

ARC

Doc
NTSB
ARC
87
02

PB87-183992



NATIONAL TRANSPORTATION SAFETY BOARD

WASHINGTON, D.C. 20594

ANNUAL REVIEW OF AIRCRAFT ACCIDENT DATA

U.S. AIR CARRIER OPERATIONS
CALENDAR YEAR 1984

NTSB/ARC-87/02

Doc
NTSB
ARC
87
02

UNITED STATES GOVERNMENT

TECHNICAL REPORT DOCUMENTATION PAGE

1. Report No. NTSB/ARC-87/02	2. Government Accession No. PB87-183992	3. Recipient's Catalog No.	
4. Title and Subtitle Annual Review of Aircraft Accident Data U.S. Air Carrier Operations Calendar Year 1984		5. Report Date April 15, 1987	
7. Author(s)		6. Performing Organization Code	
9. Performing Organization Name and Address Bureau of Safety Programs National Transportation Safety Board Washington, D.C. 20594		8. Performing Organization Report No.	
12. Sponsoring Agency Name and Address NATIONAL TRANSPORTATION SAFETY BOARD Washington, D. C. 20594		10. Work Unit No. 4602	
		11. Contract or Grant No.	
		13. Type of Report and Period Covered	
		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 1984.			
The report is divided into three major sections according to the federal regulations under which the flight was conducted - 14 CFR 121, 125, 127, 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 1984 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 106	22. Price

CONTENTS

Introduction	1
14 CFR 121, 125, 127 Operations	2
14 CFR 135 Operations	22
Scheduled 14 CFR 135 Operations	23
Nonscheduled 14 CFR 135 Operations	45
Appendix A -- Explanatory Notes	72
Appendix B -- Cause/Factor Table - 14 CFR 121, 125, 127	78
Appendix C -- Cause/Factor Table - Scheduled 14 CFR 135	82
Appendix D -- Cause/Factor Table - Nonscheduled 14 CFR 135	88

LIST OF TABLES
(With Page Numbers)

	Part 121	Part 125	Part 127	Part 135	Sched Part 135	Nonsch Part 135
<u>Summary of Losses</u>	3	22		24		46
<u>Accident Rates</u>	4	—		25		47
<u>List of Accidents</u>	5	—		26		48
<u>Accidents and Rates by Type of Operation</u>	6	—		27		—
<u>Persons by Role and Degree of Injury</u>	7	—		28		54
<u>Aircraft by Damage and Degree of Injury</u>	7	—		28		54
<u>Aircraft by First Occurrence and Degree of Injury</u>	8	—		29		55
<u>Aircraft by First Occurrence and Damage</u>	8	—		30		56
<u>Aircraft by First Occurrence and Broad Phase of Operation</u>	9	—		31		57
<u>Aircraft by Phase of Operation and Degree of Injury</u>	10	—		32		58
<u>Aircraft by Phase of Operation and Damage</u>	10	—		33		59
<u>Aircraft by Condition of Light and Type of Weather</u>	11	—		33		60
<u>Aircraft by Type of Operation and Degree of Injury</u>	11	—		34		60
<u>Aircraft by First Occurrence and Proximity to Airport</u>	12	—		—		—
<u>Aircraft by Proximity to Airport and Flight Plan</u>	—	—		34		61
<u>Aircraft by Occurrence of Fire and Aircraft Damage</u>	12	—		35		61
<u>Aircraft by Occurrence of Fire and Degree of Injury</u>	13	—		35		62
<u>Broad Cause/Factor Assignments</u>	14	—		36		63
<u>Accidents, Fatal Accidents, Fatalities, and Rates</u>	15	—		37		64
<u>Most Prevalent First Occurrences in All Accidents</u>	18	—		40		67
<u>Most Prevalent First Occurrences in Fatal Accidents</u>	19	—		41		68
<u>Most Prevalent First Phases of Operation in All Accidents</u>	19	—		42		68
<u>Most Prevalent First Phases of Operation in Fatal Accidents</u>	20	—		42		69
<u>Broad Cause/Factor Assignments in All Accidents</u>	20	—		43		69
<u>Broad Cause/Factor Assignments in Fatal Accidents</u>	21	—		44		70
<u>Detailed Cause/Factor Assignments</u>	78	—		82		88

INTRODUCTION

This report presents a statistical compilation and review of air carrier accidents which occurred in 1984. The accidents reported are all those involving U.S. registered aircraft conducting air carrier revenue operations under 14 CFR 121, 14 CFR 125, 14 CFR 127, or 14 CFR 135.

