TECHNICAL REPORT DOCUMENTATION PAGE

1. Report No. NTSB/ARC-94/02	2.Government Accession No. PB95-100319	3.Recipient's Catalog No.
4. Title and Subtitle Annual Review of Aircraft Accidents Data U.S. Air Carrier Operations Calendar Year 1992		5.Report Date September 15, 1994 6.Performing Organization Code
7. Author(s)		8.Performing Organization Report No.
9. Performing Organization Name and Address		10.Work Unit No. 6453 11.Contract or Grant No.
12. Sponsoring Agency Name and Address NATIONAL TRANSPORTATION SAFETY BOARD Washington, D.C. 20594		13.Type of Report and 14.Sponsoring Agency Code

15. Supplementary Notes

16. 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 1992.

The report is divided into three major sections according to the federal regulations under which the flight was conducted - 14 CFR 121, Scheduled 14 CFR 135, or Nonscheduled 14 CFR 135. In each section of the report tables are presented to describe the losses and characteristics of 1992 accidents to enable comparison with prior years.

17. Key Words Aviation, Air Carrier, Commuter, On Demand Air Taxi, Accident Rates, 14 CFR 121, 14 CFR 135		18. Distribution Statement	
19. Security Classification (of this report) UNCLASSIFIED	20. Security Classification (of this page) UNCLASSIFIED	21. No.of Pages	22. Price

NTSB Form 1765.2 (Rev. 9/74)

CONTENTS

Introduction 1

14 CFR 121 Operations. 2

Scheduled 14 CFR 135 Operations 18

Nonscheduled 14 CFR 135 Operations 31

Appendix A -- Midair Collision Accidents 49

Appendix B -- Explanatory Notes 50

Appendix C -- Cause/Factor Table - 14 CFR 121. 52

Appendix D -- Cause/Factor Table - Scheduled 14 CFR 135 54

Appendix E -- Cause/Factor Table - Nonscheduled 14 CFR 135 . . . 56

Appendix F -- NTSB Form 6120.4 60

LIST OF TABLES WITH TABLE NUMBERS

	Part 121 125 127	Sched Part 135	Nonsch Part 135
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	46
Aircraft by Type of Operation and Degree of Injury	11	29	47
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	50
Broad Cause/Factor Assignments	13	33	51
Accidents, Fatal Accidents, Fatalities, and Rates	14	--	--
Accidents, Fatal Accidents, Fatalities, and Rates(Sched. Operations)	15	34	--
Accidents, Fatal Accidents, Fatalities, and Rates(Non-schd. Operations)	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 Operations 1983-1992)	appA	--	--
Explanatory Notes	app8	--	--
Detailed Cause/Factor Assignments	app C	app D	app E
NTSB Form 6120.4	appF	--	--

INTRODUCTION

This report presents a statistical compilation and review of air carrier accidents that occurred in 1992, and involved U.S. registered aircraft conducting operations under Title 14 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 air taxis. For a complete definition of operations under each of these Parts, consult the applicable sections of the Code of Federal Regulations.

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 for 1992 and for the four preceding years. Several tables then present accident parameters for 1992 only. Each section concludes with tabulations that present comparative statistics for 1992 and for the 5-year period 1987-1991.

Exposure data (flight hours, miles, and departures) used to compute accident rates for operations under Parts 121 and for scheduled operations under Part 135 were obtained from the Federal Aviation Administration (FAA) which analyzed 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 estimated from data obtained by the FAA in its surveys of general aviation activity. National Transportation Safety Board Form 6120.4 (Appendix F) is the source of the factual data represented in this report.

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 significant 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 18 accidents in Part 121 operations in 1992. This is the lowest annual number of Part 121 accidents since 1985. The overall accident rate for 1992 was 0.144 accidents per 100,000 hours flown, a 34 percent decrease from the 1991 rate of 0.218. The 1992 rate was 42.8 percent lower than the overall rate of 0.252 for the period from 1983 through 1991.

There were four fatal accidents in this category during 1992. During the period 1983 through 1991 there were an average of five fatal accidents per year. The four fatal accidents in 1992 were responsible for a total of thirty-three fatalities. The most serious of these fatal accidents involved loss of control after liftoff of a Fokker F28, in Flushing, New York (27 fatalities) and the crash of a McDonnell Douglas DC-8 occurring in Swanton, Ohio (4 fatalities).

Table 1 - SUMMARY OF LOSSES
14 CFR 121 OPERATIONS
1988 - 1992

	1988	1989	1990	1991	1992
Accidents					
Fatal	3	11	6	4	4
Involved Serious Injury	16	5	11	11	12
Involved Minor or No Injury	10	12	7	11	2
Total	29	28	24	26	18
Fatalities					
Passenger	255	259	8	40	26
Crew	19	17	4	9	5
Other Persons	11	2	27	13	2
Total	285	278	39	62	33
Aircraft Damage (14 CFR 121, 125, 127)					
Destroyed	3	7	3	5	3
Substantial	12	11	8	10	3
Minor	0	0	4	3	1
None	14	10	10	9	11
Total	29	28	25	27	18

Table 2 - ACCIDENT RATES
14 CFR 121 OPERATIONS

	1988	1989	1990	1991	1992
Aircraft Miles Flown (Thousands)	4,503,426	4,605,083	4,970,087	4,850,850	5,087,723
Aircraft Hours Flown	11,140,548	11,274,543	12,150,116	11,900,023	12,495,667
Departures Flown	7,716,061	7,645,494	8,224,902	7,985,630	8,080,791
Accident Rates *					
Per Million Miles Flown	0.0062	0.0061	0.0048	0.0054	0.0035
Per Hundred Thousand Hours Flown	0.251	0.248	0.198	0.218	0.144
Per Hundred Thousand Departures Flown	0.363	0.366	0.292	0.326	0.223
Fatal Accident Rates *					
Per Million Miles Flown	0.0004	0.0024	0.0012	0.0008	0.0008
Per Hundred Thousand Hours Flown	0.018	0.098	0.049	0.034	0.032
Per Hundred Thousand Departures Flown	0.026	0.144	0.073	0.050	0.050

* The 12/21/88 sabotage involving a Pan Am B747-100 is excluded from accident rate computations.

Table 3 - LIST OF ACCIDENTS
14 CFR 121 OPERATIONS
1992

Date	Location	Type of Operation	Air Carrier	Aircraft Type	Aircraft Damage	Degree of Injury	First Occurrence
1/09	Narita, Japan	Sch Passenger	United	Boeing 747-100	None	Serious	In flight encounter with wx.
1/18	Horseheads, NY	Sch Pax/Cargo	US Air	McD-Doug DC-9-30	Substantial	Serious	On ground collision with ter.
2/15	Swanton, OH	Sch Cargo	Air Trans.	McD-Doug DC-8-63	Destroyed	Fatal (4)	Loss of control - in flight
3/21	Phoenix, AZ	Sch Pax/Cargo	United	Boeing 757-222	None	Serious	Miscellaneous/other
3/22	Flushing, NY	Sch Passenger	US Air	Fokker 28-4000	Destroyed	Fatal (27)	Loss of control - in flight
3/27	Hayden, CO	Sch Passenger	American	Boeing 757-223	None	Serious	On ground collision with obj.
4/08	Dayton, OH	Sch Pax/Cargo	TransWorld	McD-Doug DC-9-32	Minor	Fatal (1)	Airframe/component/system failure/malfunction
5/14	Palacios, TX	Sch Pax/Cargo	Southwest	Boeing 737-200	None	Serious	In flight encounter with wx.
7/02	Janesville, WI	Sch Pax/Cargo	United	Boeing 727-200	None	Serious	In flight encounter with wx.
7/30	Jamaica, NY	Sch Pax/Cargo	TransWorld	Lockheed L-1011	Destroyed	Serious	Airframe/component/system failure/malfunction
8/03	Springfield, MO	Sch Pax/Cargo	Southwest	Boeing 737-300	None	Serious	In flight encounter with wx.
8/06	San Francisco, CA	Sch Pax/Cargo	United	Boeing 737-200	None	Serious	Abrupt maneuver
8/26	Miami, FL	Sch Passenger	Carnival	Boeing 737-200	None	Serious	Airframe/component/system failure/malfunction
10/01	Martinique, France	Nonsch Cargo	DHL Airways	Boeing 727-200	Substantial	None	Miscellaneous/other
11/13	Atlanta, GA	Sch Pax/Cargo	Delta	Boeing 757-232	None	Serious	Miscellaneous/other
11/27	Chicago, IL	Sch Pax/Cargo	Delta	Boeing 727-232	None	Serious	Miscellaneous/other
12/08	Flushing, NY	Sch Pax/Cargo	US Air	Boeing 737-300LR	None	Fatal (1)	On ground collision with obj.
12/09	Denver, CO	Nonsch Cargo	Connie Kalit.	McD-Doug DC-8-52	Substantial	None	In flight encounter with wx.

Table 4 - ACCIDENTS AND RATES BY TYPE OF OPERATION
14 CFR 121 OPERATIONS
1992

	Type of Operation				
	Scheduled				
	Passenger/ Cargo	All Cargo	All	All Non-Scheduled	All
Accidents	15	1	16	2	18
Fatal Accidents	3	1	4	0	4
Aircraft Miles Flown (Thousands)	4,620,240	195,834	4,816,075	271,648	5,087,723
Aircraft Hours Flown	11,328,088	538,125	11,866,213	629,454	12,495,667
Departures Flown	7,341,269	378,446	7,719,715	361,076	8,080,791
Accident Rates					
Per Million Miles Flown	0.0032	0.0051	0.0033	0.0074	0.0035
Per Hundred Thousand Hours Flown	0.132	0.186	0.135	0.318	0.144
Per Hundred Thousand Departures Flown	0.204	0.264	0.207	0.554	0.223
Fatal Accident Rates					
Per Million Miles Flown	0.0006	0.0051	0.0008	0.	0.0008
Per Hundred Thousand Hours Flown	0.026	0.186	0.034	0.	0.032
Per Hundred Thousand Departures Flown	0.041	0.264	0.052	0.	0.050

Table 5 - PERSONS BY ROLE AND DEGREE OF INJURY
14 CFR 121 OPERATIONS
1992

	Degree of Injury				
Role of Person	Fatal	Serious	Minor	None	Total
Pilot	2	0	0	15	17
Copilot	1	0	1	16	18
Flight engineer	1	0	0	6	7
Cabin attendants	1	5	1	61	68
Other crew	0	0	0	2	2
Passenger	26	14	27	1725	1592
Total aboard	31	19	29	1825	1904
Other ground	2	3	0	1	6
Grand total	33	22	29	1826	1910
Percent	1.7	1.2	1.5	95.6	

Table 6 - AIRCRAFT BY DAMAGE AND DEGREE OF INJURY
14 CFR 121 OPERATIONS
1992

Aircraft damage	Degree of injury				Aircraft	
	None	Minor	Serious	Fatal	No.	Percent
None	0	0	10	1	11	61.1
Minor	0	0	0	1	1	5.6
Substantial	2	0	1	0	3	16.7
Destroyed	0	0	1	2	3	16.7
Aircraft						
Number	2	0	12	4	18	
Percent	11.1	.0	66.7	22.2		

Table 7 - AIRCRAFT BY FIRST OCCURRENCE AND DEGREE OF INJURY AND BY DAMAGE
14 CFR 121 OPERATIONS
1992

Type of first occurrence *	Degree of injury				Aircraft damage				Aircraft	
	None	Minor	Serious	Fatal	None	Minor	Substantial	Destroy	No.	Percent
Abrupt maneuver	0	0	1	0	1	0	0	0	1	5.6
Airframe/component/system failure/malfunction	0	0	2	1	1	1	0	1	3	16.7
In flight encounter with weather	1	0	4	0	4	0	1	0	5	27.8
Loss of control - in flight	0	0	0	2	0	0	0	2	2	11.1
On ground collision with object	0	0	1	1	2	0	0	0	2	11.1
On ground collision with terrain	0	0	1	0	0	0	1	0	1	5.6
Miscellaneous/other	1	0	3	0	3	0	1	0	4	22.2
Aircraft										
Number -	2	0	12	4	11	1	3	3	18	
Percent -	11.1	.0	66.7	22.2	61.1	5.6	16.7	16.7		

* 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 OCCURANCE AND BROAD PHASE OF OPERATION
14 CFR 121 OPERATIONS
1992

Type of first occurrence	Phase of opertation								Aircraft	
	Stndg	Taxi	Tkoff	Climb	Cruis	Dscnt	Aprch	Landg	No.	Percent
Abrupt maneuver	0	1	0	0	0	0	0	0	1	5.6
Airframe/component/system failure/malfunction	2	0	1	0	0	0	0	0	3	16.7
In flight encounter with weather	0	0	0	1	1	3	0	0	5	27.8
Loss of control - in flight	0	0	1	0	0	0	1	0	2	11.1
On ground collision with object	0	2	0	0	0	0	0	0	2	11.1
On ground collision with terrain	0	0	0	0	0	0	0	1	1	5.6
Miscellaneous/other	1	2	1	0	0	0	0	0	4	22.2
Aircraft										
Number -	3	5	3	1	1	3	1	1	18	
Percent -	16.7	27.8	16.7	5.6	5.6	16.7	5.6	5.6		

Table 9 - AIRCRAFT BY PHASE OF OPERATION AND DEGREE OF INJURY AND BY DAMAGE
14 CFR 121 OPERATIONS
1992

Phase of operation *	Degree of injury				Aircraft damage				Aircraft	
	None	Minor	Ser	Fatal	None	Minor	Subs	Dest	No.	Percent
Standing	0	0	0	1	0	1	0	0	1	5.6
Standing - engines operating	0	0	1	0	1	0	0	0	1	5.6
Standing - engines not operating	0	0	1	0	1	0	0	0	1	5.6
Taxi - pushback/tow	0	0	4	1	5	0	0	0	5	27.8
Takeoff - ground run	1	0	0	0	0	0	1	0	1	5.6
Takeoff - initial climb	0	0	1	1	0	0	0	2	2	11.1
Climb - to cruise	0	0	1	0	1	0	0	0	1	5.6
Cruise - normal	1	0	0	0	0	0	1	0	1	5.6
Descent - normal	0	0	3	0	3	0	0	0	3	16.7
Approach - missed approach (IFR)	0	0	0	1	0	0	0	1	1	5.6
Landing - flare/touchdown	0	0	1	0	0	0	1	0	1	5.6
Aircraft										
Number -	2	0	12	4	11	1	3	3	18	
Percent -	11.1	.0	66.7	22.2	61.1	5.6	16.7	16.7		

* 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
1992

Condition of light	Type of weather		Aircraft	
	VMC	IMC	No.	Percent
Daylight	9	1	10	55.5
Night (dark)	2	4	6	33.3
Night (bright)	1	0	1	5.6
Dusk	1	0	1	5.6
Aircraft				
Number -	13	5	18	
Percent -	72.2	27.8		

Table 11 - AIRCRAFT BY TYPE OF OPERATION AND DEGREE OF INJURY
14 CFR 121 OPERATIONS
1992

Type of Operation	Degree of Injury				Aircraft	
	None	Minor	Serious	Fatal	No.	Percent
Scheduled Domestic Passenger	0	0	1	1	2	11.1
Scheduled Domestic Cargo	0	0	0	1	1	5.6
Scheduled Domestic Pax/Cargo	0	0	9	2	11	61.1
Scheduled International Pass.	0	0	2	0	2	11.1
Nonscheduled Domestic Cargo	1	0	0	0	1	5.6
Nonscheduled International Cargo	1	0	0	0	1	5.6
Aircraft						
Number -	2	0	12	4	18	
Percent -	11.1	.0	66.7	22.2		

Table 12 - AIRCRAFT BY OCCURRENCE OF FIRE AND DEGREE OF INJURY AND BY DAMAGE
14 CFR 121 OPERATIONS
1992

Aircraft fire	Degree of injury				Aircraft damage				Aircraft	
	None	Minor	Ser	Fatal	None	Minor	Subs	Dest	No.	Percent
None	2	0	11	2	11	1	3	0	15	83.3
On ground	0	0	1	2	0	0	0	3	3	16.7
Aircraft										
Number -	2	0	12	4	11	1	3	3	18	
Percent -	11.1	.0	66.7	22.2	61.1	5.6	16.7	16.7		

Table 13 - BROAD CAUSE/FACTOR ASSIGNMENTS*
14 CFR 121 OPERATIONS
1992

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 #	**1**	**3**	**2**	**3**	**3**	**6**
Airframe	0	0	1	1	1	1
Landing Gear	1	1	0	0	1	1
Systems/Equipment/Instruments	0	2	1	2	1	4
Environment #	**0**	**4**	**1**	**2**	**1**	**6**
Weather	0	4	1	2	1	6
Personnel #	**4**	**11**	**4**	**6**	**4**	**11**
Pilot	2	5	2	3	2	5
Others (Aboard)	0	0	0	1	0	1
Others (Not Aboard)	3	8	2	3	3	8
Number of Aircraft					4	18
NTSB Determined Probable Cause					4	16

