	52	42	38	29	37	39	40
Total	118	96	103	110	107	88	76	69	85	75	90
Fatalities											
Passenger	26	31	22	46	20	42	43	20	40	29	31
Crew	35	32	33	35	29	32	22	22	22	23	32
Other Persons	4	2	4	2	2	4	3	0	1	0	0
Total	65	65	59	83	51	78	68	42	63	52	63
Aircraft Damage											
Destroyed	38	34	37	32	39	32	26	26	24	21	37
Substantial 78	61	64	79	68	53	49	44	60	54	51	
Minor	1	4	1	0	1	2	1	0	0	1	0
None	2	0	1	0	1	2	0	0	2	0	3
Total	119^a	99^a	103	111^a	109^a	89^a	76	70^a	86^a	76^a	91^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
 1986 - 1996

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Accident Rates											
Hours Flown ^b	4.39	3.61	3.91	3.64	4.76	3.93	3.86	4.16	4.58	4.39	4.44
Fatal Accident Rates											
Hours Flown ^b	1.15	1.13	1.06	0.83	1.29	1.25	1.22	1.15	1.40	1.41	1.43

^b Per Hundred Thousand Hours Flown

Table 40 - LIST OF ACCIDENTS
 NONSCHEDULED 14 CFR 135 OPERATIONS
 1996

Date	Location	Type of Operation	Aircraft Type	Aircraft Damage	Degree of Injury	First Occurrence
01/04	Miles City, MT	Passenger	Beech B100	Substantial	None	On ground collision with terrain
01/08	Spokane, WA	Passenger	Cessna 401A	Destroyed	Fatal (3)	In flight collision with object
01/12	Louisville, KY	Cargo	Cessna T210N	Destroyed	Serious	Loss of power(total) - non-mechanical
01/18	Las Vegas, NM	Cargo	Cessna T210M	Substantial	Minor	Loss of power(partial) - mechanical failure/malfunction
01/18	Smithville, TN	Cargo	Piper PA-32R-300	Substantial	Minor	In flight encounter with weather
01/22	Belle Chase, LA	Passenger	Cessna A185F	Substantial	None	Loss of control - on ground
01/24	Ypsilanti, MI	Pax and Cargo	Beech 58	Substantial	None	On ground collision with object
01/27	Mount Storm, WV	Cargo	Aerostar 601	Destroyed	Serious	Loss of power
01/29	Kamuela, HI	Mail Only	Cessna 402B	Destroyed	Fatal (1)	In flight collision with terrain
02/08	Auburn, AL	Cargo	Cessna 310L	Substantial	None	Main gear collapsed
02/10	Gulf of Mexico	Passenger	MBB BO-105	Destroyed	Fatal (2)	In flight collision with water
02/16	Estacada, OR	Cargo	Cessna 402B	Destroyed	Fatal (1)	Loss of control - in flight
02/16	Cashmere, WA	Passenger	Cessna 172P	Substantial	None	Overrun
02/21	Dallas, TX	Cargo	Beech 95-C55	Substantial	None	Airframe/component/system failure/malfunction
02/22	Portland, IN	Cargo	Cessna 310	Destroyed	Fatal (1)	In flight collision with object
02/28	Grand Canyon, AZ	Passenger	Piper PA-31-350	Substantial	None	Loss of control - on ground
03/04	Skwentna, AK	Passenger	Cessna 185F	Substantial	None	Main gear collapsed
03/13	Cripple, AK	Cargo	Cessna 185	Substantial	None	Overrun
03/17	Key West, FL	Passenger	Cessna U206G	Destroyed	Fatal (5)	Loss of power(partial) - non-mechanical
03/20	Marshfield, WI	Passenger	Cessna 310R	Substantial	None	Collision between aircraft (other than midair)

Table 40 - LIST OF ACCIDENTS (Continued)
 NONSCHEDULED 14 CFR 135 OPERATIONS
 1996

Date	Location	Type of Operation	Aircraft Type	Aircraft Damage	Degree of Injury	First Occurrence
04/01	Raleigh, NC	Passenger	Canadair Ltd CL-600S	Substantial	None	Airframe/component/system failure/malfunction
04/11	Paradise, CA	Passenger	Cessna T210N	Substantial	None	Wheels up landing
04/17	Kotzebue, AK	Cargo	Cessna 207	Destroyed	Serious	In flight encounter with weather
04/17	Whittier, AK	Passenger	Cessna 206G	Destroyed	Serious	In flight collision with terrain
04/23	Washington, DC	Cargo	Cessna 208	Substantial	None	On ground encounter with weather
04/29	Bernard, IA	Passenger	Cessna 421	Destroyed	Fatal (3)	Loss of power (partial) - mechanical failure/malfunction
05/02	Caribbean Sea	Passenger	Aero Commander 500-B	Destroyed	Fatal (3)	Missing aircraft
05/05	Gulf of Mexico	Passenger	Cessna U206G	Substantial	None	Loss of power
05/17	Fargo, ND	Cargo	Swearingen SA226TC	Substantial	None	Nose gear collapsed
06/03	Willard, OH	Passenger	Piper PA60-601P	Substantial	None	Loss of control - in flight
06/04	Akiachak, AK	Pax and Cargo	Cessna 207	Substantial	Minor	Overrun
06/05	Galena, AK	Cargo	Swearingen SA-26	Substantial	None	Loss of control - on ground
06/21	Sabine Pass, TX	Passenger	MBB BO-105	Destroyed	Fatal (4)	Airframe/component/system failure/malfunction
06/29	Grand Canyon, AZ	Passenger	Cessna 402A	Substantial	None	Undershoot
06/29	Rock Sound, Bahamas	Cargo	Beech D18S	Substantial	None	Loss of control - on ground
07/02	Jackson, WY	Cargo	Piper PA-31	Substantial	None	Nose gear collapsed
07/06	Fairbanks, AK	Pax and Cargo	Beech 18	Substantial	None	Propeller failure/malfunction
07/19	Elfin Cove, AK	Cargo	DeHavilland DHC-2	Destroyed	Fatal (1)	In flight collision with terrain
07/24	Kneeland, CA	Cargo	Piper PA-31-350	Substantial	Minor	Overrun
07/24	Warren, ID	Pax and Cargo	Bell 206B	Destroyed	Fatal (1)	Miscellaneous/other (skid snagged by a log)

Table 40 - LIST OF ACCIDENTS (Continued)
 NONSCHEDULED 14 CFR 135 OPERATIONS
 1996