Exposure data (flight hours, miles, and departures) used to compute accident rates for Parts 121, 125, and 127 operations and for scheduled Part 135 operations were obtained from the Research & Special Programs Administration (RSPA). Flight hours for nonscheduled Part 135 operations were estimated from data obtained by the Federal Aviation Administration (FAA) in its general aviation activity surveys.

This report is divided into three major sections: 14 CFR 121, 125, 127 Operations, Scheduled 14 CFR 135 Operations, and Nonscheduled 14 CFR 135 Operations. Each of these sections begins with an overview of accidents and their consequences for 1984 and for each of the two preceding years. Several tables then present accident parameters for 1984 only. Concluding each section are tabulations which present comparative statistics for 1984 and for the five-year period 1979-1983.

Beginning in 1982, the Safety Board changed its method of classifying accidents. Although the collection of data remained essentially the same, the method of analysis of these data was revised to allow a more in-depth description of the circumstances of an accident. For instance, the Board no longer uses accident types (first type and second type). Instead, the accident sequence of events is described in terms of occurrences. Although similar in appearance to the accident types formerly used by the Board, the application of the occurrences differs significantly from that of accident types, by providing a better description of the accident scenario and by facilitating citation of underlying causes. Tables in this report that list occurrences are based only on the first occurrence in the accident sequence. To facilitate comparison of 1984 occurrences to accident types under the pre-1982 system, similar types of occurrences have been combined into categories resembling accident types. (A table comparing occurrence types with the accident types previously used is presented in Appendix A.) Table 19 and other tables entitled "Most Prevalent First Occurrences ..." employ the categories defined in Appendix A to enable comparisons between 1984 and the preceding five-year period.

It should be noted that in many of the tables presented in this report (such as in Table 4), the number of accidents in a given category is small, and even a small change in the number of accidents would result in a significant change in the accident rate. Therefore, caution should be exercised in the use of these rates. Similarly, care should be taken in comparing numbers and percentages of accidents between two time periods when the number of accidents is small. The reader should avoid placing undue significance upon a change which may be due primarily to chance.

14 CFR 121, 125, 127 Operations

All 4 fatalities in 1984 Part 121, 125 and 127 operations are the result of one accident. The Lockheed Electra operated by Zantop International Airlines crashed near Chalkhill, Pennsylvania, while on a scheduled cargo flight. The fatalities included all three crewmembers and a non-revenue passenger.

There were a total of 16 accidents in Part 121, 125, and 127 operations in 1984, seven of which involved an inflight encounter with weather. The overall accident rate for 1984 was 0.206 accidents per 100,000 hours flown, the lowest rate in the ten years listed in Table 18. The fatal accident rate of 0.013 fatal accidents per 100,000 hours flown was also the lowest rate in the 10 reported years (the 1980 rate was 0.014). In the five year period 1975-1979 there were a total of 1,331 fatalities in Part 121, 125 and 127 operations while in the five year period 1980-1984 there were 258, a decrease of 81 percent.

**Table 1 - SUMMARY OF LOSSES
14 CFR 121, 125, 127 OPERATIONS**

Accidents	1984	1983	1982
Fatal	1	4	4
Involved Serious Injury	9	11	7
Involved Minor or No Injury	6	9	8
Total	16	24	19
Fatalities			
Passenger	1	8	209
Crew	3	6	13
Other Persons	0	1	12
Total	4	15	234
Aircraft Damage (14 CFR 121, 125, 127)			
Destroyed	2	2	3
Substantial	8	13	9
Minor	2	3	2
None	4	6	4
Not Reported	0	0	1
Total	16	24	19

Table 2 - ACCIDENT RATES
14 CFR 121, 125, 127 OPERATIONS

	1984	1983	1982
Aircraft Miles Flown (Thousands)	3,264,196	2,922,583	2,804,475
Aircraft Hours Flown	7,763,557	6,930,564	6,702,251
Departures Flown	5,599,541	5,167,067	5,094,208