---

* 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
1983 - 1992

Year	Accidents	Fatal Accidents	Fatalities		Accident Rate per 100,000* Aircraft Hours Flown		
			Total	Aboard Aircraft In This Category	Hours Flown	Total	Fatal
1983	24	4	15	14	7,298,799	0.329	0.055
1984	17	1	4	4	8,165,124	0.208	0.012
1985	22	7	526	525	8,709,894	0.253	0.080
1986	24	3	8	7	9,976,104	0.231	0.020
1987	36	5	232	230	10,645,192	0.329	0.038
1988	29	3	285	274	11,140,548	0.251	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	11,900,023	0.218	0.034
1992	18	4	33	31	12,495,667	0.144	0.032

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

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

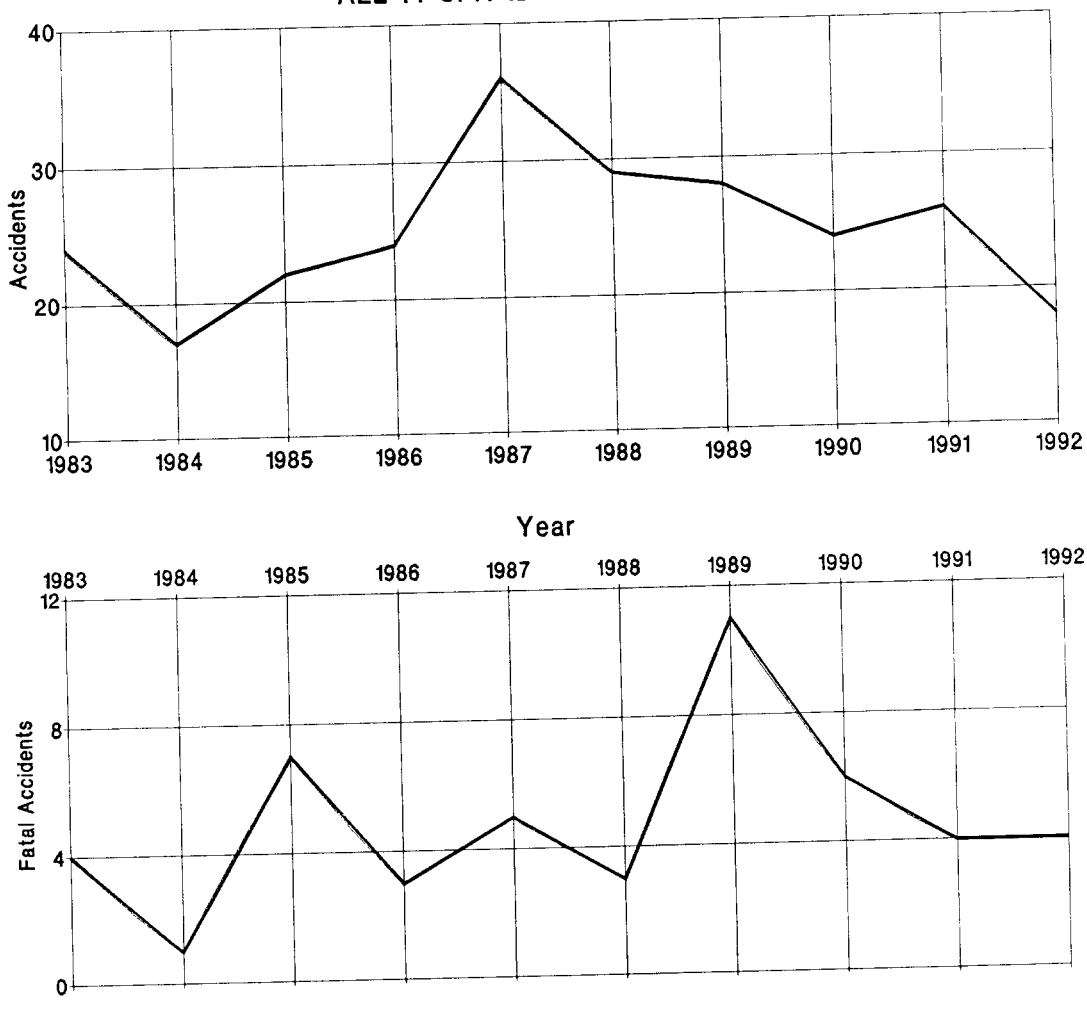

Figure 2 - NUMBER OF FATALITIES
ALL 14 CFR 121 OPERATIONS

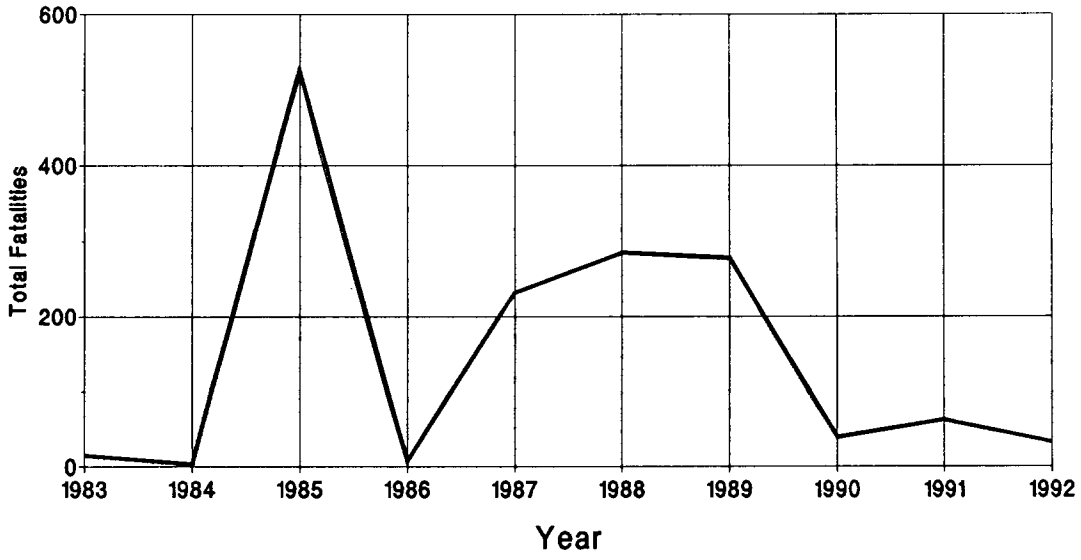

Figure 3 - ACCIDENTS PER 100,000 HOURS FLOWN
ALL 14 CFR 121 OPERATIONS

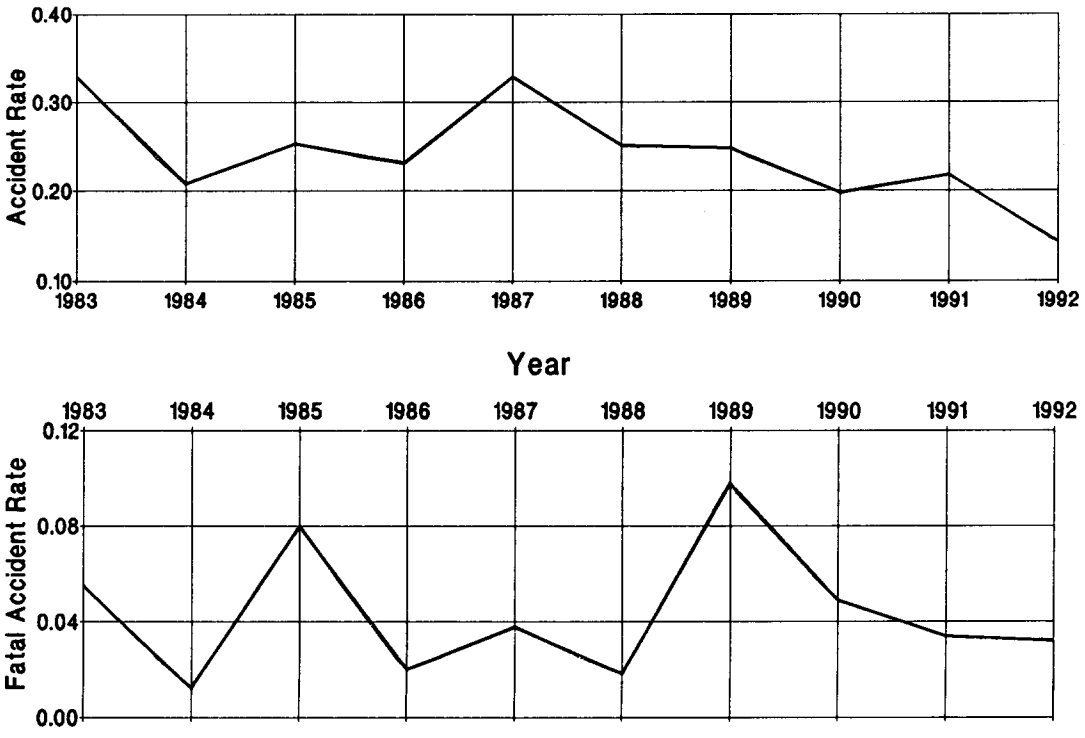

Table 15 - ACCIDENTS, FATAL ACCIDENTS, FATALITIES, AND RATES
SCHEDULED 14 CFR 121 OPERATIONS
1983 - 1992

Year	Accidents	Fatal Accidents	Fatalities		Accident Rate per 100,000* Aircraft Hours Flown		
			Total	Aboard Aircraft In This Category	Hours Flown	Total	Fatal
1983	22	4	15	14	6,914,969	0.318	0.058
1984	13	1	4	4	7,736,037	0.168	0.013
1985	17	4	197	196	8,265,332	0.206	0.048
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	28	3	285	274	10,521,052	0.257	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	11,253,868	0.222	0.036
1992	16	4	33	31	11,866,213	0.135	0.034

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

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

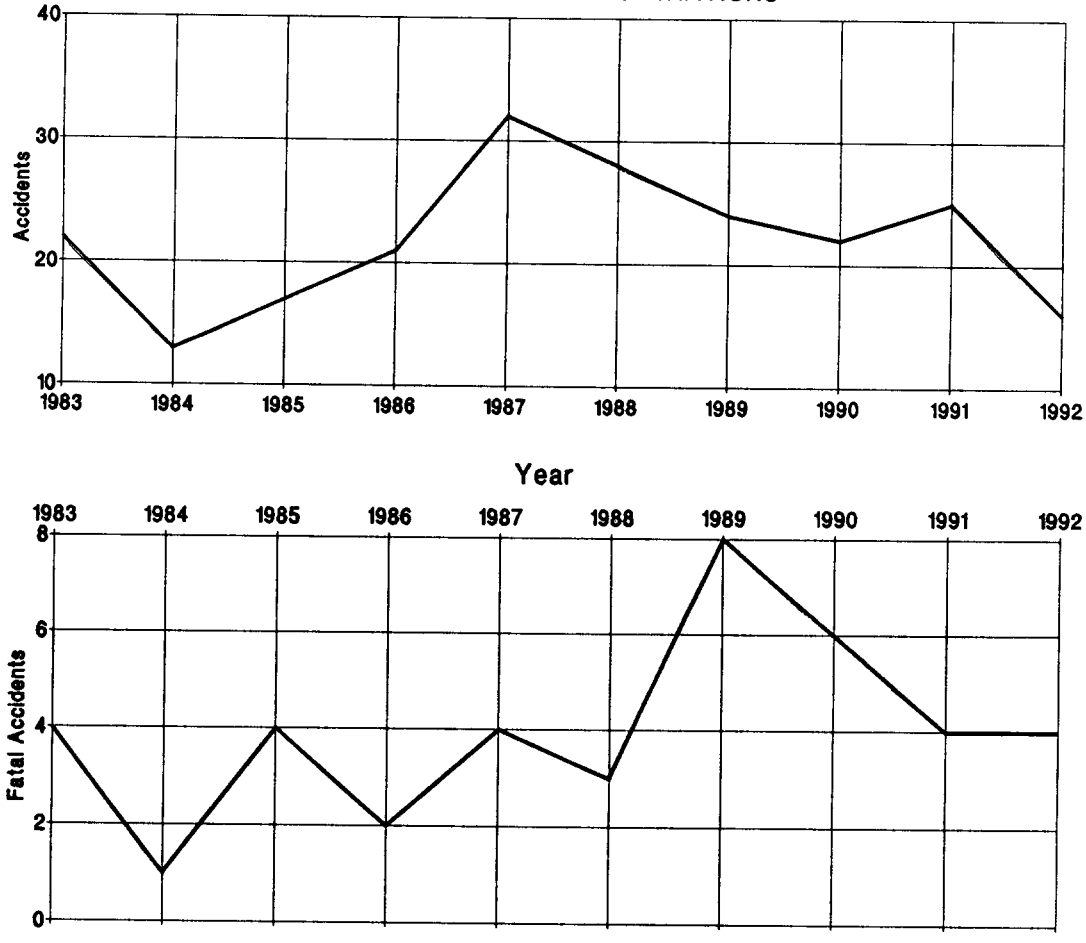

Figure 5 - NUMBER OF FATALITIES
SCHEDULED 14 CFR 121 OPERATIONS

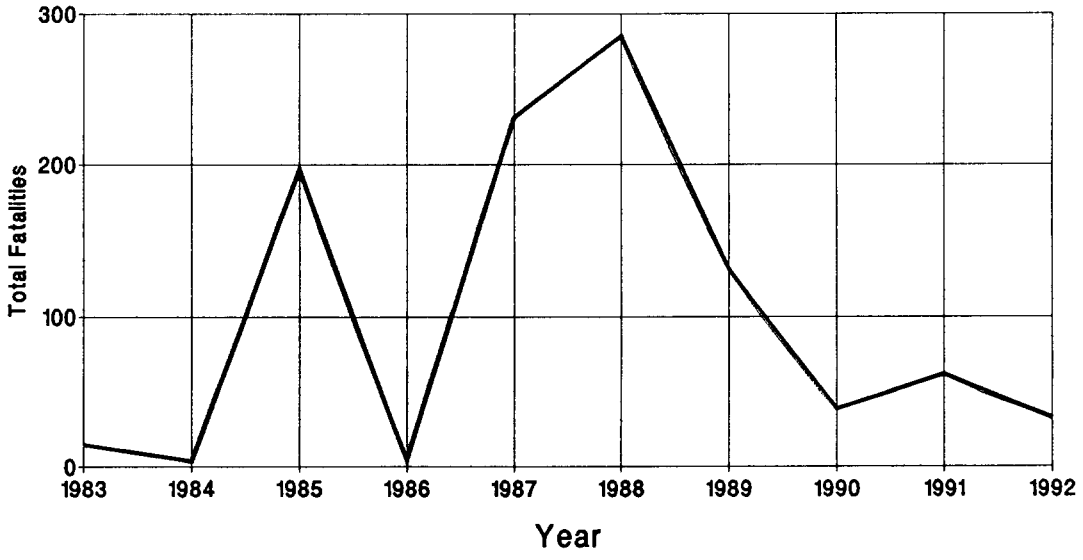

Figure 6 - ACCIDENTS PER 100,000 HOURS FLOWN
SCHEDULED CFR 121 OPERATIONS

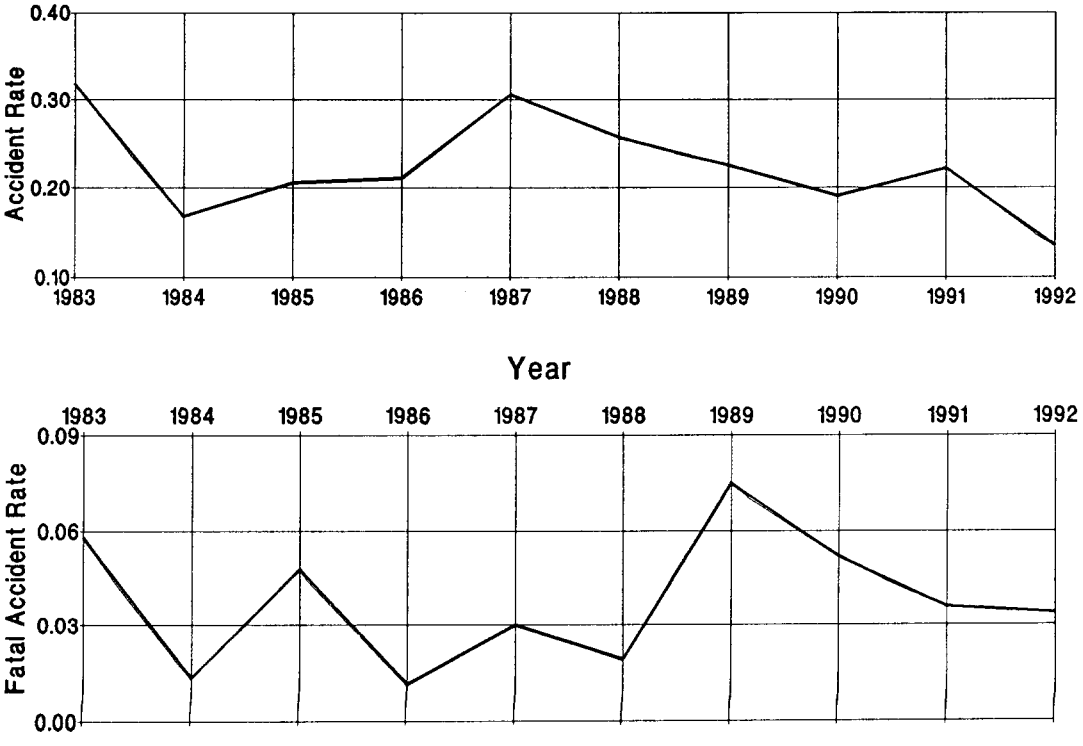

Table 16 - ACCIDENTS, FATAL ACCIDENTS, FATALITIES, AND RATES
NONSCHEDULED 14 CFR 121 OPERATIONS
1983 - 1992

Year	Accidents	Fatal Accidents	Fatalities		Hours Flown	Accident Rate per 100,000* Aircraft Hours Flown	
			Total	Aboard Aircraft In This Category		Total	Fatal
1983	2	0	0	0	383,830	0.521	0.000
1984	4	0	0	0	429,087	0.932	0.000
1985	5	3	329	329	444,562	1.125	0.675
1986	3	1	3	3	480,946	0.624	0.208
1987	4	1	1	1	529,785	0.755	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	646,155	0.155	0.000
1992	2	0	0	0	629,454	0.318	0.000