Date	Location	Type of Operation	Aircraft Type	Aircraft Damage	Degree of Injury	First Occurrence
07/26	Dillingham, AK	Pax and Cargo	Grumman G-21A	None	Serious	Miscellaneous/other (tail of plane struck bystander)
07/28	Talkeetna, AK	Passenger	Cessna 185	Destroyed	Minor	On ground collision with terrain
08/02	Wainwright, AK	Cargo	Cessna 185	Substantial	None	Hard landing
08/02	New Stuyahok, AK	Cargo	DeHavilland DHC-4	Substantial	None	Nose gear collapsed
08/03	Tuntutuliak, AK	Pax and Cargo	Piper PA-32-300	None	Serious	On ground collision with object
08/03	Benton Harbor, MI	Cargo	Cessna 404	Destroyed	Serious	In flight collision with object
08/04	Healy, AK	Passenger Passenger	Douglas MD369 Cessna 185	None Substantial	Minor Minor	Midair collision
08/05	Crane Island, WA	Passenger	Cessna U206F	Substantial	None	Overrun
08/09	Gaithersburg, MD	Pax and Cargo	Piper PA-32-260	Substantial	None	On ground collision with object
08/11	Dutch Harbor, AK	Passenger	Grumman G21-G	Destroyed	Fatal (2)	Missing aircraft
08/13	Roanoke, VA	Cargo	Beech A36	Destroyed	Fatal (1)	In flight collision with terrain
08/14	Pottstown, PA	Passenger	Piper PA-31T	Substantial	None	Loss of control - on ground
08/15	Cody, WY	Passenger	Cessna A185E	Substantial	None	Loss of control - on ground
08/21	Opa Locka, FL	Cargo	Cessna 210M	Substantial	None	Loss of power
08/30	Port Alsworth, AK	Passenger	Cessna 180	Substantial	Serious	Loss of power (total) - non-mechanical
09/01	Haines, AK	Passenger	Piper PA-32	Substantial	Serious	In flight encounter with weather
09/01	Skwentna, AK	Passenger	Piper PA-28-161	Substantial	Minor	Loss of power (total) - mechanical failure/malfunction
09/02	Port Alsworth, AK	Passenger	Cessna 206	Substantial	None	In flight collision with terrain
09/03	Port Alsworth, AK	Cargo	Cessna 206	Substantial	Minor	Loss of control - in flight
09/05	Corsicana, TX	Cargo	Beech D55	Destroyed	Fatal (1)	Airframe/component/system failure/malfunction
09/13	Cantwell, AK	Passenger	Bell 206B	Destroyed	Serious	In flight encounter with weather

Table 40 - LIST OF ACCIDENTS (Continued)
 NONSCHEDULED 14 CFR 135 OPERATIONS
 1996

Date	Location	Type of Operation	Aircraft Type	Aircraft Damage	Degree of Injury	First Occurrence
09/13	Morgan City, LA	Passenger	Bell 206L-1	Substantial	Minor	Rotor failure/malfunction
09/16	Findlay Twnshp, PA	Cargo	Short SC7	Destroyed	None	Loss of power (total) - non-mechanical
09/23	Anchorage, AK	Passenger	Cessna 206G	Destroyed	Fatal (3)	Loss of power (partial) - mechanical failure/malfunction
09/24	Aniak, AK	Pax and Cargo	DeHavilland DHC-2	Substantial	None	On ground collision with terrain
09/28	Chillicothe, OH	Passenger	Mitsubishi MU-2B-30	Substantial	None	Loss of power
10/08	Cle Elum, WA	Cargo	Piper PA-34-200T	Substantial	Fatal (1)	Loss of control - in flight
10/13	Ketchikan, AK	Passenger	DeHavilland DHC-2	Destroyed	Fatal (3)	In flight encounter with weather
10/14	Venice, LA	Passenger	Bell 206L-3	Substantial	None	Loss of power (partial) - non-mechanical
10/15	Phoenix, AZ	Passenger	Aero Commander 690	Substantial	None	Airframe/component/system failure/malfunction
10/18	Pasadena, MD	Cargo	Cessna 310Q	Destroyed	Serious	Loss of power (total) - non-mechanical
10/20	Eel River Cross, Canada	Passenger	Piper PA-31-350	Destroyed	Fatal (8)	Loss of power (partial) - mechanical failure/malfunction
10/31	St. Vincent, British West Indies	Cargo	Piper PA-32-300	Destroyed	Fatal (2)	Missing aircraft
11/07	Bruneau, ID	Passenger	Piper PA-28-151	Substantial	None	On ground collision with terrain
11/12	Hana, HI	Passenger	Douglas 369D	Substantial	None	Loss of power (total) - mechanical failure/malfunction
11/14	Van Nuys, CA	Cargo	Cessna 310I	Destroyed	Fatal (1)	Loss of control - in flight
11/15	Springfield, MO	Cargo	Cessna T210N	Destroyed	Fatal (1)	In flight collision with terrain
11/26	Bethel, AK	Cargo	Cessna 208B	Destroyed	Fatal (1)	Undetermined
11/28	High Island A20, Gulf of Mexico	Passenger	Eurocopter AS350B2	Destroyed	Fatal (3)	Airframe/component/system failure/malfunction
11/30	Marshall, AK	Passenger	Cessna 185	Destroyed	Fatal (2)	Loss of control - in flight

Table 40 - LIST OF ACCIDENTS (Continued)
 NONSCHEDULED 14 CFR 135 OPERATIONS
 1996

Date	Location	Type of Operation	Aircraft Type	Aircraft Damage	Degree of Injury	First Occurrence
12/04	Bethel, AK	Passenger	Cessna 172M	Substantial	None	In flight collision with terrain
12/05	Nunapitchuk, AK	Passenger	Piper PA-31	Substantial	None	Loss of power (total) - non-mechanical
12/06	Stephenville, Newfoundland	Cargo	Learjet 36	Destroyed	Fatal (2)	In flight collision with terrain
12/09	East Cameron 71, Gulf of Mexico	Pax and Cargo	Aerospatiale AS350B	Substantial	None	In flight collision with object
12/09	Boise, ID	Cargo	Douglas DC-3C	Destroyed	Fatal (2)	Fire
12/11	Roosevelt Rds, PR	Cargo	Beech 18G	Destroyed	Fatal (1)	Airframe/component/system failure/malfunction
12/12	Ketchikan, AK	Passenger	DeHavilland DHC-2	Destroyed	Fatal (1)	Loss of control - in flight
12/12	Penn Yan, NY	Passenger	MBB BO-105CBS	Destroyed	Fatal (3)	In flight collision with terrain
12/13	Garnett, KS	Pax and Cargo	Piper PA-32R-300	Substantial	None	Loss of power (total) - non-mechanical
12/27	Menominee, MI	Cargo	Cessna 402A	Substantial	Minor	Loss of control - on ground

Table 41 - PERSONS BY ROLE AND DEGREE OF INJURY
 NONSCHEDULED 14 CFR 135 OPERATIONS
 1996

Role of Person	Degree of Injury				Total
	Fatal	Serious	Minor	None	
Pilot	28	6	10	47	91
Copilot	2	1	0	6	9
Cabin attendants	0	0	0	1	1
Other crew	2	1	0	2	5
Passenger	31	12	13	98	154
Total aboard	63	20	23	154	260
Other aircraft*	0	0	0	2	2
Other ground	0	2	0	0	2
Grand total	63	22	23	156	264
Percent	23.9	8.3	8.7	59.1	

* 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 42 - AIRCRAFT BY DAMAGE AND DEGREE OF INJURY
 NONSCHEDULED 14 CFR 135 OPERATIONS
 1996

Aircraft damage	Degree of injury				Aircraft	
	None	Minor	Seri- ous	Fatal	No.	Percent
None	0	1	2	0	3	3.3
Substantial	39	9	2	1	51	56.0
Destroyed	1	1	7	28	37	40.7
Aircraft						
Number -	40	11	11	29	91	
Percent -	44.0	12.1	12.1	31.9		