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

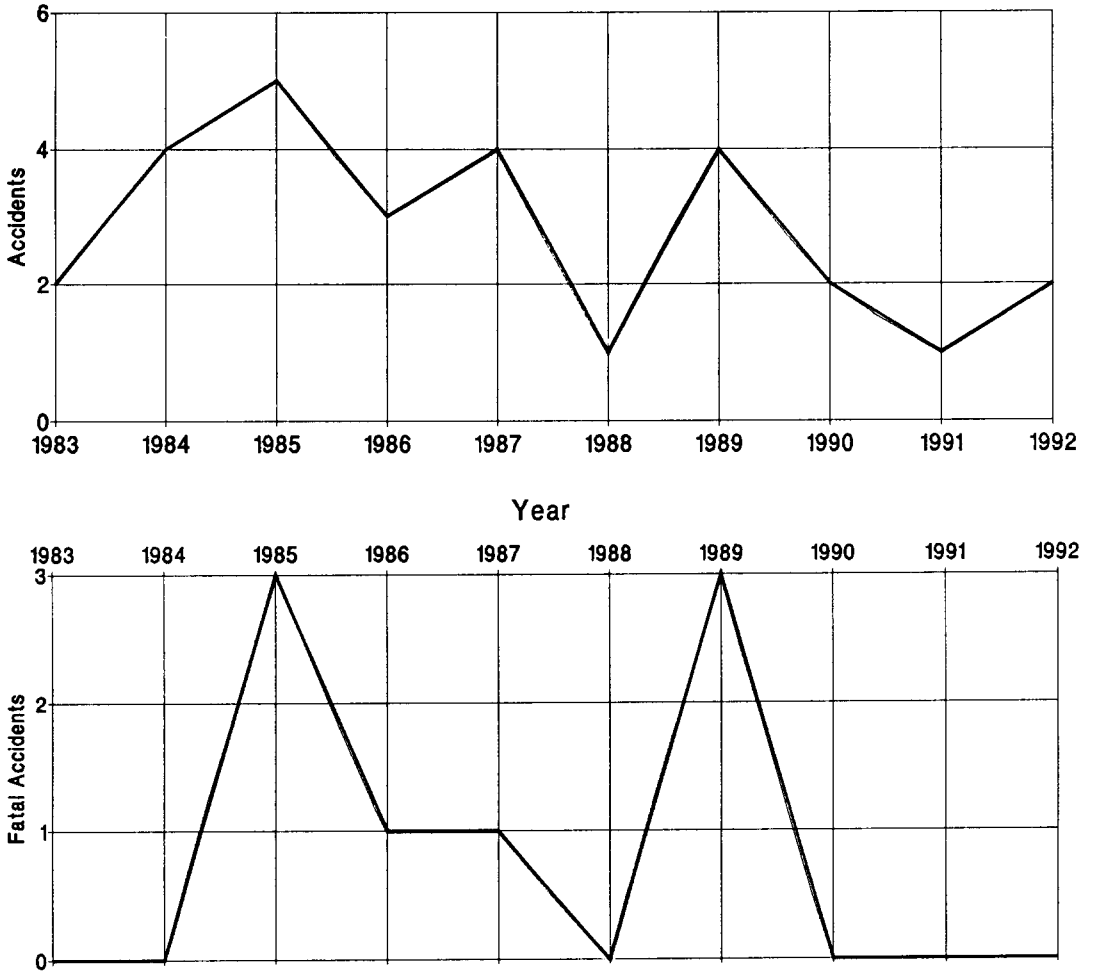

Figure 8 - NUMBER OF FATALITIES
NONSCHEDULED 121 OPERATIONS

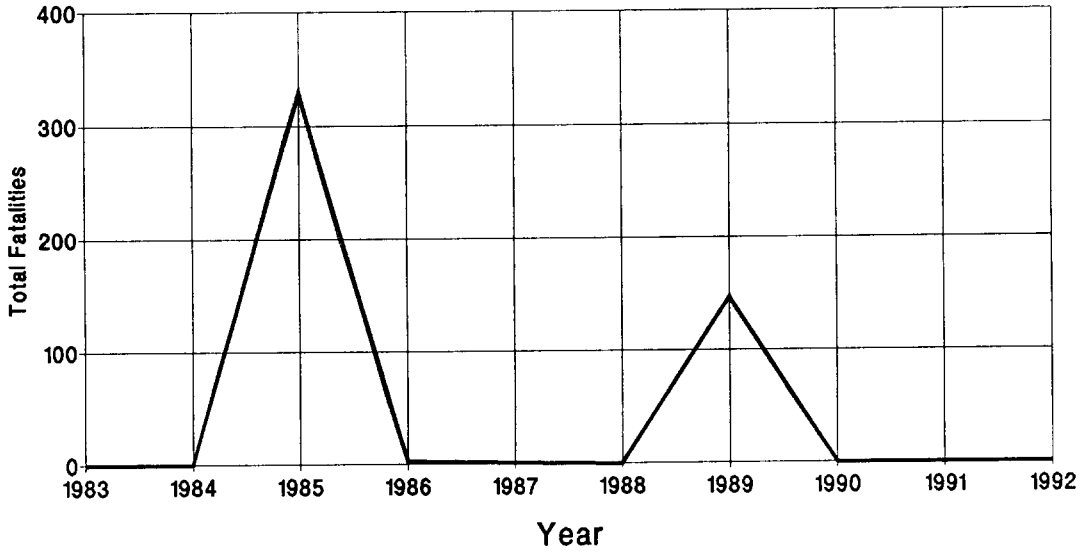

Figure 9 - ACCIDENTS PER 100,000 HOURS FLOWN
NONSCHEDULED 14 CFR 121 OPERATIONS

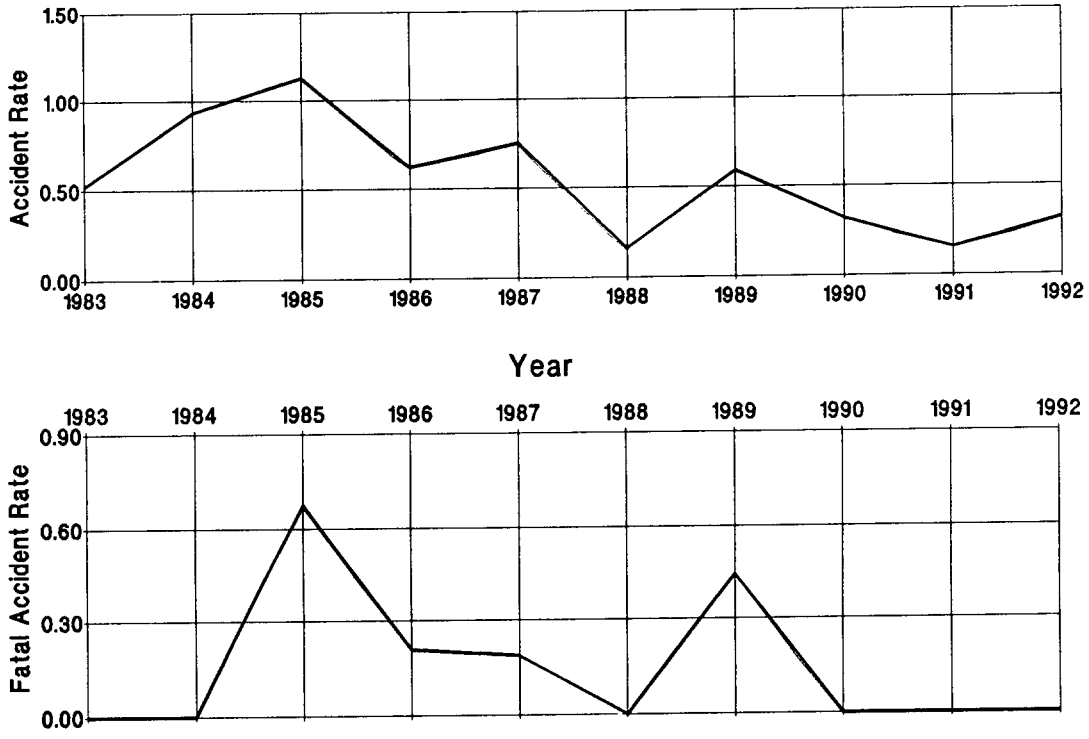

Table 17 - FIRST OCCURRENCES IN ALL ACCIDENTS AND IN FATAL ACCIDENTS
14 CFR 121 OPERATIONS
1992 AND 1987 - 1991

Type of Occurrence	All Accidents				Fatal Accidents			
	1992		1987 - 1991		1992		1987 - 1991	
	No.	Percent	Mean	Percent	No.	Percent	Mean	Percent
On ground collision with object	2	11.1	5.6	19.2	1	25.0	1.4	23.3
In flight encounter with weather	5	27.8	5.2	17.8	0	.0	.2	3.3
Airframe/component/system failure/malfunction	3	16.7	4.6	15.8	1	25.0	.8	13.3
Miscellaneous/other	4	22.2	2.8	9.6	0	.0	.4	6.7
Not reported	0	.0	1.4	4.8	0	.0	.4	6.7
Loss of control - in flight	2	11.1	1.2	4.1	2	50.0	1.2	20.0
In flight collision with terrain	0	.0	1.0	3.4	0	.0	.4	6.7
Hard landing	0	.0	.8	2.7	0	.0	.0	.0
In flight collision with object	0	.0	.8	2.7	0	.0	.2	3.3
Loss of engine power(total) - mech failure/malfunction	0	.0	.8	2.7	0	.0	.0	.0
Fire/explosion	0	.0	.6	2.1	0	.0	.0	.0
Fire	0	.0	.6	2.1	0	.0	.0	.0
On ground collision with terrain	1	5.6	.6	2.1	0	.0	.0	.0
Altitude deviation,uncontrolled	0	.0	.4	1.4	0	.0	.0	.0
On ground encounter with weather	0	.0	.4	1.4	0	.0	.2	3.3
Loss of engine power(total) - non-mechanical	0	.0	.4	1.4	0	.0	.0	.0
Propeller blast or jet exhaust	0	.0	.4	1.4	0	.0	.0	.0
Explosion	0	.0	.2	.7	0	.0	.2	3.3
Main gear collapsed	0	.0	.2	.7	0	.0	.0	.0
Nose gear collapsed	0	.0	.2	.7	0	.0	.0	.0
Loss of control - on ground	0	.0	.2	.7	0	.0	.2	3.3
Overrun	0	.0	.2	.7	0	.0	.0	.0
Loss of engine power	0	.0	.2	.7	0	.0	.2	3.3
Loss of engine power(partial) - mech failure/malfunction	0	.0	.2	.7	0	.0	.0	.0
Propeller/rotor contact to person	0	.0	.2	.7	0	.0	.2	3.3
Abrupt maneuver	1	5.6	.0	.0	0	.0	.0	.0
Total	18	100.0	29.2	100.0	4	100.0	6.0	100.0

Table 18 - FIRST PHASES OF OPERATION IN ALL ACCIDENTS AND IN FATAL ACCIDENTS
14 CFR 121 OPERATIONS
1992 AND 1987 - 1991

	All Accidents				Fatal Accidents			
	1992		1987 - 1991		1992		1987 - 1991	
Phase of Operation	No.	Percent	Mean	Percent	No.	Percent	Mean	Percent
Cruise	1	5.6	6.4	21.9	0	.0	1.2	20.0
Taxi	5	27.8	5.0	17.1	1	25.0	.6	10.0
Takeoff	3	16.7	4.6	15.8	1	25.0	1.6	26.7
Landing	1	5.6	3.4	11.6	0	.0	.4	6.7
Standing	3	16.7	3.0	10.3	1	25.0	.6	10.0
Descent	3	16.7	2.6	8.9	0	.0	.0	.0
Approach	1	5.6	1.6	5.5	1	25.0	.8	13.3
Not reported	0	.0	1.4	4.8	0	.0	.4	6.7
Climb	1	5.6	1.2	4.1	0	.0	.4	6.7
Total Aircraft	18	100.0	29.2	100.0	4	100.0	6.0	100.0

Table 19 - BROAD CAUSE/FACTOR ASSIGNMENTS IN ALL ACCIDENTS AND IN FATAL ACCIDENTS
14 CFR 121 OPERATIONS
1992 AND 1987 - 1991

	All Accidents				Fatal Accidents			
	1992		1987 - 1991		1992		1987 - 1991	
Broad Cause/Factor	No.	Percent	Mean	Percent	No.	Percent	Mean	Percent
Other Person (Not Aboard)	8	44.4	11.6	39.7	3	75.0	3.2	53.3
Pilot	5	27.8	10.6	36.3	2	50.0	2.2	36.7
Weather	6	33.3	7.2	24.7	1	25.0	1.2	20.0
Other Person (Aboard)	1	5.6	5.2	17.8	0	.0	.4	6.7
Systems/Equipment/ Instruments	4	22.2	5.0	17.1	1	25.0	1.0	16.7
Propulsion System and Controls	0	.0	3.4	11.6	0	.0	.2	3.3
Object (tree,wires,etc)	0	.0	2.0	6.8	0	.0	.4	6.7
Light Conditions	0	.0	1.6	5.5	0	.0	.2	3.3
Airframe	1	5.6	1.4	4.8	1	25.0	1.0	16.7
Landing Gear	1	5.6	1.4	4.8	0	.0	.0	.0
Terrain/Runway Condition	0	.0	1.0	3.4	0	.0	.2	3.3
Flight Control System	0	.0	.8	2.7	0	.0	.2	3.3
Airport/Airways Facilities, Aids	0	.0	.6	2.1	0	.0	.4	6.7
Total Aircraft	18		29.2		4		6.0	
NTSB Determined Probable Cause	16		26.8		4		5.0	

Scheduled 14 CFR 135 Operations

There were 23 accidents involving scheduled 14 CFR 135 operations (commuter air carriers) in 1992. The average number of accidents per year in this category for the years 1983 through 1991 is 20.1. The accident rate per 100,00 hours flown for 1992 is 1.009, compared with an overall rate of 1.053 for the period 1983 through 1991.

Of the 23 accidents in this category, seven accidents were fatal and resulted in a total of 21 fatalities. During the period 1983 through 1991, there were an average of 5.1 fatal accidents and 35.1 fatalities per year in Scheduled 14 CFR 135 operations, with a fatal accident rate of 0.321 accidents per 100,000 hours flown for the year 1992.

It should be noted that scheduled 14 CFR 135 aircraft accidents in Alaska have increased within the last three years, while the rest of the states have remained steady. Also for the first time, in 1992, more than half the scheduled part 135 accidents occurred in Alaska.

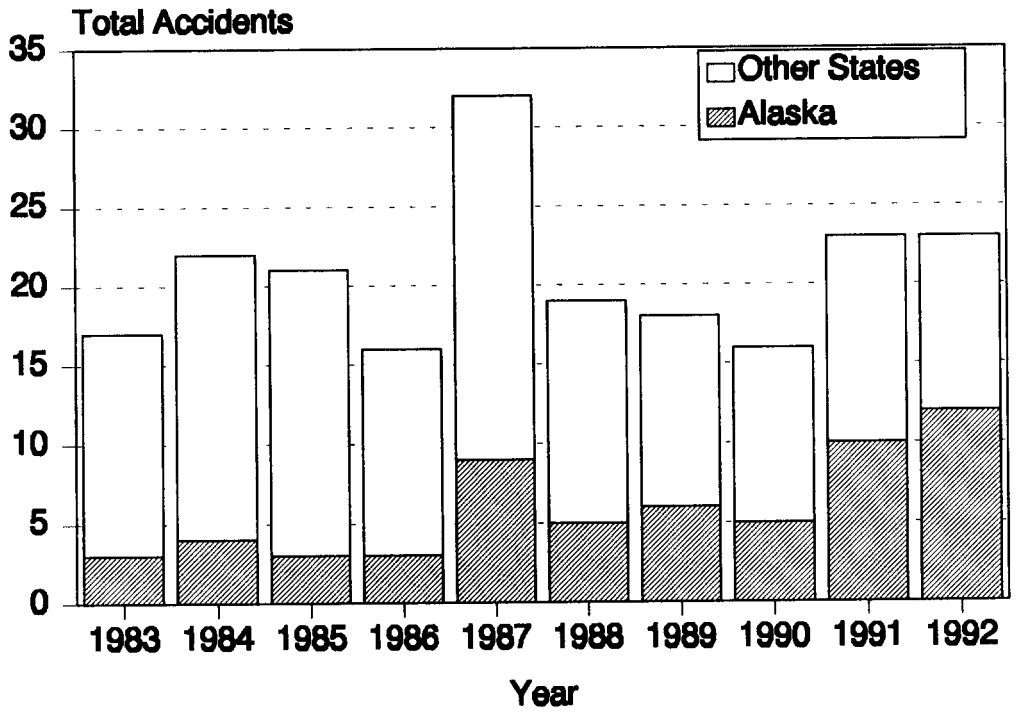

Table 20 - SUMMARY OF LOSSES
SCHEDULED 14 CFR 135 OPERATIONS
1988 - 1992

	1988	1989	1990	1991	1992
Accidents					
Fatal	2	5	3	8	7
Involved Serious Injury	2	1	2	3	1
Involved Minor or No Injury	15	12	10	11	15
Total	19	18	15	22	23
Fatalities					
Passenger	17	25	3	64	11
Crew	4	6	1	13	10
Other Persons	0	0	2	22	0
Total	21	31	6	99	21
Aircraft Damage (Scheduled 14 CFR 135)					
Destroyed	3	5	2	9	7
Substantial	15	13	12	13	16
Minor	1	0	1	0	0
None	0	1	0	1	0
Total	19	19	15	23	23

Table 21 - ACCIDENT RATES
SCHEDULED 14 CFR 135 OPERATIONS

	1988	1989	1990	1991	1992
Aircraft Miles Flown (Thousands)	380,237	393,619	450,067	381,464	442,107
Aircraft Hours Flown	2,092,689	2,240,555	2,336,952	2,171,067	2,181,390
Departures Flown	2,909,005	2,818,520	3,159,763	2,647,876	2,911,168
Accident Rates					
Per Million Miles Flown	0.050	0.046	0.033	0.058	0.050
Per Hundred Thousand Hours Flown	0.908	0.803	0.642	1.013	1.009
Per Hundred Thousand Departures Flown	0.653	0.639	0.475	0.831	0.756
Fatal Accident Rates					
Per Million Miles Flown	0.005	0.013	0.007	0.021	0.016
Per Hundred Thousand Hours Flown	0.096	0.223	0.128	0.368	0.321
Per Hundred Thousand Departures Flown	0.069	0.177	0.095	0.302	0.240

Table 22 - LIST OF ACCIDENTS
SCHEDULED 14 CFR 135 OPERATIONS
1992

Date	Location	Type of Operation	Air Carrier	Aircraft Type	Aircraft Damage	Degree of Injury	First Occurrence
1/03	Gabriels, NY	Passenger	Commutair	Beech 1900C	Destroyed	Fatal (2)	In flight collision with terrain
1/23	Clewiston, FL	Passenger	Air Sunshine	Cessna 402-C	Destroyed	Fatal (2)	In flight encounter with weather
2/04	Tununak, AK	Pax and Cargo	Camai Air	Piper PA-32-300	Substantial	None	In flight encounter with weather
2/04	Metlakatla, AK	Pax and Cargo	Taqiam Air	DeHavilland DHC-3	Substantial	None	Airframe/component/ system failure malf.
2/24	Anchorage, AK	Pax and Cargo	Markair Express	DeHavilland DH6	Substantial	Minor	On ground collision with object
3/24	Sleetmute, AK	Pax and Cargo	Arctic Circle Air	Piper PA-32-301	Substantial	Minor	Loss of control - in flight
4/02	Kotzebue, AK	Pax and Cargo	Bering Air	Cessna U206G	Substantial	None	Loss of control - in flight
4/04	Kotzebue, AK	Pax and Cargo	Frontier Flying	Piper PA-31-350	Substantial	None	In flight encounter with weather
4/17	Lexington, KY	Pax and Cargo	Mesaba Airlines	Fairchiled SA-227AC	Substantial	Minor	On ground collision with object
6/07	Mayaguez, PR	Passenger	Executive Air Charter	CASA 212	Destroyed	Fatal (5)	Loss of control - in flight
6/08	Anniston, AL	Passenger	GP Express	Beech C99	Destroyed	Fatal (3)	In flight collision with terrain
6/25	Boston, MA	Passenger	Northeast Express	Fairchild SA-227AC	Substantial	None	Loss of control - in flight
7/20	Dillingham, AK	Pax and Cargo	Markair Express	Cessna 207	Substantial	None	In flight collision with terrain
8/03	Pilot Station, AK	Pax and Cargo	Markair Express	Cessna 207A	Substantial	None	Loss of power(total) - non-mechanical
8/06	Funter Pass, AK	Pax and Cargo	Alaska Juneau Aeron.	Cessna 207	Substantial	Serious	In flight collision with terrain

Table 22 - LIST OF ACCIDENTS (Continued)
SCHEDULED 14 CFR 135 OPERATIONS
1992

Date	Location	Type of Operation	Air Carrier	Aircraft Type	Aircraft Damage	Degree of Injury	First Occurrence
8/22	Togiak, AK	Passenger	Peninsula Airways	Piper PA-32	Substantial	None	In flight collision with terrain
10/06	Nightmute, AK	Pax and Cargo	Camai Air	Piper PA-32-300	Substantial	None	Undershoot
10/20	DFW Airport, TX	Passenger	Metro Airlines	British Aerospace 3100	Substantial	None	On ground collision with object
10/27	Mariana Islands	Passenger	Pacific Island Av.	Cessna 310R	Destroyed	Fatal (3)	Vortex turbulence encountered
10/31	Grand Junction, CO	Passenger	Alpine Aviation	Piper PA-42	Destroyed	Fatal (3)	In flight collision with terrain
11/08	Kiana, AK	Pax and Cargo	Baker Aviation	Cessna 402C	Destroyed	Fatal (3)	In flight collision with terrain
11/15	Denver, CO	Passenger	Britt Airways	Beech 1900C	Substantial	None	On ground collision with object
11/21	Billings, MT	Pax and Cargo	Big Sky Transp.	Fairchild SA-226TC	Substantial	None	Gear not extended

Table 23 - PERSONS BY ROLE AND DEGREE OF INJURY
SCHEDULED 14 CFR 135 OPERATIONS
1992

Role of Person	Degree of Injury				
	Fatal	Serious	Minor	None	Total
Pilot	6	2	1	14	23
Copilot	2	1	0	6	9
Passenger	13	4	0	68	85
Total aboard	21	7	1	88	117
Other ground	0	0	2	1	3
Grand total	21	7	3	89	120
Percent	17.5	5.8	2.5	74.2	

Table 24 - AIRCRAFT BY DAMAGE AND DEGREE OF INJURY
SCHEDULED 14 CFR 135 OPERATIONS
1992

Aircraft damage	Degree of injury				Aircraft	
	None	Minor	Ser	Fatal	No.	Percent
Substantial	12	3	1	0	16	69.6
Destroyed	0	0	0	7	7	30.4
Aircraft						
Number -	12	3	1	7	23	
Percent -	52.2	13.0	4.3	30.4		

Table 25 - AIRCRAFT BY FIRST OCCURRENCE AND DEGREE OF INJURY AND BY DAMAGE
SCHEDULED 14 CFR 135 OPERATIONS
1992

Type of first occurrence	Degree of injury				Aircraft damage				Aircraft	
	None	Minor	Ser	Fatal	None	Minor	Subs	Dest	No.	Percent
Airframe/component/system failure/malfunction	1	0	0	0	0	0	1	0	1	4.3
Gear not extended	1	0	0	0	0	0	1	0	1	4.3
In flight collision w/ter.	2	0	1	4	0	0	3	4	7	30.4
In flight encounter w/wx.	2	0	0	1	0	0	2	1	3	13.0
Loss of control - in flight	2	1	0	1	0	0	3	1	4	17.4
On ground collision w/obj.	2	2	0	0	0	0	4	0	4	17.4
Loss of power(total) - non-mechanical	1	0	0	0	0	0	1	0	1	4.3
Undershoot	1	0	0	0	0	0	1	0	1	4.3
Vortex turbulence encountered	0	0	0	1	0	0	0	1	1	4.3
Aircraft										
Number -	12	3	1	7	0	0	16	7	23	
Percent -	52.2	13.0	4.3	30.4	.0	.0	69.6	30.4		

Table 26 AIRCRAFT BY FIRST OCCURRENCE AND BROAD PHASE OF OPERATION
SCHEDULED 14 CFR 135 OPERATIONS
1992

Type of first occurrence	Phase of operation							Aircraft	
	Stndg	Taxi	Tkoff	Cruis	Dscnt	Aprch	Landg	No.	Percent
Airframe/component/system failure/malfunction	0	0	0	0	0	1	0	1	4.3
Gear not extended	0	0	0	0	0	0	1	1	4.3
In flight collision with terrain	0	0	1	2	1	3	0	7	30.4
In flight encounter with weather	0	0	0	0	1	2	0	3	13.0
Loss of control - in flight	0	0	2	0	0	1	1	4	17.4
On ground collision with object	1	3	0	0	0	0	0	4	17.4
Loss of power(total) - non-mechanical	0	0	0	1	0	0	0	1	4.3
Undershoot	0	0	0	0	0	1	0	1	4.3
Vortex turbulence encountered	0	0	1	0	0	0	0	1	4.3
Aircraft									
Number -	1	3	4	3	2	8	2	23	
Percent -	4.3	13.0	17.4	13.0	8.7	34.8	8.7		

Table 27 - AIRCRAFT BY PHASE OF OPERATION AND DEGREE OF INJURY AND BY DAMAGE
SCHEDULED 14 CFR 135 OPERATIONS
1992

Phase of operation	Degree of injury				Aircraft damage				Aircraft	
	None	Minor	Ser	Fatal	None	Minor	Subs	Dest	No.	Percent
Standing - engines operating	0	1	0	0	0	0	1	0	1	4.3
Taxi - to takeoff	2	0	0	0	0	0	2	0	2	8.7
Taxi - from landing	0	1	0	0	0	0	1	0	1	4.3
Takeoff - initial climb	2	1	0	1	0	0	3	1	4	17.4
Cruise	1	0	0	0	0	0	1	0	1	4.3
Cruise - normal	1	0	0	1	0	0	1	1	2	8.7
Descent	0	0	1	0	0	0	1	0	1	4.3
Descent - normal	0	0	0	1	0	0	0	1	1	4.3
Approach	0	0	0	1	0	0	0	1	1	4.3
Approach - VFR pattern - final approach	3	0	0	0	0	0	3	0	3	13.0
Approach - IAF to FAF/ outer marker (IFR)	1	0	0	1	0	0	1	1	2	8.7
Approach - FAF/outer marker to threshold (IFR)	0	0	0	2	0	0	0	2	2	8.7
Landing	1	0	0	0	0	0	1	0	1	4.3
Landing - flare/touchdown	1	0	0	0	0	0	1	0	1	4.3
Aircraft										
Number -	12	3	1	7	0	0	16	7	23	
Percent -	52.2	13.0	4.3	30.4	.0	.0	69.6	30.4		

Table 28 - AIRCRAFT BY CONDITION OF LIGHT AND TYPE OF WEATHER
SCHEDULED 14 CFR 135 OPERATIONS
1992

Condition of light	Type of weather		Aircraft	
	VMC	IMC	No.	Percent
Daylight	13	3	16	69.6
Night (dark)	4	1	5	21.7
Night (bright)	1	0	1	4.3
Dusk	0	1	1	4.3
Aircraft				
Number -	18	5	23	
Percent -	78.3	21.7		

Table 29 - AIRCRAFT BY TYPE OF OPERATION AND DEGREE OF INJURY
SCHEDULED 14 CFR 135 OPERATIONS
1992

Type of Operation	Degree of Injury				Aircraft	
	None	Minor	Serious	Fatal	No.	Percent
Scheduled Domestic Passenger	4	0	0	6	10	43.5
Scheduled Domestic Pass/Cargo	8	3	1	1	13	56.5
Aircraft						
Number -	12	3	1	7	23	
Percent -	52.2	13.0	4.3	30.4		

Table 30 - AIRCRAFT BY PROXIMITY TO AIRPORT AND FLIGHT PLAN
SCHEDULED 14 CFR 135 OPERATIONS
1992

Accident location	Flight Plan				Aircraft	
	None	VFR	IFR	Cmpny VFR	No.	Percent
Off Airport/Airstrip	1	1	5	3	10	43.5
On Airport	0	1	6	5	12	52.2
On Airstrip	0	1	0	0	1	4.3
Aircraft						
Number -	1	3	11	8	23	
Percent -	4.3	13.0	47.8	34.8		

Table 31 - AIRCRAFT BY OCCURRENCE OF FIRE AND DEGREE OF INJURY AND BY DAMAGE
SCHEDULED 14 CFR 135 OPERATIONS
1992

	Degree of injury				Aircraft damage				Aircraft	
Aircraft fire	None	Minor	Ser	Fatal	None	Minor	Subs	Dest	No.	Percent
None	12	3	1	4	0	0	16	4	20	87.0
On ground	0	0	0	3	0	0	0	3	3	13.0
Aircraft										
Number -	12	3	1	7	0	0	16	7	23	
Percent -	52.2	13.0	4.3	30.4	.0	.0	69.6	30.4		

Table 32 - AIRCRAFT BY TYPE OF AIRCRAFT AND DEGREE OF INJURY AND BY DAMAGE
SCHEDULED 14 CFR 135 OPERATIONS
1992

	Degree of injury				Aircraft damage				Aircraft	
Type of aircraft	None	Minor	Ser	Fatal	None	Minor	Subs	Dest	No.	Percent
Fixed Wing - Single Recip. Engine	7	1	1	0	0	0	9	0	9	39.1
Fixed Wing - Multiple Recip. Engine	1	0	0	3	0	0	1	3	4	17.4
Fixed Wing - Turboprop	4	2	0	4	0	0	6	4	10	43.5
Aircraft										
Number -	12	3	1	7	0	0	16	7	23	
Percent -	52.2	13.0	4.3	30.4	.0	.0	69.6	30.4		

Table 33 - BROAD CAUSE/FACTOR ASSIGNMENTS*
SCHEDULED 14 CFR 135 OPERATIONS
1992

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 #	**1**	**3**	**1**	**2**	**2**	**5**
Propulsion System and Controls	1	1	0	0	1	1
Flight Control System	0	1	0	0	0	1
Landing Gear	0	1	0	0	0	1
Systems/Equipment/Instruments	0	0	1	2	1	2
Environment #	**0**	**1**	**2**	**8**	**2**	**9**
Weather	0	0	2	5	2	5
Light Conditions	0	0	1	2	1	2
Object (trees, wires, etc.)	0	0	0	1	0	1
Airport/Airways Facilities,Aids	0	0	0	1	0	1
Terrain/Runway Condition	0	1	2	3	2	4
Personnel #	**7**	**20**	**3**	**7**	**7**	**21**
Pilot	7	18	2	4	7	18
Others (Not Aboard)	1	4	1	3	1	5
Number of Aircraft					7	23
NTSB Determined Probable Cause					7	23