Table 43 - AIRCRAFT BY FIRST OCCURRENCE AND DEGREE OF INJURY AND BY DAMAGE
 NONSCHEDULED14 CFR 135 OPERATIONS
 1996

Type of first occurrence	Degree of injury				Aircraft damage				Aircraft	
	None	Minor	Seri- ous	Fatal	None	Minor	Substan- tial	De- stroy	No.	Percent
Airframe/component/system failure/malfunction	3	0	0	4	0	0	3	4	7	7.7
Propeller failure/malfunction	1	0	0	0	0	0	1	0	1	1.1
Rotor failure/malfunction	0	1	0	0	0	0	1	0	1	1.1
Fire	0	0	0	1	0	0	0	1	1	1.1
Main gear collapsed	2	0	0	0	0	0	2	0	2	2.2
Nose gear collapsed	3	0	0	0	0	0	3	0	3	3.3
Hard landing	1	0	0	0	0	0	1	0	1	1.1
In flight collision with object	1	0	1	2	0	0	1	3	4	4.4
In flight collision with terrain	2	0	1	7	0	0	2	8	10	11.0
Wheels up landing	1	0	0	0	0	0	1	0	1	1.1
In flight encounter with weather	0	1	3	1	0	0	2	3	5	5.5
Loss of control - in flight	1	1	0	5	0	0	3	4	7	7.7
Loss of control - on ground	6	1	0	0	0	0	7	0	7	7.7
Midair collision	0	2	0	0	1	0	1	0	2	2.2
Collision between aircraft (other than midair)	1	0	0	0	0	0	1	0	1	1.1
On ground collision with object	2	0	1	0	1	0	2	0	3	3.3
On ground collision with terrain	3	1	0	0	0	0	3	1	4	4.4
On ground encounter with weather	1	0	0	0	0	0	1	0	1	1.1
Overrun	3	2	0	0	0	0	5	0	5	5.5
Loss of engine power	3	0	1	0	0	0	3	1	4	4.4
Loss of engine power (total) - mechanical failure/malfunction	1	1	0	0	0	0	2	0	2	2.2
Loss of engine power (partial) - mechanical failure/malfunction	0	1	0	3	0	0	1	3	4	4.4
Loss of engine power (total) - non-mechanical	3	0	3	0	0	0	3	3	6	6.6
Loss of engine power (partial) - non-mechanical	1	0	0	1	0	0	1	1	2	2.2
Undershoot	1	0	0	0	0	0	1	0	1	1.1
Undetermined	0	0	0	1	0	0	0	1	1	1.1
Missing aircraft	0	0	0	3	0	0	0	3	3	3.3
Miscellaneous/other	0	0	1	1	1	0	0	1	2	2.2
Aircraft										
Number -	40	11	11	29	3	0	51	37	91	
Percent -	44.0	12.1	12.1	31.9	3.3	.0	56.0	40.7		

Table 44 - AIRCRAFT BY FIRST OCCURRENCE AND BROAD PHASE OF OPERATION
 NONSCHEDULED 14 CFR 135 OPERATIONS
 1996

Type of first occurrence	Phase of operation										Aircraft	
	Stndg	Taxi	Tkoff	Climb	Cruis	Aprch	Landg	Manvr	Nrept	No.	Percent	No.
Airframe/component/system failure/malfunction	0	0	0	0	5	2	0	0	0	0	7	7.7
Propeller failure/malfunction	0	0	0	0	0	0	1	0	0	0	1	1.1
Rotor failure/malfunction	0	0	0	0	1	0	0	0	0	0	1	1.1
Fire	0	0	1	0	0	0	0	0	0	0	1	1.1
Main gear collapsed	0	0	0	0	0	0	2	0	0	0	2	2.2
Nose gear collapsed	0	0	0	0	0	0	3	0	0	0	3	3.3
Hard landing	0	0	0	0	0	0	1	0	0	0	1	1.1
In flight collision w/obj.	0	0	0	0	0	0	3	0	1	0	4	4.4
In flight collision w/ter.	0	0	2	2	1	3	0	2	0	0	10	11.0
Wheels up landing	0	0	0	0	0	0	1	0	0	0	1	1.1
In flight encounter w/wx.	0	0	1	0	4	0	0	0	0	0	5	5.5
Loss of control - in flight	0	0	2	0	2	1	1	1	0	0	7	7.7
Loss of control - on ground	0	0	3	0	0	4	0	0	0	0	7	7.7
Midair collision	0	0	0	0	2	0	0	0	0	0	2	2.2
Collision between aircraft (other than midair)	0	0	0	0	0	0	1	0	0	0	1	1.1
On ground collision w/obj.	0	2	1	0	0	0	0	0	0	0	3	3.3
On ground collision w/ter.	0	0	3	0	0	0	1	0	0	0	4	4.4
On ground encounter w/wx.	0	1	0	0	0	0	0	0	0	0	1	1.1
Overrun	0	0	1	0	0	0	4	0	0	0	5	5.5
Loss of power	0	0	1	0	3	0	0	0	0	0	4	4.4
Loss of power (total) - mech. failure/malfunction	0	0	0	0	2	0	0	0	0	0	2	2.2
Loss of power (partial) - mech. failure/malfunction	0	0	1	0	2	1	0	0	0	0	4	4.4
Loss of power (total) - non-mechanical	0	0	0	0	2	4	0	0	0	0	6	6.6
Loss of power (partial) - non-mechanical	0	0	2	0	0	0	0	0	0	0	2	2.2
Undershoot	0	0	0	0	0	1	0	0	0	0	1	1.1
Undetermined	0	0	1	0	0	0	0	0	0	0	1	1.1
Missing aircraft	0	0	0	0	0	0	0	0	3	0	3	3.3
Miscellaneous/other	1	1	0	0	0	0	0	0	0	0	2	2.2
Aircraft Number -	1	4	19	2	24	15	19	4	3	91		
Aircraft Percent -	1.1	4.4	20.9	2.2	26.4	16.5	20.9	4.4	3.3			

Table 45 - AIRCRAFT BY PHASE OF OPERATION AND DEGREE OF INJURY AND BY DAMAGE
 NONSCHEDULED 14 CFR 135 OPERATIONS
 1996

Phase of operation	Degree of injury				Aircraft damage				Aircraft	
	None	Minor	Seri- ous	Fatal	None	Minor	Substan- tial	De- stroy	No.	Percent
Standing - engines not operating	0	0	0	1	0	0	0	1	1	1.1
Taxi - to takeoff	1	0	1	0	1	0	1	0	2	2.2
Taxi - from landing	1	0	1	0	1	0	1	0	2	2.2
Takeoff	1	0	0	0	0	0	1	0	1	1.1
Takeoff - roll/run	5	0	0	0	0	0	5	0	5	5.5
Takeoff - initial climb	2	1	1	6	0	0	3	7	10	11.0
Takeoff - aborted	1	2	0	0	0	0	2	1	3	3.3
Climb	1	0	0	0	0	0	1	0	1	1.1
Climb - to cruise	0	0	0	1	0	0	0	1	1	1.1
Cruise	5	4	4	8	1	0	11	9	21	23.1
Cruise - normal	0	1	0	2	0	0	1	2	3	3.3
Approach	2	1	0	1	0	0	3	1	4	4.4
Approach - VFR pattern - final approach	2	0	1	1	0	0	2	2	4	4.4
Go-around (VFR)	0	0	1	0	0	0	0	1	1	1.1
Approach - IAF to FAF/outer marker (IFR)	0	0	1	1	0	0	0	2	2	2.2
Approach - FAF/outer marker to threshold (IFR)	1	0	0	2	0	0	0	3	3	3.3
Missed approach	0	0	0	1	0	0	0	1	1	1.1
Landing	1	0	0	0	0	0	1	0	1	1.1
Landing - flare/touchdown	6	0	0	0	0	0	6	0	6	6.6
Landing - roll	10	2	0	0	0	0	12	0	12	13.2
Maneuvering	0	0	1	2	0	0	0	3	3	3.3
Hover - in ground effect	1	0	0	0	0	0	1	0	1	1.1
Not reported	0	0	0	3	0	0	0	3	3	3.3
Aircraft										
Number -	40	11	11	29	3	0	51	37	91	
Percent -	44.0	12.1	12.1	31.9	3.3	.0	56.0	40.7		

Table 46 - AIRCRAFT BY CONDITION OF LIGHT AND TYPE OF WEATHER
 NONSCHEDULED 14 CFR 135 OPERATIONS
 1996

Condition of light	Type of weather			Aircraft	
	VMC	IMC	Not reported	No.	Percent
Dawn	1	1	0	2	2.2
Daylight	51	10	4	65	71.4
Night (dark)	11	6	1	18	19.8
Night (bright)	1	0	0	1	1.1
Not reported	2	2	1	5	5.5
Aircraft					
Number -	66	19	6	91	
Percent -	72.5	20.9	6.6		

Table 47 - AIRCRAFT BY TYPE OF OPERATION AND DEGREE OF INJURY
 NONSCHEDULED 14 CFR 135 OPERATIONS
 1996

Type of Operation	Degree of Injury				Aircraft	
	None	Minor	Serious	Fatal	No.	Percent
Domestic Passenger	22	5	4	12	43	47.3
Domestic Cargo	11	5	5	10	31	34.1
Domestic Pax/Cargo	6	1	2	1	10	11.0
Domestic Mail Contract	0	0	0	1	1	1.1
International Passenger	0	0	0	2	2	2.2
International Cargo	1	0	0	3	4	4.4
Aircraft						
Number -	40	11	11	29	91	
Percent -	44.0	12.1	12.1	31.9		

Table 48 - AIRCRAFT BY PROXIMITY TO AIRPORT AND FLIGHT PLAN
 NONSCHEDULED 14 CFR 135 OPERATIONS
 1996

Accident location	Flight plan					Aircraft	
	None	VFR	IFR	VFR/ IFR	Cmpny VFR	No.	Percent
Off airport/airstrip	6	9	14	0	23	52	57.1
On airport	4	3	11	1	6	25	27.5
On airstrip	1	1	2	0	5	9	9.9
Other	0	3	2	0	0	5	5.5
Aircraft							
Number -	11	16	29	1	34	91	
Percent -	12.1	17.6	31.9	1.1	37.4		

Table 49 - AIRCRAFT BY OCCURRENCE OF FIRE AND DEGREE OF INJURY AND BY DAMAGE
 NONSCHEDULED 14 CFR 135 OPERATIONS
 1996

Aircraft fire	Degree of injury				Aircraft damage				Aircraft	
	None	Minor	Seri- ous	Fatal	None	Minor	Sub- stantial	De- stroy	No.	Percent
None	37	11	11	20	3	0	48	28	79	86.8
In-flight	0	0	0	1	0	0	0	1	1	1.1
On ground	3	0	0	8	0	0	3	8	11	12.1
Aircraft										
Number -	40	11	11	29	3	0	51	37	91	
Percent -	44.0	12.1	12.1	31.9	3.3	.0	56.0	40.7		

Table 50 - AIRCRAFT BY TYPE OF AIRCRAFT AND DEGREE OF INJURY AND BY DAMAGE
 NONSCHEDULED 14 CFR 135 OPERATIONS
 1996

Type of aircraft	Degree of injury				Aircraft damage				Aircraft	
	None	Minor	Seri- ous	Fatal	None	Minor	Sub- stantial	De- stroy	No.	Percent
All Fixed Wing *	37	9	10	24	2	0	47	31	80	87.9
Single reciprocating engine	15	7	6	9	1	0	23	13	37	40.7
Multiple reciprocating engine	12	2	4	12	1	0	15	14	30	33.0
Turboprop	9	0	0	2	0	0	8	3	11	12.1
Turbojet	1	0	0	1	0	0	1	1	2	2.2
All Rotorcraft *	3	2	1	5	1	0	4	6	11	12.1
Turbine Engine	3	2	1	5	1	0	4	6	11	12.1
Aircraft										
Number -	40	11	11	29	3	0	51	37	91	
Percent -	44.0	12.1	12.1	31.9	3.3	.0	56.0	40.7		

* Not included in column totals

Table 51 - BROAD CAUSE/FACTOR ASSIGNMENTS*
 NONSCHEDULED 14 CFR 135 OPERATIONS
 1996

Cause/Factor	Cited as a Cause		Cited as a Factor		Cited as Either a Cause or a Factor (or Both)	
	Fatal	All	Fatal	All	Fatal	All
	Accidents	Accidents	Accidents	Accidents	Accidents	Accidents
Aircraft #	5	22	6	15	10	34
Propulsion System and Controls	3	15	5	6	7	20
Flight Control System	0	1	0	1	0	2
Landing Gear	1	3	1	4	2	7
Systems/Equipment/ Instruments	1	2	0	4	1	6
Environment #	0	2	12	48	12	50
Weather	0	0	7	27	7	27
Light Conditions	0	0	5	12	5	12
Object (trees, wires, etc.)	0	1	0	5	0	6
Airport/Airways Facilities, Aids	0	0	1	1	1	1
Terrain/Runway Condition	0	1	5	26	5	27
Personnel #	20	67	9	23	20	70
Pilot	20	64	9	23	20	68
Others (Aboard)	0	0	1	1	1	1
Others (Not Aboard)	1	6	1	3	2	8
Number of Aircraft					29	91
NTSB Determined Probable Cause					25	86

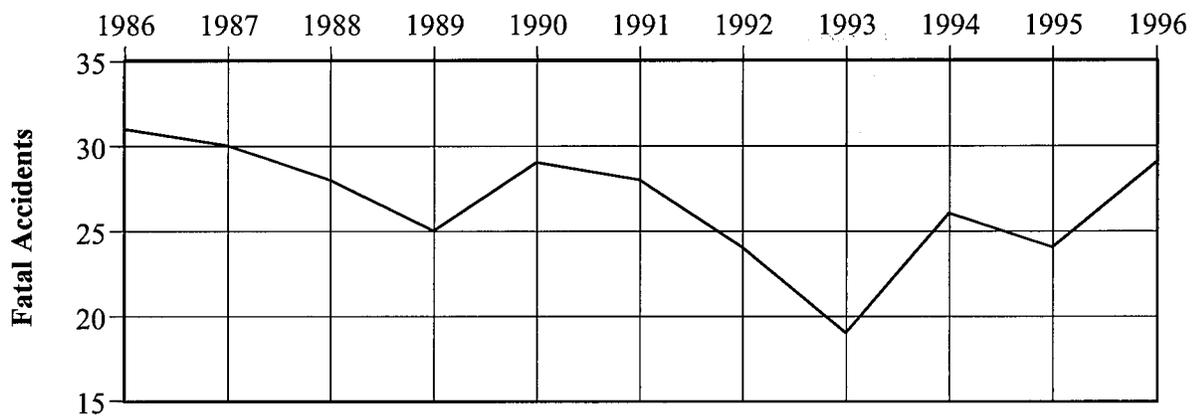
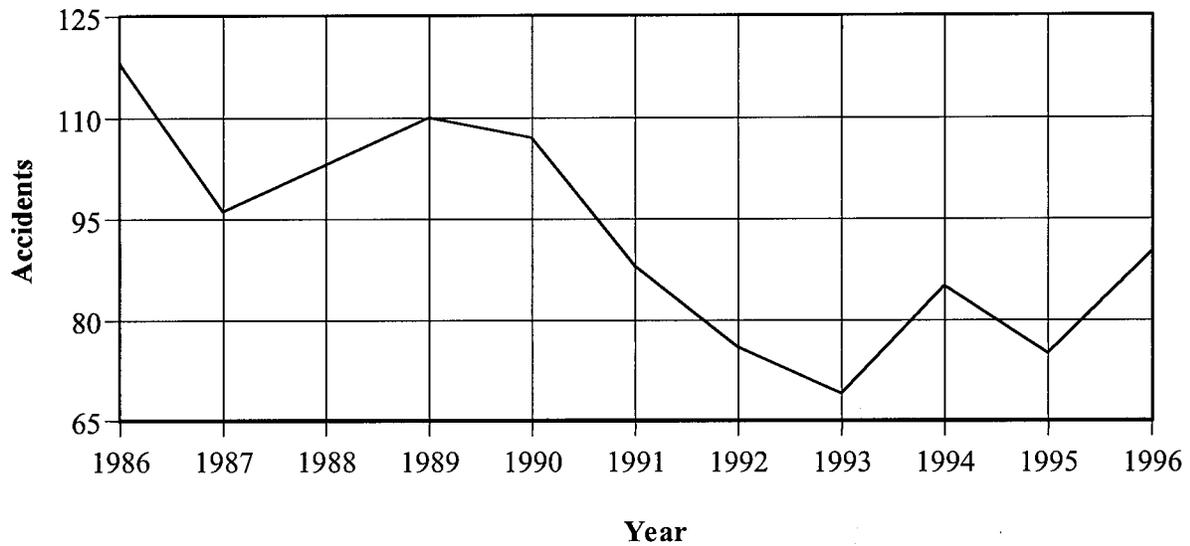
* Multiple causes and factors may be assigned in an accident