---

* 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
1983 - 1992

Year	Accidents	Fatal Accidents	Fatalities		Accident Rate per 100,000* Aircraft Hours Flown		
			Total	Aboard Aircraft In This Category	Hours Flown	Total	Fatal
1983	17	2	11	10	1,510,908	1.125	0.132
1984	22	7	48	46	1,745,762	1.260	0.401
1985	21	7	37	36	1,737,106	1.209	0.403
1986	15	2	4	4	1,724,586	0.870	0.116
1987	32	10	59	57	1,946,349	1.644	0.514
1988	19	2	21	21	2,092,689	0.908	0.096
1989	18	5	31	31	2,240,555	0.803	0.223
1990	15	3	6	4	2,336,952	0.642	0.128
1991	22	8	99	77	2,171,067	1.013	0.368
1992	23	7	21	21	2,181,390	1.009	0.321

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

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

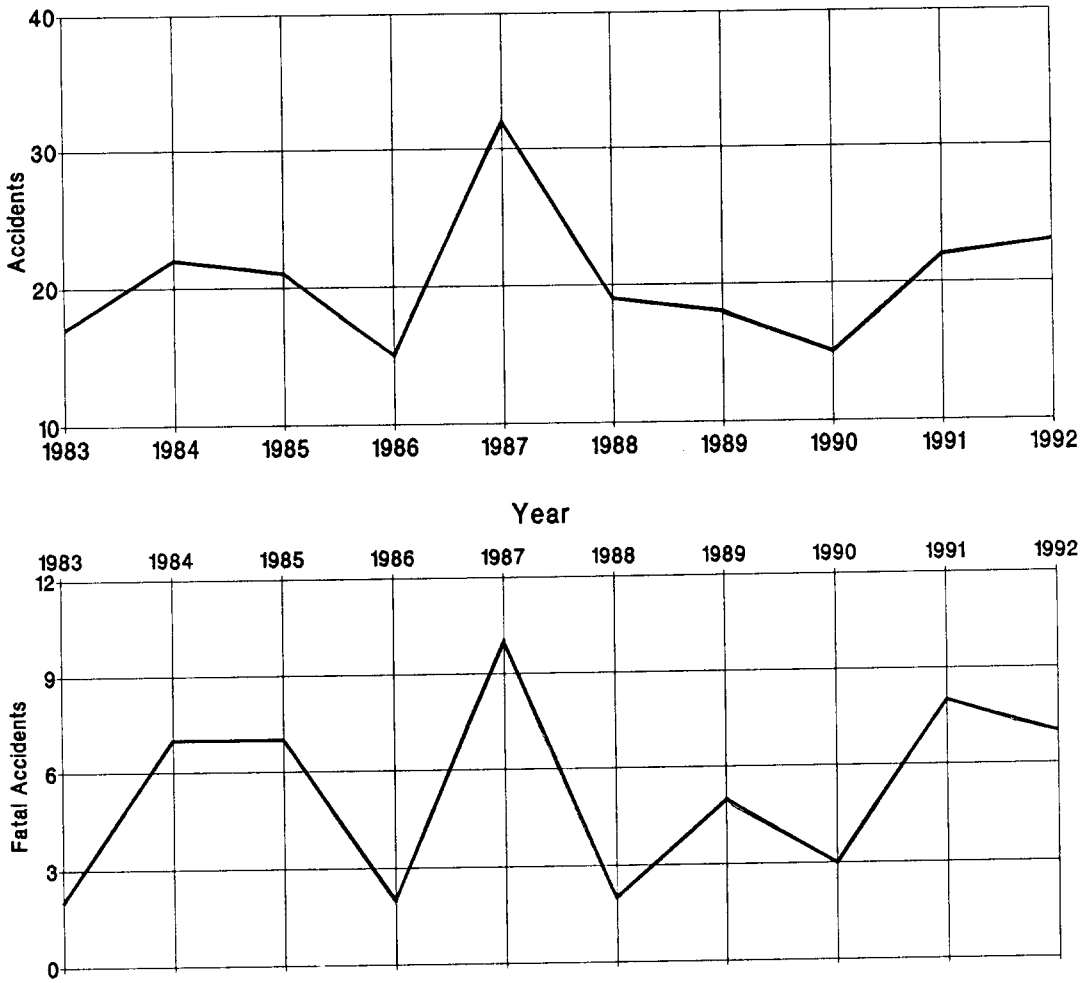

Figure 11 - NUMBER OF FATALITIES
SCHEDULED 14 CFR 135 OPERATIONS

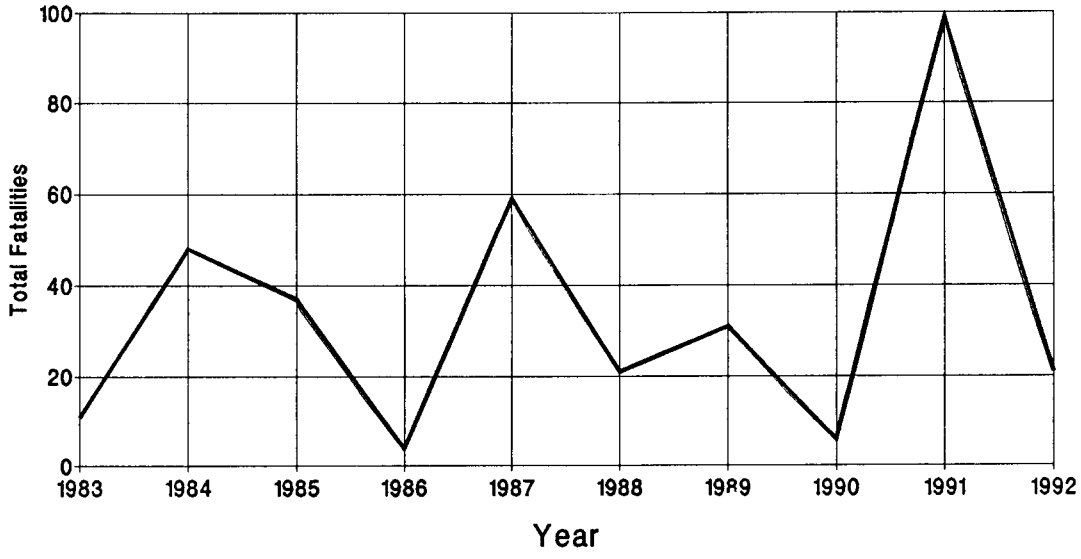

Figure 12 - ACCIDENT RATE PER 100,000 HOURS FLOWN
SCHEDULED 14 CFR 135 OPERATIONS

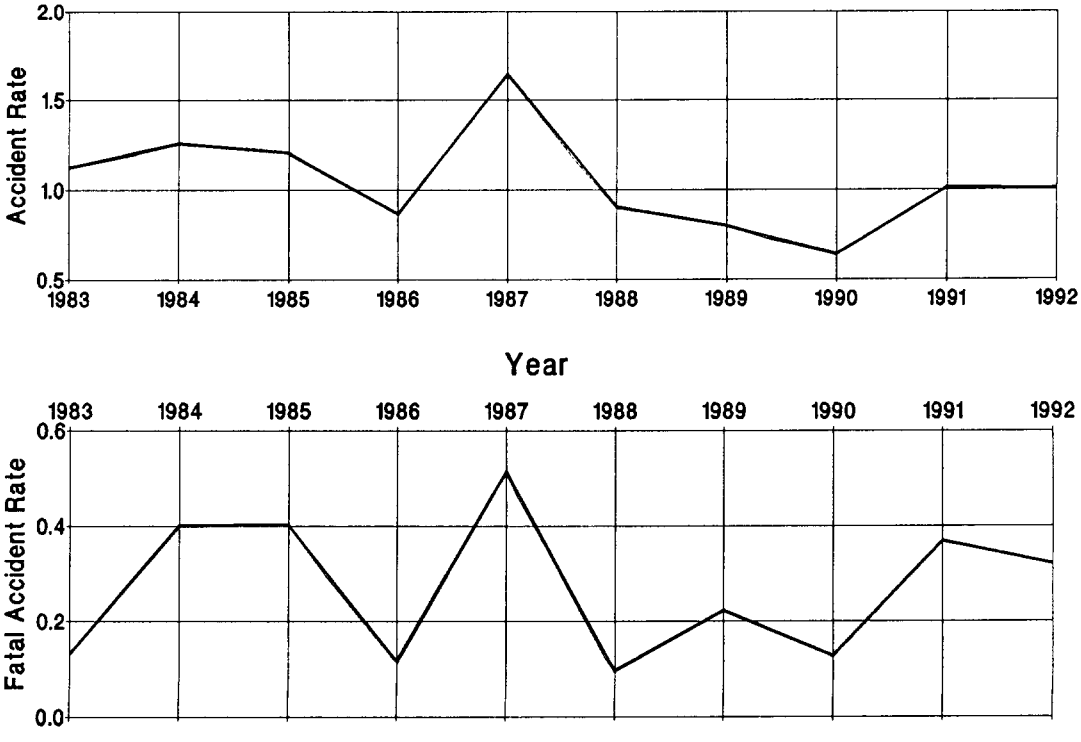

Table 35 - FIRST OCCURRENCES IN ALL ACCIDENTS AND IN FATAL ACCIDENTS
SCHEDULED 14 CFR 135 OPERATIONS
1992 AND 1987 - 1991

Type of Occurrence	All Accidents				Fatal Accidents			
	1992		1987 - 1991		1992		1987 - 1991	
	No.	Percent	Mean	Percent	No.	Percent	Mean	Percent
On ground collision with object	4	17.4	3.6	15.9	0	.0	.2	3.4
Loss of control - in flight	4	17.4	2.8	12.4	1	14.3	1.6	27.6
Airframe/component/system failure/ malfunction	1	4.3	2.0	8.8	0	.0	.4	6.9
In flight collision with terrain	7	30.4	1.6	7.1	4	57.1	1.0	17.2
In flight encounter with weather	3	13.0	1.4	6.2	1	14.3	1.0	17.2
In flight collision with object	0	.0	1.0	4.4	0	.0	.2	3.4
Loss of engine power(total) - non-mechanical	1	4.3	1.0	4.4	0	.0	.2	3.4
Hard landing	0	.0	.8	3.5	0	.0	.0	.0
Loss of control - on ground	0	.0	.8	3.5	0	.0	.0	.0
Midair collision	0	.0	.8	3.5	0	.0	.4	6.9
Loss of engine power(total) - mech failure/malfunction	0	.0	.8	3.5	0	.0	.0	.0
Overrun	0	.0	.6	2.7	0	.0	.0	.0
Loss of engine power(partial) - non-mechanical	0	.0	.6	2.7	0	.0	.0	.0
Undershoot	1	4.3	.6	2.7	0	.0	.0	.0
Gear not extended	1	4.3	.4	1.8	0	.0	.0	.0
On ground collision with terrain	0	.0	.4	1.8	0	.0	.0	.0
Loss of engine power	0	.0	.4	1.8	0	.0	.4	6.9
Loss of engine power(partial) - mech failure/malfunction	0	.0	.4	1.8	0	.0	.2	3.4
Propeller/rotor contact to person	0	.0	.4	1.8	0	.0	.0	.0
Vortex turbulence encountered	1	4.3	.4	1.8	1	14.3	.0	.0
Not reported	0	.0	.2	.9	0	.0	.2	3.4
Dragged wing, rotor, pod, or float	0	.0	.2	.9	0	.0	.0	.0
Explosion	0	.0	.2	.9	0	.0	.0	.0
Main gear collapsed	0	.0	.2	.9	0	.0	.0	.0
Nose gear collapsed	0	.0	.2	.9	0	.0	.0	.0
Complete gear collapsed	0	.0	.2	.9	0	.0	.0	.0
Nose over	0	.0	.2	.9	0	.0	.0	.0
Undetermined	0	.0	.2	.9	0	.0	.0	.0
Miscellaneous/other	0	.0	.2	.9	0	.0	.0	.0
Total	23	100.0	22.6	100.0	7	100.0	5.8	100.0

Table 36 - FIRST PHASES OF OPERATION IN ALL ACCIDENTS AND IN FATAL ACCIDENTS
SCHEDULED 14 CFR 135 OPERATIONS
1992 AND 1987 - 1991

	All Accidents				Fatal Accidents			
	1992		1987 - 1991		1992		1987 - 1991	
Phase of operation	No.	Percent	Mean	Percent	No.	Percent	Mean	Percent
Landing	2	8.7	4.8	21.2	0	.0	.0	.0
Taxi	3	13.0	3.4	15.0	0	.0	.0	.0
Approach	8	34.8	3.2	14.2	4	57.1	1.8	31.0
Cruise	3	13.0	2.6	11.5	1	14.3	1.8	31.0
Takeoff	4	17.4	2.2	9.7	1	14.3	.4	6.9
Standing	1	4.3	1.8	8.0	0	.0	.2	3.4
Descent	2	8.7	1.8	8.0	1	14.3	.2	3.4
Maneuvering	0	.0	1.6	7.1	0	.0	1.0	17.2
Climb	0	.0	.4	1.8	0	.0	.0	.0
Other	0	.0	.4	1.8	0	.0	.0	.0
Not reported	0	.0	.2	.9	0	.0	.2	3.4
Total Aircraft	23	100.0	22.6	100.0	7	100.0	5.8	100.0

Table 37 - BROAD CAUSE/FACTOR ASSIGNMENTS IN ALL ACCIDENTS AND IN FATAL ACCIDENTS
SCHEDULED 14 CFR 135 OPERATIONS
1992 AND 1987 - 1991

	All Accidents				Fatal Accidents			
	1992		1987 - 1991		1992		1987 - 1991	
Broad Cause/Factor	No.	Percent	Mean	Percent	No.	Percent	Mean	Percent
Pilot	18	78.3	15.6	69.0	7	100.0	4.2	72.4
Other Person (Not Aboard)	5	21.7	9.0	39.8	1	14.3	2.2	37.9
Weather	5	21.7	7.0	31.0	2	28.6	2.4	41.4
Terrain/Runway Condition	4	17.4	6.0	26.5	2	28.6	1.8	31.0
Light Conditions	2	8.7	3.8	16.8	1	14.3	.8	13.8
Propulsion System and Controls	1	4.3	3.0	13.3	1	14.3	.8	13.8
Object (tree,wires,etc)	1	4.3	2.2	9.7	0	.0	.2	3.4
Systems/Equipment/ Instruments	2	8.7	1.6	7.1	1	14.3	.4	6.9
Airframe	0	.0	1.2	5.3	0	.0	.2	3.4
Landing Gear	1	4.3	1.2	5.3	0	.0	.0	.0
Airport/Airways Facilities, Aids	1	4.3	1.0	4.4	0	.0	.2	3.4
Flight Control System	1	4.3	.6	2.7	0	.0	.4	6.9
Other Person (Aboard)	0	.0	.4	1.8	0	.0	.0	.0
Total Aircraft	23	100.0	22.6	100.0	7	100.0	5.8	100.0
NTSB Determined Probable Cause	23		22.2		7		5.4	

Nonscheduled 14 CFR 135 Operations

During 1992 there were 76 accidents involving nonscheduled 14 CFR 135 aircraft (air taxis). This is the lowest number of accidents in the ten years covered by this report and represents a decrease of 35.5 percent from the average of 117.8 accidents per year in this category during the period 1983 through 1991. The accident rate for the period 1983 - 1991 was 4.57 accidents per 100,000 hours flown. The 1992 accident rate was 3.78.

There were 24 fatal accidents in this category that were responsible for 70 fatalities in 1992. During the period 1983 through 1991, there was an average of 28.2 fatal accidents and 64.7 fatalities per year. The fatal accident rate for 1992 was 1.19 per 100,000 hours flown.

One of the accidents reported in this section involved a midair collision between two non-scheduled 14 CFR 135 aircraft. Therefore, this section lists 87 accidents involving 88 aircraft.