This category is composed of 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.

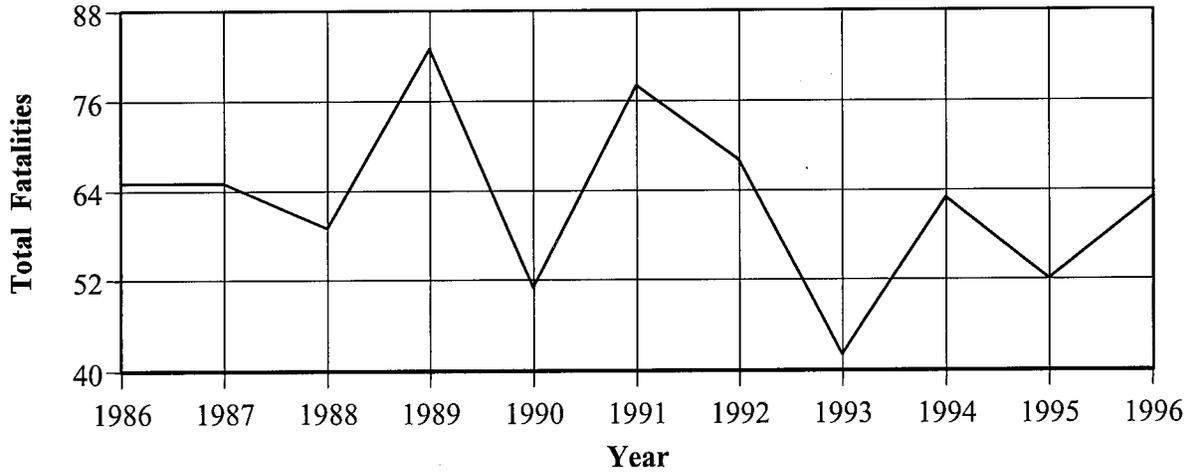
Table 52 - ACCIDENTS, FATAL ACCIDENTS, FATALITIES, AND RATES
 NONSCHEDULED 14 CFR 135 OPERATIONS
 1986 - 1996

Year	Accidents	Fatal Accidents	Fatalities		Accident Rate per 100,000* Aircraft Hours Flown		
			Total	Aboard Aircraft In This Category	Hours Flown	Total	Fatal
1986	118	31	65	61	2,690,000	4.387	1.152
1987	96	30	65	63	2,657,000	3.613	1.129
1988	103	28	59	55	2,632,000	3.913	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

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**

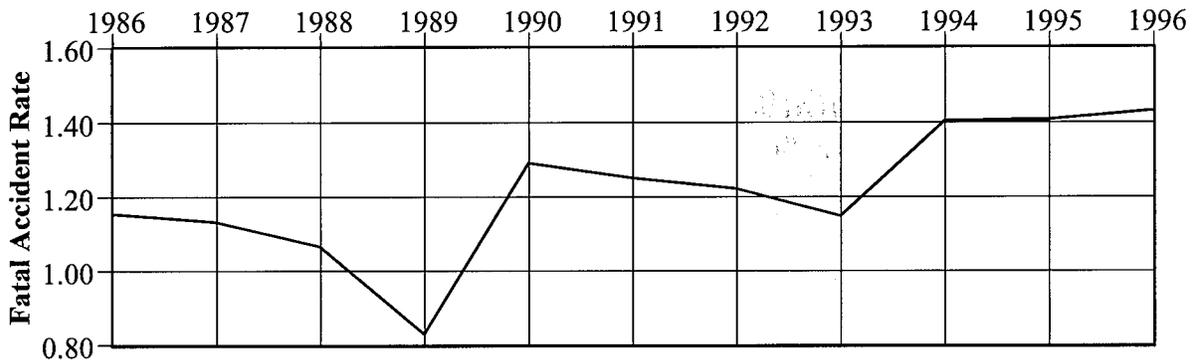
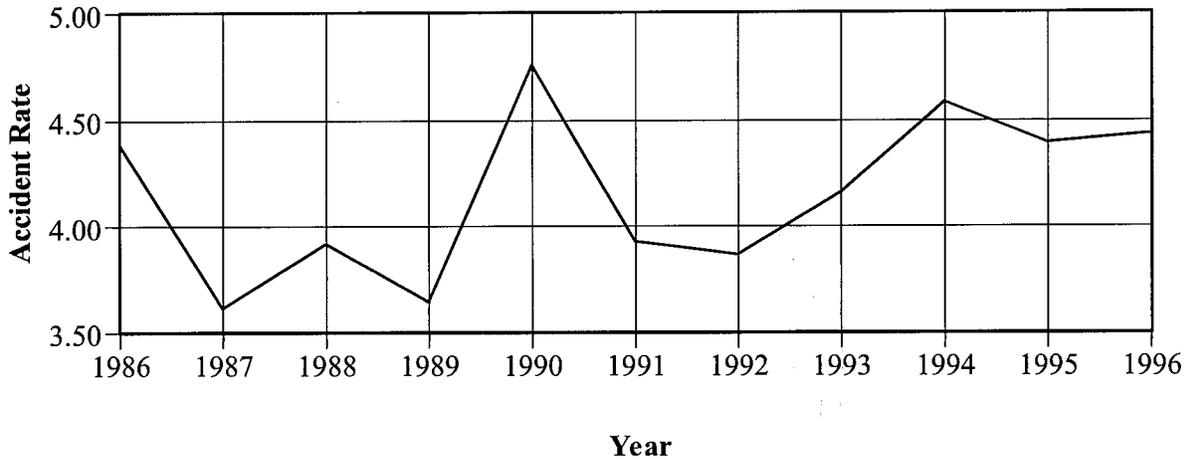


Table 53 - FIRST OCCURRENCES IN ALL ACCIDENTS AND IN FATAL ACCIDENTS
 NONSCHEDULED 14 CFR 135 OPERATIONS
 1996 AND 1986 - 1995

Type of Occurrence	All Accidents				Fatal Accidents			
	1996		1986 - 1995		1996		1986 - 1995	
	No.	Percent	Mean	Percent	No.	Percent	Mean	Percent
In flight collision with terrain	10	11.0	9.7	10.4	7	24.1	5.6	20.4
Loss of control - in flight	7	7.7	8.9	9.5	5	17.2	4.8	18.1
Loss of engine power(total) - mechanical failure/malfunction	2	2.2	8.1	8.6	0	.0	1.8	6.8
In flight encounter with weather	5	5.5	7.8	8.3	1	3.4	4.1	15.5
Loss of control - on ground	7	7.7	7.2	7.7	0	.0	.1	.4
Airframe/component/system failure/ malfunction	7	7.7	6.8	7.3	4	13.8	2.2	8.3
In flight collision with object	4	4.4	5.4	5.8	2	6.9	1.9	7.2
Loss of engine power(total) - non-mechanical	6	6.6	4.9	5.2	0	.0	.6	2.3
On ground collision with object	3	3.3	4.5	4.8	0	.0	.2	.8
Loss of engine power	4	4.4	4.1	4.4	0	.0	1.0	3.8
Overrun	5	5.5	2.9	3.1	0	.0	.1	.4
On ground collision with terrain	4	4.4	2.6	2.8	0	.0	.0	.0
Loss of engine power(partial) - mechanical failure/malfunction	4	4.4	2.2	2.3	3	10.3	.4	1.5
Main gear collapsed	2	2.2	1.7	1.8	0	.0	.0	.0
Hard landing	1	1.1	1.7	1.8	0	.0	.0	.0
Midair collision	2	2.2	1.3	1.4	0	.0	.8	3.0
Loss of engine power(partial) - non-mechanical	2	2.2	1.3	1.4	1	3.4	.4	1.5
Fire	1	1.1	1.1	1.2	1	3.4	.6	2.3
Undershoot	1	1.1	1.1	1.2	0	.0	.0	.0
Not reported	0	.0	1.1	1.2	0	.0	.1	.4
Miscellaneous/other	2	2.2	1.0	1.1	1	3.4	.5	1.9
Gear not extended	0	0.0	0.8	0.9	0	.0	.0	.0
Roll over	0	0.0	0.8	0.9	0	.0	.0	.0
Dragged wing, rotor, pod, or float	0	0.0	0.7	0.7	0	.0	.1	.4
Nose over	0	0.0	0.7	0.7	0	.0	.0	.0
Altitude deviation, uncontrolled	0	0.0	0.5	0.5	0	.0	.1	.4
Nose gear collapsed	3	3.3	0.5	0.5	0	.0	.0	.0
Propeller/rotor contact to person	0	0.0	0.5	0.5	0	.0	.2	.8
Collision between aircraft (other than midair)	1	1.1	0.5	0.5	0	.0	.0	.0
Abrupt maneuver	0	0.0	0.4	0.4	0	.0	.3	1.1
Explosion	0	0.0	0.4	0.4	0	.0	.1	.4
Gear collapsed	0	0.0	0.4	0.4	0	.0	.0	.0
Fire/explosion	0	0.0	0.3	0.3				
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
On ground encounter with weather	1	1.1	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
Missing aircraft	3	3.3	0.2	0.2	3	10.3	.2	.8
Wheels up landing	1	1.1	0.2	0.2	0	.0	.0	.0
Cargo shift	0	0.0	0.1	0.1	0	.0	.1	.4
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
Undetermined	1	1.1	0.1	0.1	1	3.4	.1	.4
Vortex turbulence encountered	0	0.0	0.1	0.1	0	.0	.1	.4
Rotor failure/malfunction	1	1.1	0.1	0.1	0	.0	.0	.0
Propeller failure/malfunction	1	1.1	0.0	0.0	0	.0	.0	.0
Total	91	100.0	93.7	100.0	29	100.0	26.5	100.0

Table 54 - FIRST PHASES OF OPERATION IN ALL ACCIDENTS AND IN FATAL ACCIDENTS
 NONSCHEDULED 14 CFR 135 OPERATIONS
 1996 AND 1986 - 1995

Phase of operation	All Accidents				Fatal Accidents			
	1996		1986 - 1995		1996		1986 - 1995	
	No.	Percent	Mean	Percent	No.	Percent	Mean	Percent
Cruise	24	26.4	20.4	21.8	10	34.5	8.1	30.6
Takeoff	19	20.9	19.7	21.0	6	20.7	4.2	15.8
Landing	19	20.9	17.5	18.7	1	3.4	.7	2.6
Approach	15	16.5	12.5	13.3	6	20.7	5.7	21.5
Maneuvering	4	4.4	7.6	8.1	2	6.9	3.4	12.8
Taxi	4	4.4	4.8	5.1	0	.0	.0	.0
Climb	2	2.2	4.4	4.7	0	.0	1.8	6.8
Descent	0	.0	2.8	3.0	0	.0	1.3	4.9
Standing	1	1.1	2.2	2.3	1	3.4	.6	2.3
Not reported	3	3.3	1.3	1.4	2	6.9	.3	1.1
Other	0	.0	.5	.5	0	.0	.4	1.5
Total Aircraft	91	100.0	93.7	100.0	29	100.0	26.5	100.0

Table 55 - BROAD CAUSE/FACTOR ASSIGNMENTS IN ALL ACCIDENTS AND IN FATAL ACCIDENTS
 NONSCHEDULED 14 CFR 135 OPERATIONS
 1996 AND 1986 - 1995

Broad Cause/Factor	All Accidents				Fatal Accidents			
	1996		1986 - 1995		1996		1986 - 1995	
	No.	Percent	Mean	Percent	No.	Percent	Mean	Percent
Pilot	68	74.7	69.2	73.9	20	69.0	21.8	82.3
Weather	27	29.7	29.4	31.4	7	24.1	11.7	44.2
Terrain/Runway Condition	27	29.7	27.0	28.8	5	17.2	6.8	25.7
Propulsion System and Controls	20	22.0	19.6	20.9	7	24.1	4.6	17.4
Other Person (Not Aboard)	8	8.8	17.2	18.4	2	6.9	5.7	21.5
Light Conditions	12	13.2	12.4	13.2	5	17.2	5.9	22.3
Object (tree,wires,etc)	6	6.6	9.0	9.6	0	.0	2.5	9.4
Systems/Equipment/Instruments	6	6.6	8.4	9.0	1	3.4	2.3	8.7
Landing Gear	7	7.7	5.9	6.3	2	6.9	.1	.4
Airframe	0	.0	3.3	3.5	0	.0	1.0	3.8
Flight Control System	2	2.2	1.7	1.8	0	.0	.9	3.4
Airport/Airways Facilities, Aids	1	1.1	1.5	1.6	0	.0	.0	.0
Other Person (Aboard)	1	1.1	.3	.3	1	3.4	.2	.8
Total Aircraft	91	100.0	93.7	100.0	29	100.0	26.5	100.0
NTSB Determined Probable Cause	86		92.1		25		26.2	

BY THE NATIONAL TRANSPORTATION SAFETY BOARD

/s/ JIM HALL
Chairman

/s/ ROBERT T. FRANCIS II
Vice Chairman

/s/ JOHN HAMMERSCHMIDT
Member

/s/ JOHN GOGLIA
Member

/s/ GEORGE W. BLACK, JR.
Member

APPENDIX A
MIDAIR COLLISION ACCIDENTS
U.S. AIR CARRIER OPERATIONS
1986 - 1996

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
1986	0	0	0	0	0	0	0
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
	17	9	35	4	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