Table 38 - SUMMARY OF LOSSES
NONSCHEDULED 14 CFR 135 OPERATIONS
1988 - 1992

	1988	1989	1990	1991	1992
Accidents					
Fatal	28	25	28	27	24
Involved Serious Injury	15	13	14	10	5
Involved Minor or No Injury	58	73	64	50	47
Total	101	111	106	87	76
Fatalities					
Passenger	22	46	20	35	43
Crew	33	35	28	31	22
Other Persons	4	2	2	4	3
Total	59	83	50	70	68
Aircraft Damage (Nonscheduled 14 CFR 135)					
Destroyed	37	32	38	31	26
Substantial	62	80	68	53	49
Minor	1	0	1	2	1
None	1	0	1	2	0
Total	101	112	108	88	76

Table 39 - ACCIDENT RATES
NONSCHEDULED 14 CFR 135 OPERATIONS

	1988	1989	1990	1991	1992
Aircraft Hours Flown	2,632,000	3,020,000	2,249,000	2,241,000	2,009,000
Accident Rates *					
All Accidents	3.84	3.68	4.71	3.88	3.78
Fatal Accidents	1.06	0.83	1.24	1.20	1.19

*Per Hundred Thousand Hours Flown

Table 40 - LIST OF ACCIDENTS
NONSCHEDULED 14 CFR 135 OPERATIONS
1992

Date	Location	Type of Operation	Aircraft Type	Aircraft Damage	Degree of Injury	First Occurrence
1/02	Port Walter, AK	Cargo	DeHavilland DHC-2	Substantial	None	In flight collision with terrain
1/06	Atmautluak, AK	Pax and Cargo	Cessna 180	Substantial	None	Loss of control - on ground
1/08	English Bay, AK	Pax and Cargo	Cessna 206	Substantial	None	Loss of control - on ground
1/09	Seattle, WA	Cargo	Cessna 207	Substantial	None	Miscellaneous/other
1/13	Temple Bar, AZ	Passenger	Cessna T210L	Destroyed	Fatal (2)	Loss of power(partial) - mech failure/malfunction
1/17	PUT IN BAY ,OH	Cargo	CESSNA 182-D	Substantial	None	Loss of control - on ground
1/29	E.I. Blk 108, GM	Passenger	Bell 206L-3	Substantial	Minor	In flight collision with terrain
2/13	Glenwood Spring, CO	Passenger	Swearingen SA-26AT	Destroyed	Serious	Loss of power(total) - mech failure/malfunction
2/14	Lanai, HI	Cargo	Beech D-18H	Substantial	None	Hard landing
2/15	South Pelto #1, GM	Pax and Cargo	Bell 206L-3	Destroyed	None	In flight encounter with weather
2/21	Washington, IN	Cargo	Cessna T210M	Substantial	None	Loss of power(total) - mech failure/malfunction
2/24	Unionville, PA	Cargo	Cessna 310K	Destroyed	Fatal (1)	In flight collision with terrain
2/26	Morganton, NC	Cargo	Beech H-18	Destroyed	Fatal (1)	In flight collision with terrain
2/28	Quinhagak, AK	Cargo	Cessna 207A	Substantial	None	Loss of power(total) - non-mechanical
3/05	Freeland, MI	Passenger	Cessna 414	Destroyed	Fatal (3)	Airframe/component/system failure/malfunction
3/07	Qioquinton, VA	Cargo	Piper PA-31-350	Substantial	None	Loss of power
4/09	Venice, LA	Passenger	Bell 206L-3	Destroyed	Fatal (2)	Miscellaneous/other
4/17	Hamburg, PA	Passenger	Piper PA-23-250	Destroyed	Fatal (4)	In flight collision with terrain
4/22	Mount Haleakala, HI	Passenger	Beech E18S	Destroyed	Fatal (9)	In flight encounter with weather
4/22	Shaw Island, WA	Passenger	Cessna 172M	Substantial	Fatal (1)	In flight collision with object

Table 40 - LIST OF ACCIDENTS (Continued)
NONSCHEDULED 14 CFR 135 OPERATIONS
1992

Date	Location	Type of Operation	Aircraft Type	Aircraft Damage	Degree of Injury	First Occurrence
4/27	Houston, TX	Passenger	Piper PA-31-350	Substantial	None	Gear collapsed
4/28	Valdez, AK	Pax and Cargo	Bell B206II	Substantial	Minor	Roll over
5/09	Ruth Glacier, AK	Passenger	Cessna 185	Minor	None	Midair collision
5/24	Kahiltna Glacie, AK	Pax and Cargo	Cessna 185	Substantial	None	Main gear collapsed
5/25	Funter Bay, AK	Passenger	Piper PA-32-300	Substantial	None	In flight encounter with weather
5/30	Volcanoes Ntl P, HI	Passenger	Hughes 369D	Substantial	None	Loss of power(total) - mech failure/malfunction
6/01	Brookeville, MD	Passenger	Cessna R182	Substantial	Fatal (3)	Midair collision
6/01	Cleveland, OH	Pax and Cargo	Cessna 310R	Substantial	None	Main gear collapsed
6/10	Polk Inlet, AK	Passenger	Hughes MD-500D	Substantial	None	Dragged wing, rotor, pod, or float
6/10	Anchorage, AK	Passenger	Cessna 207	Substantial	None	On ground collision with object
6/17	Talkeetna, AK	Passenger	Cessna 185F	Substantial	None	Airframe/component/system failure/malfunction
6/18	Quinhagak, AK	Passenger	Cessna 207	Substantial	None	Loss of power(total) - mech failure/malfunction
6/19	Meadview, AZ	Passenger	Cessna 402C	Destroyed	Fatal (10)	Loss of power
6/19	Waikoloa, HI	Passenger	Bell 206-L3	Substantial	Minor	Roll over
6/20	Sole Lake, AK	Pax and Cargo	Cessna 185	Substantial	None	In flight collision with object
6/28	St. Thomas, VI	Passenger	Piper PA-23-250	Destroyed	Fatal (4)	Fire
7/04	Shelter Cove, CA	Passenger	Cessna 421B	Destroyed	Serious	Overrun
7/04	Barstow, CA	Passenger	Robinson R-22B	Substantial	Minor	Loss of control - in flight
7/13	Bethel, AK	Cargo	Short SC7	Destroyed	Fatal (1)	Loss of control - in flight
7/22	McGrath, AK	Pax and Cargo	DeHavilland DHC-3	Substantial	None	Fire
7/26	Block 651A, GM	Pax and Cargo	Bell 206B3	Destroyed	Fatal (1)	In flight collision with object

Table 40 - LIST OF ACCIDENTS (Continued)
NONSCHEDULED 14 CFR 135 OPERATIONS
1992

Date	Location	Type of Operation	Aircraft Type	Aircraft Damage	Degree of Injury	First Occurrence
7/29	Adjuntas, PR	Passenger	Bell 47J2	Destroyed	Fatal (4)	Miscellaneous/other
7/30	Anaktuvuk Pass, AK	Passenger	Cessna A-185-F	Substantial	None	Overrun
8/04	Holyoke, CO	Passenger	Cessna 402A	Substantial	None	Loss of power
8/08	Nuiqsut, AK	Pax and Cargo	Beech C99	Substantial	None	Undershoot
8/12	Crescent Lake, AK	Passenger	DeHavilland DHC-2	Substantial	Minor	Hard landing
8/14	Oxford, ME	Passenger	Beech D55	Substantial	Serious	Loss of power(total) - non-mechanical
8/16	Ship Shoal 90, GM	Passenger	MBB BO-105CBS-4	Substantial	None	Loss of power(total) - non-mechanical
8/18	Philadelphia, PA	Cargo	Mitsubishi MU-2-60	Substantial	None	Airframe/component/system failure/malfunction
8/19	Amelia, LA	Passenger	Cessna A185F	Substantial	None	Loss of control - on ground
8/29	Yakutat, AK	Passenger	Cessna 185E	Substantial	None	Loss of control - on ground
9/02	Almont, MI	Cargo	Cessna 402B	Substantial	None	Loss of power(total) - mech failure/malfunction
9/11	Eagle, AK	Passenger	Douglas 369D	Destroyed	Fatal (3)	Airframe/component/system failure/malfunction
9/16	Hana, HI	Passenger	Aerospatiale AS-350B	Destroyed	Fatal (7)	In flight collision with terrain
9/21	Orlando, FL	Cargo	Cessna 210L	Substantial	None	Airframe/component/system failure/malfunction
9/21	St. Augustine, FL	Cargo	Cessna 210L	Destroyed	Minor	Loss of power(total) - non-mechanical
9/21	Orlando, FL	Cargo	Cessna 210L	Substantial	None	Airframe/component/system failure/malfunction
9/25	George Inlet, AK	Passenger	Hughes 369D	Substantial	Minor	In flight collision with terrain
9/26	Helena, MT	Passenger	Cessna T210N	Substantial	Minor	Loss of power(total) - non-mechanical

Table 40 - LIST OF ACCIDENTS (Continued)
NONSCHEDULED 14 CFR 135 OPERATIONS
1992

Date	Location	Type of Operation	Aircraft Type	Aircraft Damage	Degree of Injury	First Occurrence
9/29	Petersburg, AK	Pax and Cargo	Cessna 185	Destroyed	None	In flight encounter with weather
11/06	Montague Island, AK	Pax and Cargo	Cessna 207	Destroyed	Fatal (2)	In flight collision with terrain
11/09	Boise, ID	Cargo	Cessna T210R	Destroyed	Fatal (1)	In flight collision with object
11/11	Ekwok, AK	Pax and Cargo	Cessna 207	Substantial	Serious	Loss of control - in flight
11/19	Tehachapi, CA	Cargo	Cessna 172N	Destroyed	Fatal (2)	In flight collision with terrain
11/19	Elk City, ID	Passenger	Cessna T207A	Substantial	Fatal (3)	In flight collision with terrain
11/22	Cleveland, OH	Pax and Cargo	Lear 25B	Substantial	None	Overrun
11/23	McCook, NE	Cargo	Aero Commander 500-B	Substantial	Serious	In flight encounter with weather
11/25	West Columbia, SC	Cargo	Beech 58	Destroyed	Fatal (1)	In flight collision with terrain
11/27	Rice Lake, WI	Cargo	Cessna 401B	Substantial	None	Main gear collapsed
12/04	Scammon Bay, AK	Passenger	Piper PA-32-301	Substantial	None	In flight collision with terrain
12/04	Kamuela, HI	Passenger	Hughes 369C	Substantial	Minor	Loss of power(total) - mech failure/malfunction
12/10	Elkridge, MD	Cargo	Beech C-45G	Destroyed	Fatal (1)	Cargo shift
12/21	Hilo, HI	Passenger	Hughes 369D	Substantial	None	Loss of power(total) - mech failure/malfunction
12/22	Golden, CO	Cargo	Rockwell Int'l 690C	Destroyed	Fatal (1)	In flight encounter with weather
12/25	Lester, WA	Mail Only	Aero Commander 680FL	Destroyed	Fatal (1)	Loss of control - in flight
12/29	Billings, MT	Cargo	Aero Commander 500-B	Substantial	None	Loss of power

Table 41 - PERSONS BY ROLE AND DEGREE OF INJURY
NONSCHEDULED 14 CFR 135 OPERATIONS
1992

Role of Person	Degree of Injury: Fatal	Serious	Minor	None	Total
Pilot	21	6	4	45	76
Copilot	0	0	0	3	3
Other crew	1	0	0	0	1
Passenger	43	13	17	80	153
Total aboard	65	19	21	128	233
Other aircraft*	3	0	0	5	8
Grand total	68	19	21	133	241
Percent	28.2	7.9	8.7	55.2	

* 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
1992

Aircraft damage	Degree of injury: None	Minor	Ser	Fatal	Aircraft: No.	Percent
Minor	1	0	0	0	1	1.3
Substantial	35	8	3	3	49	64.5
Destroyed	2	1	2	21	26	34.2
Aircraft Number -	38	9	5	24	76	
Percent -	50.0	11.8	6.6	31.6		

Table 43 - AIRCRAFT BY FIRST OCCURRENCE AND DEGREE OF INJURY AND BY DAMAGE
NONSCHEDULED14 CFR 135 OPERATIONS
1992

Type of first occurrence	Degree of injury				Aircraft damage				Aircraft	
	None	Minor	Ser	Fatal	None	Minor	Subs	Dest	No.	Percent
Cargo shift	0	0	0	1	0	0	0	1	1	1.3
Airframe/component/system failure/malfunction	4	0	0	2	0	0	4	2	6	7.9
Dragged wing,rotor,pod,or float	1	0	0	0	0	0	1	0	1	1.3
Fire	1	0	0	1	0	0	1	1	2	2.6
Gear collapsed	1	0	0	0	0	0	1	0	1	1.3
Main gear collapsed	3	0	0	0	0	0	3	0	3	3.9
Hard landing	1	1	0	0	0	0	2	0	2	2.6
In flight collision with object	1	0	0	3	0	0	2	2	4	5.3
In flight collision with terrain	2	2	0	8	0	0	5	7	12	15.8
In flight encounter with weather	3	0	1	2	0	0	2	4	6	7.9
Loss of control - in flight	0	1	1	2	0	0	2	2	4	5.3
Loss of control - on ground	5	0	0	0	0	0	5	0	5	6.6
Midair collision	1	0	0	1	0	1	1	0	2	2.6
On ground collision with object	1	0	0	0	0	0	1	0	1	1.3
Overrun	2	0	1	0	0	0	2	1	3	3.9
Loss of power	3	0	0	1	0	0	3	1	4	5.3
Loss of power(total) - mech failure/malfunction	5	1	1	0	0	0	6	1	7	9.2
Loss of power(partial) - mech failure/malfunction	0	0	0	1	0	0	0	1	1	1.3
Loss of power(total) - non-mechanical	2	2	1	0	0	0	4	1	5	6.6
Roll over	0	2	0	0	0	0	2	0	2	2.6
Undershoot	1	0	0	0	0	0	1	0	1	1.3
Miscellaneous/other	1	0	0	2	0	0	1	2	3	3.9
Aircraft										
Number -	38	9	5	24	0	1	49	26	76	
Percent -	50.0	11.8	6.6	31.6	.0	1.3	64.5	34.2		

Table 44 - AIRCRAFT BY FIRST OCCURRENCE AND BROAD PHASE OF OPERATION
NONSCHEDULED 14 CFR 135 OPERATIONS
1992

Type of first occurrence	Phase of operation										Aircraft	
	Stndg	Taxi	Tkoff	Climb	Cruis	Dscnt	Aprch	Landg	Manvr	Hover	No.	Percent
Cargo shift	0	0	0	0	0	0	1	0	0	0	1	1.3
Airframe/component/system failure/malfunction	1	0	0	0	1	0	3	1	0	0	6	7.9
Dragged wing, rotor, pod, or float	1	0	0	0	0	0	0	0	0	0	1	1.3
Fire	0	0	0	1	1	0	0	0	0	0	2	2.6
Gear collapsed	0	0	0	0	0		0	1	0	0	1	1.3
Main gear collapsed	0	1	1	0	0	0	0	1	0	0	3	3.9
Hard landing	0	0	0	0	0	0	0	2	0	0	2	2.6
In flight collision w/object	0	0	0	0	0	0	2	2	0	0	4	5.3
In flight collision w/terrain	0	0	1	0	3	0	5	0	3	0	12	15.8
In flight encounter w/weather	0	0	1	1	2	1	0	0	1	0	6	7.9
Loss of control - in flight	0	0	1	1	0	0	0	0	2	0	4	5.3
Loss of control - on ground	0	0	1	0	0	0	0	4	0	0	5	6.6
Midair collision	0	0	0	0	2	0	0	0	0	0	2	2.6
On ground collision w/object	0	1	0	0	0	0	0	0	0	0	1	1.3
Overrun	0	0	2	0	0	0	0	1	0	0	3	3.9
Loss of power	0	0	3	0	1	0	0	0	0	0	4	5.3
Loss of power(total) - mech failure/malfunction	0	0	1	0	5	0	1	0	0	0	7	9.2
Loss of power(partial) - mech failure/malfunction	0	0	0	0	1	0	0	0	0	0	1	1.3
Loss of power(total) - non-mechanical	0	0	1	0	3	0	1	0	0	0	5	6.6
Roll over	1	0	0	0	0	0	0	0	0	1	2	2.6
Undershoot	0	0	0	0	0	0	1	0	0	0	1	1.3
Miscellaneous/other	0	0	0	0	2	1	0	0	0	0	3	3.9
Aircraft												
Number -	3	2	12	3	21	2	14	12	6	1	76	
Percent -	3.9	2.6	15.8	3.9	27.6	2.6	18.4	15.8	7.9	1.3		

Table 45 - AIRCRAFT BY PHASE OF OPERATION AND DEGREE OF INJURY AND BY DAMAGE
NONSCHEDULED 14 CFR 135 OPERATIONS
1992

Phase of operation	Degree of injury				Aircraft damage				Aircraft	
	None	Minor	Ser	Fatal	None	Minor	Subs	Dest	No.	Percent
Standing	0	0	0	1	0	0	0	1	1	1.3
Standing - idling rotors	1	1	0	0	0	0	2	0	2	2.6
Taxi - to takeoff	2	0	0	0	0	0	2	0	2	2.6
Takeoff - ground run	3	0	1	0	0	0	3	1	4	5.3
Takeoff - initial climb	5	0	1	2	0	0	5	3	8	10.5
Climb - to cruise	0	0	1	2	0	0	1	2	3	3.9
Cruise	2	1	0	6	0	0	3	6	9	11.8
Cruise - normal	8	1	1	2	0	1	7	4	12	15.8
Descent	1	0	0	0	0	0	1	0	1	1.3
Descent - normal	0	0	0	1	0	0	0	1	1	1.3
Approach	2	1	0	2	0	0	3	2	5	6.6
Approach - VFR pattern - downwind	1	0	0	0	0	0	1	0	1	1.3
Approach - VFR pattern - final approach	1	1	0	0	0	0	2	0	2	2.6
Approach - go-around (VFR)	0	0	0	1	0	0	1	0	1	1.3
Approach - FAF/outer marker to threshold (IFR)	0	0	0	1	0	0	0	1	1	1.3
Approach - circling(IFR)	0	0	0	1	0	0	0	1	1	1.3
Approach - missed approach (IFR)	0	0	0	3	0	0	0	3	3	3.9
Landing - flare/touchdown	3	1	0	1	0	0	4	1	5	6.6
Landing - roll	7	0	0	0	0	0	7	0	7	9.2
Maneuvering	1	1	1	1	0	0	4	0	4	5.3
Maneuvering - turn to reverse direction	1	1	0	0	0	0	2	0	2	2.6
Hover	0	1	0	0	0	0	1	0	1	1.3
Aircraft										
Number -	38	9	5	24	0	1	49	26	76	
Percent -	50.0	11.8	6.6	31.6	.0	1.3	64.5	34.2		

Table 46 - AIRCRAFT BY CONDITION OF LIGHT AND TYPE OF WEATHER
NONSCHEDULED 14 CFR 135 OPERATIONS
1992

Condition of light	Type of weather			Aircraft	
	VMC	IMC	Not reptd	No.	Percent
Dawn	1	1	0	2	2.6
Daylight	44	13	0	57	75.0
Night (dark)	5	6	2	13	17.1
Night (bright)	3	0	0	3	3.9
Dusk	1	0	0	1	1.3
Aircraft					
Number -	54	20	2	76	
Percent -	71.1	26.3	2.6		

Table 47 - AIRCRAFT BY TYPE OF OPERATION AND DEGREE OF INJURY
NONSCHEDULED 14 CFR 135 OPERATIONS
1992

Type of Operation	Degree of Injury				Aircraft	
	None	Minor	Serious	Fatal	No.	Percent
Domestic Passenger	15	7	3	13	38	50.0
Domestic Cargo	13	1	1	8	23	30.3
Domestic Pass/Cargo	10	1	1	2	14	18.4
Domestic Mail Contact	0	0	0	1	1	1.3
Aircraft						
Number -	38	9	5	24	76	
Percent -	50.0	11.8	6.6	31.6		

Table 48 - AIRCRAFT BY PROXIMITY TO AIRPORT AND FLIGHT PLAN
NONSCHEDULED 14 CFR 135 OPERATIONS
1992

Accident location	Flight plan				Aircraft	
	None	VFR	IFR	Cmpny VFR	No.	Percent
Off airport/airstrip	9	10	10	18	47	61.8
On airport	3	5	8	10	26	34.2
On airstrip	0	1	0	2	3	3.9
Aircraft						
Number -	12	16	18	30	76	
Percent -	15.8	21.1	23.7	39.5		

Table 49 - AIRCRAFT BY OCCURRENCE OF FIRE AND DEGREE OF INJURY AND BY DAMAGE
NONSCHEDULED 14 CFR 135 OPERATIONS
1992

Aircraft fire	Degree of injury				Aircraft damage				Aircraft	
	None	Minor	Ser	Fatal	None	Minor	Subs	Dest	No.	Percent
None	37	9	5	12	0	1	48	14	63	82.9
Inflight	0	0	0	1	0	0	0	1	1	1.3
On ground	0	0	0	11	0	0	0	11	11	14.5
Inflight and on ground	1	0	0	0	0	0	1	0	1	1.3
Aircraft										
Number -	38	9	5	24	0	1	49	26	76	
Percent -	50.0	11.8	6.6	31.6	.0	1.3	64.5	34.2		

Table 50 - AIRCRAFT BY TYPE OF AIRCRAFT AND DEGREE OF INJURY AND BY DAMAGE
NONSCHEDULED 14 CFR 135 OPERATIONS
1992

Type of aircraft	Degree of injury				Aircraft damage				Aircraft	
	None	Minor	Ser	Fatal	None	Minor	Subs	Dest	No.	Percent
All Fixed Wing *	33	3	5	19	0	1	39	20	60	78.9
Fixed Wing Single Recip. Eng.	22	3	1	7	0	1	26	6	33	43.4
Fixed Wing Multiple Recip. Eng.	8	0	3	9	0	0	10	10	20	26.3
Fixed Wing Turboprop	2	0	1	3	0	0	2	4	6	7.9
Fixed Wing Turbojet	1	0	0	0	0	0	1	0	1	1.3
All Rotorcraft *	5	6	0	5	0	0	10	6	16	21.1
Rotorcraft, Recip. Engine	0	1	0	1	0	0	1	1	2	2.6
Rotorcraft, Turbine Engine	5	5	0	4	0	0	9	5	14	18.4
Aircraft										
Number -	38	9	5	24	0	1	49	26	76	
Percent -	50.0	11.8	6.6	31.6	.0	1.3	64.5	34.2		

* Not included in column totals

Table 51 - BROAD CAUSE/FACTOR ASSIGNMENTS*
NONSCHEDULED 14 CFR 135 OPERATIONS
1992

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 #	**4**	**26**	**4**	**12**	**6**	**33**
Propulsion System and Controls	3	15	2	6	5	19
Flight Control System	1	1	0	0	1	1
Airframe	0	1	1	2	1	3
Landing Gear	0	6	0	1	0	7
Systems/Equipment/ Instruments	0	4	1	5	1	9
Environment #	**0**	**1**	**11**	**38**	**11**	**39**
Weather	0	1	10	25	10	26
Light Conditions	0	0	3	7	3	7
Object(trees,wires,etc.)	0	0	2	4	2	4
Terrain/Runway Condition	0	0	6	20	6	20
Personnel #	**22**	**60**	**12**	**24**	**22**	**63**
Pilot	20	54	9	18	20	55
Others (Not Aboard)	3	10	5	9	7	16
Number of Aircraft					24	76
NTSB Determined Probable Cause					23	75

---

* 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
1983 - 1992

Year	Accidents	Fatal Accidents	Fatalities		Accident Rate per 100,000* Aircraft Hours Flown		
			Total	Aboard Aircraft In This Category	Hours Flown	Total	Fatal
1983	141	27	62	57	2,378,000	5.929	1.135
1984	146	23	52	52	2,843,000	5.135	0.809
1985	154	35	76	75	2,570,000	5.992	1.362
1986	117	31	65	61	2,690,000	4.349	1.152
1987	97	30	65	63	2,657,000	3.651	1.129
1988	101	28	59	55	2,632,000	3.837	1.064
1989	111	25	83	81	3,020,000	3.675	0.828
1990	106	28	50	48	2,249,000	4.713	1.245
1991	87	27	70	66	2,241,000	3.882	1.205
1992	76	24	70	67	2,009,000	3.783	1.195

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

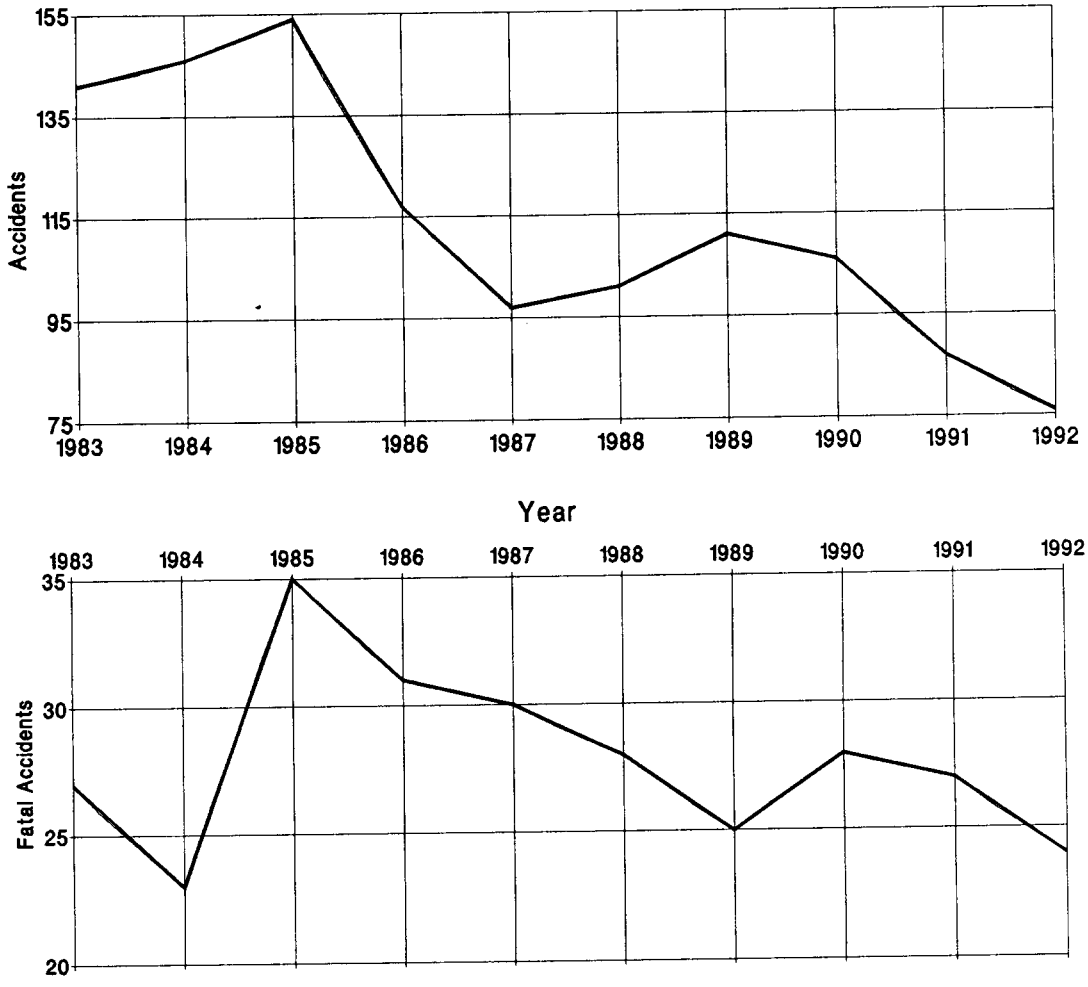

Figure 14 - NUMBER OF FATALITIES
NONSCHEDULED 14 CFR 135 OPERATIONS

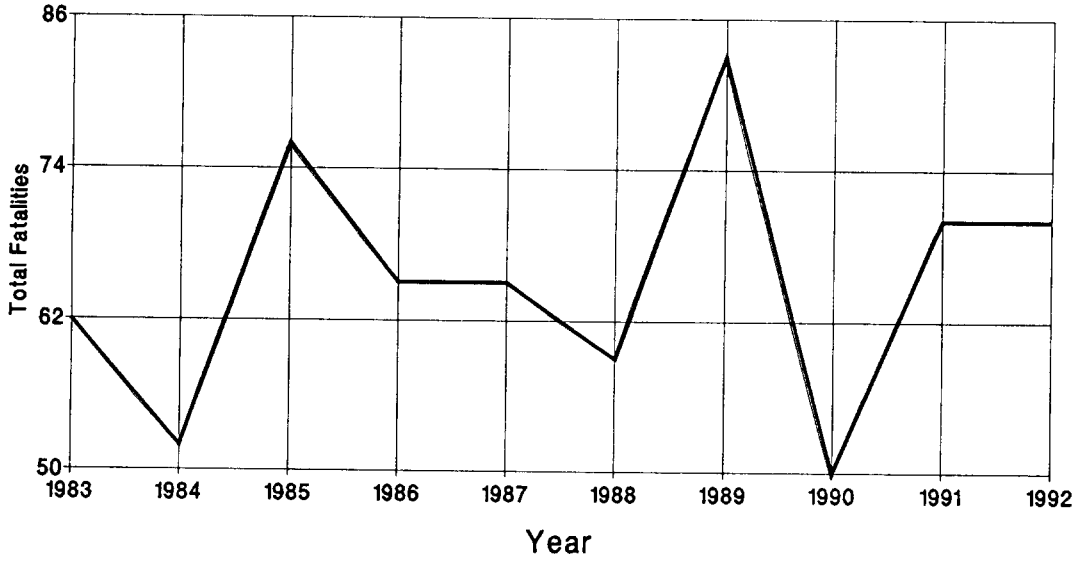

Figure 15 - ACCIDENT RATE PER 100,000 HOURS FLOWN
NONSCHEDULED 14 CFR 135 OPERATIONS

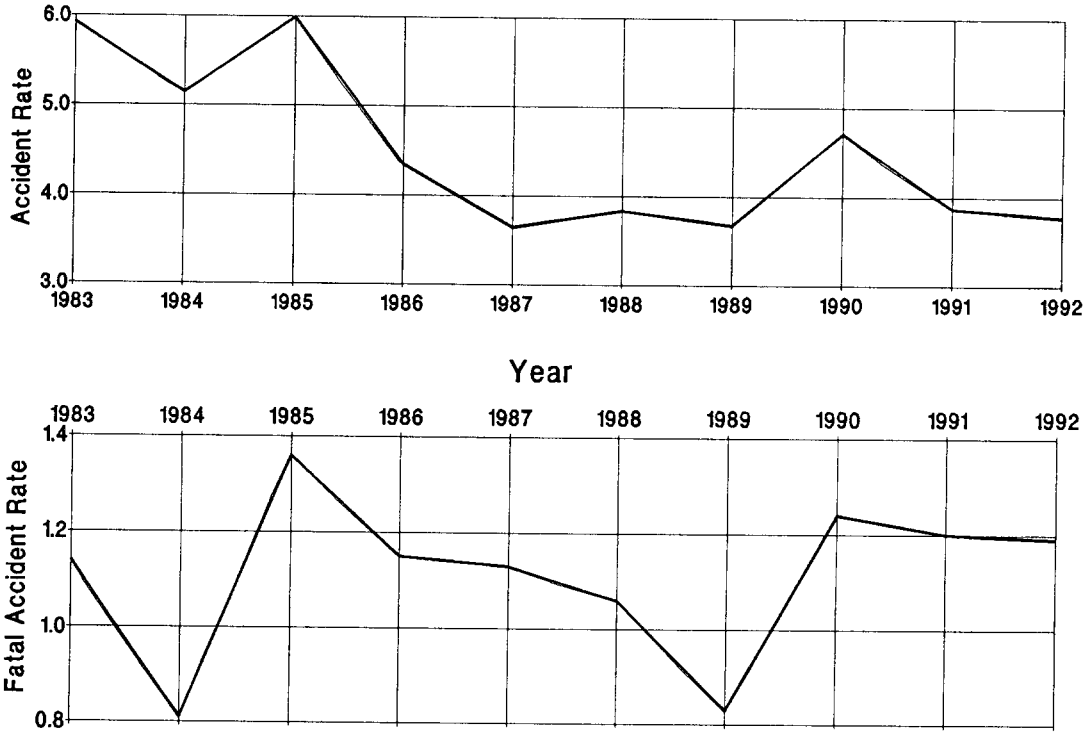

Table 53 - FIRST OCCURRENCES IN ALL ACCIDENTS AND IN FATAL ACCIDENTS
NONSCHEDULED 14 CFR 135 OPERATIONS
1992 AND 1987 - 1991