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	Flight Instructor on Ground
Maintenance, Servicing, Inspection Personnel	Operational Supervisor Personnel
Weather Service Personnel	Air Traffic Control Personnel
Airport Management	Airways Facilities Personnel
Production-Design Personnel	Pilot of Another Aircraft
Ground Signalman	Ground Crewman
Passenger	Spectator
Driver of Vehicle	Third Pilot
Flight Engineer	Navigator
Radio Operator	Flight Attendant
Other Flight Personnel	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
1996

	Cause or Factor -----	Cause -----
AIRCRAFT		
Air cond/heating/pressurization	1	0
Auxiliary power unit	1	0
Cargo/baggage	2	2
Compressor assembly, forward fan	1	1
Compressor assembly, rotor disc	1	1
Engine assembly, master rod	1	1
Engine compartment	1	1
Fire extinguisher, cargo	1	1
Flight control, slat	1	0
Fluid, hydraulic	2	1
Hazardous Material	1	1
Hydraulic system	1	0
Hydraulic system, fitting	1	1
Landing gear, emergency extension assembly	1	1
Landing gear, main gear shock absorbing strut	1	1
Landing light (s)	1	1
Smoke detector(s)	1	1
Wing	1	1
FACILITY		
Aircraft manuals	1	1
Airport facilities, runway/landing area condition	1	0
Airport facilities, taxiway condition	1	0
Meteorological services, ATIS	1	0
ENVIRONMENT		
Bird(s)	1	0
Bright night	2	0
Crosswind	1	0
Dark night	1	0
Fog	1	0
Rain	1	0
Snow	1	0
Turbulence	1	1
Turbulence (thunderstorms)	1	1
Turbulence, clear air	7	7
Vehicle	1	0
FLIGHT CREW		
Abort above V1	1	1
Airspeed (Vref)	1	1
Distance/altitude	1	1
Flare	1	1
Flight controls	1	1
Go-around	1	1
Planned approach	1	0
Planning/decision	1	1
Visual illusion	1	1
Visual lookout	1	1
OTHER PERSON		
Autopilot	1	1
Checklist	3	1
Circuit breaker	1	1
Clearance	1	1
Control tower service	1	0
Crew/group coordination	2	1
Dispatch procedures	1	0
Emergency procedure	1	1
Evacuation	3	3
Gear down and locked	1	0
Hazardous weather advisory	1	0
Improper use of procedure	1	1
Inadequate procedure - surveillance of operation	2	0
Inadequate substantiation process	1	0

CAUSE/FACTOR TABLE
14 CFR 121 OPERATIONS
1996

	Cause or Factor -----	Cause -----
OTHER PERSON (continued)		
Inadequate surveillance of operation	1	0
Inadequate training(emergency procedure(s))	2	0
Information insufficient	1	1
Insufficient standards/requirements	1	1
Insufficient stds/rqmts - Operation/operator	1	0
Lack of familiarity with aircraft	1	0
Maintenance	1	1
Maintenance, inspection	2	2
Maintenance, service bulletin/letter	1	1
Maintenance, service of aircraft/equipment	1	1
Miscellaneous	1	1
Monitoring	1	1
NOTAMs	1	0
Planning/decision	1	1
Procedure inadequate	4	3
Procedures/directives	2	2
Seat belt	1	1
Seat belt sign	1	1
Spoiler extension	1	1
Unsafe/hazardous condition	1	1
Visual lookout	4	4
Visual/aural detection	2	0

APPENDIX D

DETAILED CAUSE/FACTOR ASSIGNMENTS
SCHEDULED 14 CFR 135 OPERATIONS

CAUSE/FACTOR TABLE
SCHEDULED 14 CFR 135 OPERATIONS
1996

	Cause or Factor -----	Cause -----
AIRCRAFT		
Compressor assembly	1	1
Compressor assembly, impeller	1	0
Door, cargo/baggage	1	1
Fluid, hydraulic	1	0
Hydraulic system, line	1	0
Landing gear, normal retraction/extension assembly	1	1
FACILITY		
Aircraft manuals, procedure information	1	1
Airport fire/rescue service	1	0
ENVIRONMENT		
Bird(s)	1	1
Low ceiling	1	0
Terrain condition	1	0
FLIGHT CREW		
Aircraft preflight	1	1
Altitude/clearance	2	2
Flare	1	1
Lack of total experience in type operation	1	0
Proper alignment	1	0
VFR flight into IMC	1	1
OTHER PERSON		
Communications	1	0
Monitoring	1	1
Procedure inadequate	1	1
Recovery from bounced landing	1	0
Visual lookout	1	1

APPENDIX E

DETAILED CAUSE/FACTOR ASSIGNMENTS
NONSCHEDULED 14 CFR 135 OPERATIONS

CAUSE/FACTOR TABLE
NONSCHEDULED 14 CFR 135 OPERATIONS
1996

	Cause or Factor -----	Cause -----
AIRCRAFT		
Airframe	2	2
Compressor assembly, impeller	1	1
Cooling system, cowling	1	0
Engine assembly, crankshaft	1	1
Engine compartment	1	1
Engine instruments, fuel quantity gage	1	0
Flight/nav instruments, airspeed indicator	1	0
Flt control syst, wing flap control	1	0
Fluid, fuel	7	5
Fluid, oil	1	1
Fuel injection control, linkage	1	1
Fuel system	1	1
Fuel system, tank	1	0
Hydraulic system	1	0
Hydraulic system, actuator	1	1
Ignition system, ignition lead	1	0
Ignition system, ignition points	1	0
Landing gear, float assembly	1	0
Landing gear, gear locking mechanism	1	1
Landing gear, normal brake system	2	1
Landing gear, normal retraction/extension assembly	1	0
Landing gear, nose gear	1	0
Landing gear, skid assembly	1	1
Lubricating system	1	0
Miscellaneous, airframe	1	0
Propeller control	1	1
Rotor drive system, main gearbox/transmission	1	1
Rotor system, tail rotor blade	1	1
Rotor system, tail rotor hub pitch link	1	0
Rotorcraft flight control, tail rotor control	1	1
Throttle/power lever, cable	1	1
Torquemeter system	1	0
Turboshaft engine	1	1
Turboshaft engine, gas generator turbine shaft	1	1
FACILITY		
Airport facilities, helipad	1	0
Airport facilities, runway/landing area condition	7	1
ENVIRONMENT		
Animal (s)	1	1
Clouds	1	0
Crosswind	5	0
Dark night	8	0
Dawn	1	0
Downdraft	1	0
Fence	1	0
Fog	9	0
Gusts	3	0
High wind	1	0
Icing conditions	3	0
Low ceiling	8	0
Obscuration	2	0
Other	1	0
Other	1	0
Snow	2	0
Sun glare	2	0
Tailwind	3	0
Terrain condition	21	0
Tree (s)	2	0
Unfavorable wind	1	0
Variable wind	1	0
Vehicle	1	0
Whiteout	3	0

CAUSE/FACTOR TABLE
 NONSCHEDULED 14 CFR 135 OPERATIONS
 1996

	Cause or Factor -----	Cause -----
FLIGHT CREW		
Abort	1	0
Aircraft control	5	5
Aircraft preflight	3	2
Aircraft weight and balance	1	0
Airspeed	3	3
Airspeed (Vmc)	3	3
Altitude/clearance	6	6
Brakes (normal)	2	2
Clearance	3	3
Climb	1	0
Communications	1	0
Compensation for wind conditions	5	5
Design stress limits of aircraft	1	1
Directional control	6	5
Distance/altitude	1	1
Distance/speed	1	1
Diverted attention	1	0
Emergency procedure	2	1
Engine shutdown	1	0
Fatigue	2	0
Flaps	1	0
Flight into adverse weather	2	1
Flight to destination alternate	2	1
Fuel management	2	2
Fuel supply	1	1
Gear down and locked	1	1
Go-around	3	3
Habit interference	1	0
IFR procedure	2	2
Ice/frost removal from aircraft	1	1
Improper decision	1	1
In-flight planning/decision	6	6
Lack of total experience in type of aircraft	1	0
Maneuver to avoid obstructions	1	1
Missed approach	2	2
Operation with known deficiencies in equipment	2	1
Overconfidence in personal ability	1	0
Physical impairment	1	1
Planning/decision	3	2
Preflight planning/preparation	4	3
Pressure induced by conditions/events	1	0
Procedures/directives	4	2
Proper alignment	1	1
Proper altitude	2	2
Proper climb rate	1	1
Proper touchdown point	3	2
Raising of flaps	1	1
Remedial action	1	1
Self-induced pressure	1	0
Short field landing/procedure	1	1
Spatial disorientation	2	2
Stall	2	2
Stall/mush	1	1
Supervision	1	1
Touchdown	1	1
Unsafe/hazardous condition	1	1
Unsuitable terrain or takeoff/landing/taxi area	6	4
VFR flight into IMC	4	4
Visual illusion	2	0
Visual lockout	4	4
Visual separation	1	1
Weather evaluation	1	0
Wind information	2	1
Wrong runway	2	2

CAUSE/FACTOR TABLE
 NONSCHEDULED 14 CFR 135 OPERATIONS
 1996

	Cause or Factor -----	Cause -----
OTHER PERSON		
Airport snow removal	1	1
Communications	1	0
Emergency procedure	1	1
Gear down and locked	2	2
Identification of aircraft visually	1	1
Inadequate initial training	1	1
Inadequate training	1	0
Maintenance, 100-hour inspection	1	0
Maintenance, adjustment	1	0
Maintenance, installation	1	1
Maintenance, service bulletin/letter	2	1
NOTAMs	1	1
Pressure induced by others	1	0
Seat belt	1	0
Visual lookout	3	3
Visual/aural perception	1	0

APPENDIX F

N.T.S.B. FORM 6120.4



**FACTUAL REPORT
AVIATION
ACCIDENT/INCIDENT**

National Transportation Safety Board
Washington, D.C. 20594

National Transportation Safety Board
**FACTUAL REPORT
 AVIATION**

NTSB Accident/License Number

Airport/Approach/Landing Information

16 Accident Location 1 <input type="checkbox"/> Off airport/airstrip 2 <input type="checkbox"/> On airport 3 <input type="checkbox"/> On airstrip 4 <input type="checkbox"/> UNK/NA		17 Airport Information <input type="checkbox"/> Not Applicable (go to Block 28)		18 Airport Name 19 Airport Identifier		20 Distance From Airport Center (Nearest SM) _____ SM 1 <input type="checkbox"/> UNK/NA		21 Direction from Airport _____ ° mag 1 <input type="checkbox"/> UNK/NA			
22 Runway Used Identifier _____ 1 <input type="checkbox"/> UNK/NA			23 Runway Length _____ Feet 1 <input type="checkbox"/> UNK/NA			24 Runway Width _____ Feet 1 <input type="checkbox"/> UNK/NA			25 Airport Elevation _____ Ft. MSL 1 <input type="checkbox"/> UNK/NA		
26 Runway/Landing Surface 1 <input type="checkbox"/> Macadam 2 <input type="checkbox"/> Asphalt 3 <input type="checkbox"/> Concrete 4 <input type="checkbox"/> Gravel 5 <input type="checkbox"/> Dirt 6 <input type="checkbox"/> Grass/turf 7 <input type="checkbox"/> Snow 8 <input type="checkbox"/> Ice 9 <input type="checkbox"/> Water 10 <input type="checkbox"/> Metal/Wood 11 <input type="checkbox"/> UNK/NA					27 Runway/Landing Surface Condition (Multiple entry) 1 <input type="checkbox"/> Dry 2 <input type="checkbox"/> Wet 3 <input type="checkbox"/> Ice covered 4 <input type="checkbox"/> Snow--dry 5 <input type="checkbox"/> Snow--wet 6 <input type="checkbox"/> Snow--crusted 7 <input type="checkbox"/> Snow--compacted 8 <input type="checkbox"/> Vegetation 9 <input type="checkbox"/> Water--calm 10 <input type="checkbox"/> Water--choppy 11 <input type="checkbox"/> Water--glassy 12 <input type="checkbox"/> Rubber deposits 13 <input type="checkbox"/> Soft 14 <input type="checkbox"/> Rough 15 <input type="checkbox"/> Slush covered 16 <input type="checkbox"/> Holes 17 <input type="checkbox"/> UNK/NA						
28 Type Instrument Approach Flown (Multiple entry) 1 <input type="checkbox"/> None 2 <input type="checkbox"/> ADF/NDB 3 <input type="checkbox"/> SDF 4 <input type="checkbox"/> VOR/TVOR 5 <input type="checkbox"/> VOR/DME 6 <input type="checkbox"/> TACAN 7 <input type="checkbox"/> ILS--complete 8 <input type="checkbox"/> ILS--localizer 9 <input type="checkbox"/> ILS--backcourse 10 <input type="checkbox"/> RNAV 11 <input type="checkbox"/> MLS 12 <input type="checkbox"/> LDA 13 <input type="checkbox"/> ASR 14 <input type="checkbox"/> PAR 15 <input type="checkbox"/> Sidestep 16 <input type="checkbox"/> Visual 17 <input type="checkbox"/> Contact 18 <input type="checkbox"/> Circling 19 <input type="checkbox"/> Practice 20 <input type="checkbox"/> UNK/NA					29 VFR Approach/Landing (Multiple entry) 1 <input type="checkbox"/> None 2 <input type="checkbox"/> Traffic pattern 3 <input type="checkbox"/> Straight-in 4 <input type="checkbox"/> Valley/terrain following 5 <input type="checkbox"/> Go around 6 <input type="checkbox"/> Touch and go 7 <input type="checkbox"/> Full stop 8 <input type="checkbox"/> Stop and go 9 <input type="checkbox"/> Simulated forced landing 10 <input type="checkbox"/> Forced landing 11 <input type="checkbox"/> Precautionary landing 12 <input type="checkbox"/> UNK/NA						

Aircraft Information

30 Aircraft Manufacturer		31 Aircraft Model/Series		32 Serial No. _____ 1 <input type="checkbox"/> UNK/NA		33 Certificated Maximum Gross Weight _____ 1 <input type="checkbox"/> UNK/NA	
34 Type of Aircraft 1 <input type="checkbox"/> Airplane 2 <input type="checkbox"/> Helicopter 3 <input type="checkbox"/> Glider 4 <input type="checkbox"/> Balloon 5 <input type="checkbox"/> Blimp/dirigible 6 <input type="checkbox"/> Ultralight 7 <input type="checkbox"/> Gyroplane A Specify _____			35 Type Airworthiness Certificate (Multiple entry) Standard 1 <input type="checkbox"/> Normal 2 <input type="checkbox"/> Utility 3 <input type="checkbox"/> Acrobatic 4 <input type="checkbox"/> Transport Special 5 <input type="checkbox"/> Restricted 6 <input type="checkbox"/> Limited 7 <input type="checkbox"/> Provisional 8 <input type="checkbox"/> Special flight 9 <input type="checkbox"/> Experimental 10 <input type="checkbox"/> UNK/NA			36 Home Built 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No 3 <input type="checkbox"/> UNK/NA	