Type of Occurrence	All Accidents				Fatal Accidents			
	1992		1987 - 1991		1992		1987 - 1991	
	No.	Percent	Mean	Percent	No.	Percent	Mean	Percent
Loss of control - in flight	4	5.3	10.6	10.5	2	8.3	6.0	21.6
Loss of control - on ground	5	6.6	9.4	9.3	0	.0	.0	.0
In flight collision with terrain	12	15.8	8.8	8.7	8	33.3	5.6	20.1
Airframe/component/system failure/ malfunction	6	7.9	8.6	8.5	2	8.3	3.0	10.8
Loss of engine power(total) - mech failure/malfunction	7	9.2	8.6	8.5	0	.0	1.8	6.5
In flight encounter with weather	6	7.9	7.2	7.1	2	8.3	3.8	13.7
Loss of engine power(total) - non-mechanical	5	6.6	5.8	5.7	0	.0	.8	2.9
On ground collision with object	1	1.3	5.6	5.5	0	.0	.0	.0
In flight collision with object	4	5.3	5.4	5.3	3	12.5	2.0	7.2
Loss of engine power	4	5.3	4.2	4.2	1	4.2	.8	2.9
On ground collision with terrain	0	.0	3.0	3.0	0	.0	.0	.0
Overrun	3	3.9	2.8	2.8	0	.0	.0	.0
Loss of engine power(partial) - mech failure/malfunction	1	1.3	2.6	2.6	1	4.2	.4	1.4
Midair collision	2	2.6	2.2	2.2	1	4.2	1.4	5.0
Hard landing	2	2.6	2.0	2.0	0	.0	.0	.0
Not reported	0	0.0	1.4	1.4	0	.0	.0	.0
Main gear collapsed	3	3.9	1.4	1.4	0	.0	.0	.0
Fire	2	2.6	1.2	1.2	1	4.2	.8	2.9
Gear not extended	0	.0	1.2	1.2	0	.0	.0	.0
Altitude deviation,uncontrolled	0	.0	1.0	1.0	0	.0	.2	.7
Loss of engine power(partial) - non-mechanical	0	.0	1.0	1.0	0	.0	.2	.7
Roll over	2	2.6	1.0	1.0	0	.0	.0	.0
Undershoot	1	1.3	1.0	1.0	0	.0	.0	.0
Miscellaneous/other	3	3.9	1.0	1.0	2	8.3	.4	1.4
Nose gear collapsed	0	.0	.8	.8	0	.0	.0	.0
Abrupt maneuver	0	.0	.6	.6	0	.0	.4	1.4
Nose over	0	.0	.6	.6	0	.0	.0	.0
Propeller/rotor contact to person	0	.0	.6	.6	0	.0	.0	.0
Fire/explosion	0	.0	.4	.4	0	.0	.0	.0
Gear collapsed	1	1.3	.4	.4	0	.0	.0	.0
Explosion	0	.0	.2	.2	0	.0	.0	.0
Forced landing	0	.0	.2	.2	0	.0	.0	.0
Gear not retracted	0	.0	.2	.2	0	.0	.0	.0
Propeller blast or jet exhaust	0	.0	.2	.2	0	.0	.0	.0
Cargo shift	1	1.3	.0	.0	1	4.2	.0	.0
Dragged wing, rotor, pod, or float	1	1.3	.0	.0	0	.0	.0	.0
Total	76	100.0	101.2	100.0	24	100.0	27.8	100.0

Table 54 - FIRST PHASES OF OPERATION IN ALL ACCIDENTS AND IN FATAL ACCIDENTS
NONSCHEDULED 14 CFR 135 OPERATIONS
1992 AND 1987 - 1991

	All Accidents				Fatal Accidents			
	1992		1987 - 1991		1992		1987 - 1991	
Phase of operation	No.	Percent	Mean	Percent	No.	Percent	Mean	Percent
Takeoff	12	15.8	22.0	21.7	2	8.3	5.2	18.7
Cruise	21	27.6	20.8	20.6	8	33.3	8.4	30.2
Landing	12	15.8	19.4	19.2	1	4.2	.8	2.9
Approach	14	18.4	14.4	14.2	8	33.3	6.0	21.6
Maneuvering	7	9.2	8.4	8.3	1	4.2	3.8	13.7
Taxi	2	2.6	4.8	4.7	0	.0	.0	.0
Climb	3	3.9	4.0	4.0	2	8.3	1.4	5.0
Descent	2	2.6	3.4	3.4	1	4.2	1.4	5.0
Standing	3	3.9	2.4	2.4	1	4.2	.6	2.2
Not reported	0	.0	1.4	1.4	0	.0	.0	.0
Total Aircraft	76	100.0	101.2	100.0	24	100.0	27.8	100.0

Table 55 - BROAD CAUSE/FACTOR ASSIGNMENTS IN ALL ACCIDENTS AND IN FATAL ACCIDENTS
NONSCHEDULED 14 CFR 135 OPERATIONS
1992 AND 1987 - 1991

	All Accidents				Fatal Accidents			
	1992		1987 - 1991		1992		1987 - 1991	
Broad Cause/Factor	No.	Percent	Mean	Percent	No.	Percent	Mean	Percent
Pilot	55	72.4	74.8	73.9	20	83.3	22.8	82.0
Weather	26	34.2	31.2	30.8	10	41.7	12.4	44.6
Terrain/Runway Condition	20	26.3	31.0	30.6	6	25.0	7.0	25.2
Propulsion System and Controls	19	25.0	22.0	21.7	5	20.8	4.8	17.3
Other Person (Not Aboard)	16	21.1	18.6	18.4	7	29.2	6.8	24.5
Light Conditions	7	9.2	14.4	14.2	3	12.5	6.6	23.7
Object (tree,wires,etc)	4	5.3	11.8	11.7	2	8.3	3.4	12.2
Systems/Equipment/ Instruments	9	11.8	7.8	7.7	1	4.2	2.0	7.2
Landing Gear	7	9.2	6.2	6.1	0	.0	.0	.0
Airframe	3	3.9	4.0	4.0	1	4.2	1.2	4.3
Flight Control System	1	1.3	2.2	2.2	1	4.2	1.0	3.6
Airport/Airways Facilities, Aids	0	.0	1.6	1.6	0	.0	.0	.0
Other Person (Aboard)	0	.0	.6	.6	0	.0	.4	1.4
Total Aircraft	76	100.0	101.2	100.0	24	100.0	27.8	100.0
NTSB Determined Probable Cause	75		99.4		23		27.8	

BY THE NATIONAL TRANSPORTATION SAFETY BOARD

/s/ JIM HALL
Acting Chairman

/s/ JOHN K. LAUBER
Member

/s/ JOHN HAMMERSCHMIDT
Member

/s/ CARL W. VOGT
Member

APPENDIX A
MIDAIR COLLISION ACCIDENTS
U.S. AIR CARRIER OPERATIONS
1983 - 1992

Year	Accidents		Total Fatalities	Number of Accidents by Segements of Aviation Involved		
	Total	Fatal		S135 and GA	N135 and N135	N135 and GA
1983	1	1	4	0	0	1
1984	1	1	17	1	0	0
1985	2	1	1	0	2	0
1986	0	0	0	0	0	0
1987	5	2	12	3	0	2
1988	2	1	4	0	0	2
1989	1	1	2	0	0	1
1990	3	2	5	1	1	1
1991	2	2	9	0	1	1
1992	2	1	3	0	0	2
	19	12	57	5	4	10

NOTE: S135 = Scheduled 14 CFR 135 Operation
N135 = Nonscheduled 14 CFR 135 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:

(1) Substantial damage means damage or failure which adversely affects the structural strength, performance, or flight characteristics of the aircraft, and would normally require major repair or replacement of the affected component.

(2) Engine failure, damage limited to an engine, bent fairings or cowling, dented skin, small punctured holes in the skin or fabric, ground damage to rotor or propeller blades, 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.

ROTORCRAFT (BROAD CAUSE/FACTOR): When any part, assembly, or system which is unique to rotorcraft is cited as a cause or factor, then "Rotorcraft" is considered a broad cause or factor in that accident.

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: "Occurrences" is the highest level of an accident classification mechanism known as the Sequence of Events. This concept was introduced in 1982 accident investigations to describe the circumstances in an accident. To describe an accident, up to five occurrences may be used. Typically each occurrence is further defined by one or more "findings" which, when presented chronologically, depict the accident scenario from beginning to end in considerable detail.
The findings are developed by NTSB analysts from a menu of words and phrases, and are the most detailed means of classifying an accident. The findings are also the vehicle 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: The types of weather conditions (VMC/IMC) are determined in accordance with the prescribed minima in Part 91 of the Federal Aviation Regulations. These minima pertain to the ceiling and visibility, in conjunction with the type of airspace, at the accident site. Type of weather conditions is based on surface weather as determined from officially recognized sources. Weather conditions encountered in flight are not necessarily representative of the flight plan classifications VFR/IFR as carried under Type of Weather Conditions.

APPENDIX C

DETAILED CAUSE/FACTOR ASSIGNMENTS
14 CFR 121 OPERATIONS

CAUSE/FACTOR TABLE
14 CFR 121 OPERATIONS
1992

	Cause or Factor	Cause
AIRCRAFT		
Electrical system	1	1
Flight/nav instruments,attitude director ind(ADI)	1	0
Landing gear,tire	1	1
Landing gear,wheel	1	1
Misc eqpt/furnishings	1	0
Stall warning system	1	1
Wing	1	0
ENVIRONMENT		
Gusts	1	1
Icing conditions	1	0
Turbulence in clouds	2	1
Turbulence(thunderstorms)	1	1
Turbulence,clear air	1	1
FLIGHT CREW		
Aircraft control	1	1
Crew/group coordination	4	3
Generator	1	0
Ice/frost removal from aircraft	1	1
Instructions,written/verbal	1	1
Procedures/directives	1	0
Spatial disorientation	1	0
OTHER PERSON		
Aircraft/equipment inadequate	1	0
Aircraft/equipment, inadequate design	1	1
Clearance	1	1
Equipment, other	1	0
Evacuation	1	0
Inadequate training	1	1
Information insufficient	1	1
Installation	1	1
Maintenance,AAIP/progressive program	1	1
Maintenance,replacement	1	1
Procedures/directives	5	4
Visual lookout	1	1
Visual/aural perception	1	0

APPENDIX D

DETAILED CAUSE/FACTOR ASSIGNMENTS
SCHEDULED 14 CFR 135 OPERATIONS

CAUSE/FACTOR TABLE
SCHEDULED 14 CFR 135 OPERATIONS
1992

	Cause or Factor	Cause
AIRCRAFT		
Comm/nav equipment,glide slope receiver	1	0
Fire extinguisher,portable	1	0
Flt control syst,elevator tab control(trim)	1	1
Landing gear,normal retraction/extension assembly	1	1
Throttle/power lever	1	1
FACILITY		
Airport facilities,ramp facilities	1	0
Airport facilities,runway/landing area condition	1	0
ENVIRONMENT		
Clouds	3	0
Crosswind	1	0
Dark night	1	0
Fog	1	0
Night	1	0
Snow	2	0
Static discharge	1	0
Terrain condition	4	1
Turbulence	1	0
Vehicle	1	0
Whiteout	1	0
FLIGHT CREW		
Aborted takeoff	1	1
Aircraft control	3	2
Aircraft weight and balance	1	1
Airspeed(Vs)	1	1
Altitude	2	1
Became lost/disoriented	1	1
Clearance	2	2
Compensation for wind conditions	1	1
Diverted attention	1	0
Flight into known adverse weather	1	1
IFR procedure	3	3
Ice/frost removal from aircraft	1	1
In-flight planning/decision	1	1
Inattentive	1	0
Minimum descent altitude	1	0
Monitoring	1	1
Powerplant controls	1	1
Preflight planning/preparation	1	1
Procedures/directives	1	1
Proper altitude	1	1
Proper glidepath	1	1
Proper touchdown point	1	1
Remedial action	1	0
VFR flight into IMC	2	2
Visual lookout	4	4
Wake turbulence	1	1
Wind information	1	1
OTHER PERSON		
Clearance	1	1
Inadequate training	1	1
Information insufficient	1	0
Maintenance,lubrication	1	0
Proper assistance	1	0
Psychological condition	1	1
Suicide	1	1
Visual lookout	1	1

APPENDIX E

DETAILED CAUSE/FACTOR ASSIGNMENTS
NONSCHEDULED 14 CFR 135 OPERATIONS

CAUSE/FACTOR TABLE
NONSCHEDULED 14 CFR 135 OPERATIONS
1992

	Cause or Factor	Cause
AIRCRAFT		
1 engine	3	1
Accessory drive assy	1	1
Aircraft performance	1	1
Door,cargo	1	1
Electrical system	1	0
Engine assembly,bearing	1	1
Engine assembly,crankshaft	1	1
Engine instruments,egt/tot gage	1	0
Exhaust system,turbocharger	1	1
Flt control syst, elevator control cable/rod	1	1
Fluid,fuel	7	5
Fluid,hydraulic	2	2
Fluid,oil	3	3
Fuel system,drain	1	1
Fuel system,filter	1	0
Fuel system,fuel control	2	1
Fuel system,pump	1	0
Fuselage	1	0
Hydraulic system,seal	1	1
Landing gear	1	1
Landing gear,emergency extension assembly	1	1
Landing gear,gear switch	1	1
Landing gear,main gear strut	1	1
Landing gear,normal retraction/extension assembly	2	2
Landing gear,ski assembly	1	1
Landing gear,skid assembly	1	1
Landing gear,tailwheel	1	0
Lubricating system,oil filler cap	1	1
Lubricating system,oil filter/screen	1	0
Propeller system/accessories,blade	1	1
Rotor drive system,tail rotor drive shaft	1	1
Rotor system,main rotor blade	1	1
Turbine assembly,shaft bearing	1	1
Turbine assembly,shroud	1	1
Turboshaft engine,free (power) turbine	1	0
Turboshaft engine,gas generator turbine	1	0
Wing	1	0
FACILITY		
Aircraft manuals,procedure information	1	0
Airport facilities,runway/landing area condition	1	0
ENVIRONMENT		
Aircraft moving on ground	1	0
Clouds	1	0
Crosswind	2	0
Dark night	5	0
Dawn	2	0
Downdraft	1	0
Drizzle	1	0
Fence	1	0
Fog	9	0
Gusts	2	0
High density altitude	1	0
Icing conditions	2	0
Low ceiling	4	0
Obscuration	4	0
Snow	2	0
Tailwind	2	0
Terrain condition	19	0
Thunderstorm	1	0
Tree(s)	1	0
Turbulence,clear air	1	0

CAUSE/FACTOR TABLE
NONSCHEDULED 14 CFR 135 OPERATIONS
1992

	Cause or Factor	Cause
ENVIRONMENT (continued)		
Unfavorable wind	2	0
Whiteout	2	0
Windshear	1	1
FLIGHT CREW		
Aircraft control	2	2
Aircraft preflight	3	3
Aircraft weight and balance	2	0
Airspeed	1	1
Airspeed (Va)	1	1
Airspeed (Vmc)	1	1
Airspeed (Vyse)	1	1
Altitude	7	6
Anxiety/apprenhension	1	0
Became lost/disoriented	2	0
Compensation for wind conditions	5	5
Descent	1	1
Design stress limits of aircraft	2	2
Directional control	4	4
Distance	1	1
Diverted attention	1	0
Emergency procedure	1	1
Flare	1	1
Flight and navigation instruments	1	1
Flight into known adverse weather	4	2
Fuel boost pump selector position	1	1
Fuel tank selector position	1	1
Gear extension	2	2
Go-around	1	1
Ground loop/swerve	1	0
IFR procedure	3	3
In-flight planning/decision	7	6
Incapacitation (loss of consciousness)	1	1
Incapacitation (other organic problem)	1	1
Lack of total experience in type operation	1	0
Missed approach	2	2
Operation with known deficiencies in equipment	2	2
Physical impairment (drugs)	1	0
Planned approach	1	1
Planning-decision	2	2
Preflight briefing service	1	0
Preflight planning/preparation	2	0
Procedures/directives	4	4
Propeller feathering	2	2
Proper altitude	2	2
Proper climb rate	1	0
Proper glidepath	1	1
Proper touchdown point	2	1
Refueling	1	1
Remedial action	3	2
Rotor rpm	2	2
Security of cargo	2	2
Spatial disorientation	1	1
Stall	1	1
Supervision	1	0
Unsuitable terrain	2	2
VFR flight into IMC	5	5
Visual lookout	2	2
Weather evaluation	1	1
Wind information	1	0
OTHER PERSON		
Aircraft weight and balance	1	0
Distance	1	1

CAUSE/FACTOR TABLE
NONSCHEDULED 14 CFR 135 OPERATIONS
1992

	Cause or Factor	Cause
OTHER PERSON (continued)		
In-flight planning/decision	1	1
Inadequate surveillance of operation	2	0
Inadequate training (emergency procedure(s))	1	0
Information insufficient	1	0
Insufficient standards/requirements	1	0
Maintenance	1	1
Maintenance, 100 hour inspection	1	1
Maintenance, adjustment	1	1
Maintenance, compliance with AD	1	1
Maintenance, inspection of aircraft	2	1
Maintenance, major alteration	1	0
Maintenance, overhaul	2	2
Material defect (inadequate quality control)	1	1
Preflight planning/preparation	1	0
Procedures/directives	2	1
Radio communications	1	0
Supervision	1	0
Taxispeed	1	0
Visual lookout	3	3

APPENDIX F

N.T.S.B. 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

National Transportation Safety Board

FACTUAL REPORT AVIATION

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

National Transportation Safety Board

FACTUAL REPORT
AVIATION

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

National Transportation Safety Board

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 Filed

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

National Transportation Safety Board

FACTUAL REPORT
AVIATION

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

National Transportation Safety Board

FACTUAL REPORT
AVIATION

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
2 ☐ Part/component #1
3 ☐ Part/component #2
4 ☐ Part/component #3
5 ☐ UNK/NA

144 Incorrect Part *(Multiple entry)*

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

	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