Accident Rates

Per Million Miles Flown	0.0049	0.0082	0.0068
Per Hundred Thousand Hours Flown	0.206	0.346	0.283
Per Hundred Thousand Departures Flown	0.286	0.464	0.373

Fatal Accident Rates

Per Million Miles Flown	0.0003	0.0014	0.0014
Per Hundred Thousand Hours Flown	0.013	0.058	0.060
Per Hundred Thousand Departures Flown	0.018	0.077	0.079

Table 3 - List of Accidents
 14 CFR 121, 125, 127 Operations
 1984

Date	Location	Type of Operation	Air Carrier	Aircraft Type	Aircraft Damage	Degree of Injury	First Occurrence
1/01	East Boston, MA	Nonsch Cargo Sch Pax and Cargo	Blue Bell, Inc. Pilgrim Airlines	CL44D4 F27-100	Substantial Substantial	None Serious	Main gear collapsed Loss of power (total) non-mechanical
1/13	Jamaica, NY	Sch Passenger	Provincetown Boston Airline	DC-3	Substantial	None	Main gear collapsed
2/17	Miami, FL	Sch Pax and Cargo	Braniff Inc.	727-200	Minor	Serious	In flight encounter with weather
3/04	Lampasas, TX	Sch Pax and Cargo	International Air Leases	DC-8-63	Minor	Serious	In flight encounter with weather
4/23	Miami, FL	Sch Passenger	Zantop Int'l Airlines, Inc.	L-188	Destroyed	Fatal (4)	Loss of control - in flight
5/30	Chalkhill, PA	Sch Cargo	United Airlines	727-222	Substantial	None	In flight encounter with weather
5/31	Denver, CO	Sch Passenger	Northern Air Cargo, Inc.	C-118A	Substantial	None	In flight collision with object
6/08	Deadhorse, AK	Nonsch Cargo	US Air, Inc.	DC-9-31	Substantial	Minor	In flight encounter with weather
6/13	Detroit, MI	Sch Passenger	Eastern Air Lines, Inc.	DC-9-31	None	Serious	In flight encounter with weather
7/25	Augusta, GA	Sch Passenger	Florida Aircraft Leasing	C-54	Substantial	None	Nose gear collapsed
8/14	Ft. Lauderdale, FL	Nonsch Cargo	Delta Airlines	DC-8-71	None	Serious	In flight encounter with weather
10/19	Hamilton, AL	Sch Passenger	United Airlines	747-122	Substantial	Serious	Airframe/component/system failure/malfunction
11/16	Honolulu, HI	Sch Passenger	Arrow Airways, Inc. Republic Airlines	DC-8 DC-9-30	None None	Serious Serious	Not reported In flight encounter with weather
11/19	Nassau, Bahamas	Sch Passenger	Flight Trails	440	Destroyed	Serious	Loss of power
12/07	Denver, CO	Sch Passenger	Nonsch Passenger				
12/16	Jasper, AL						

Table 4 - ACCIDENTS AND RATES BY TYPE OF OPERATION
 14 CFR 121, 125, 127 OPERATIONS
 1984

	Type of Operation				
	Scheduled				
	Passenger/ Cargo	All Cargo	All	All Non- Scheduled	All
Accidents	11	1	12	4	16
Fatal Accidents	0	1	1	0	1
Aircraft Miles Flown (Thousands)	3,062,007	71,560	3,133,567	130,629	3,264,196
Aircraft Hours Flown	n/a	n/a	7,438,497	325,060	7,763,557
Departures Flown	n/a	n/a	5,448,150	151,391	5,599,541
Accident Rates					
Per Million Miles Flown	0.0036	0.0140	0.0038	0.0306	0.0049
Per Hundred Thousand Hours Flown	n/a	n/a	0.161	1.231	0.206
Per Hundred Thousand Departures Flown	n/a	n/a	0.220	2.642	0.286
Fatal Accident Rates					
Per Million Miles Flown	0	0.0140	0.0003	0	0.0003
Per Hundred Thousand Hours Flown	n/a	n/a	0.013	0	0.013
Per Hundred Thousand Departures Flown	n/a	n/a	0.018	0	0.018

Table 5 - PERSONS BY ROLE AND DEGREE OF INJURY
 14 CFR 121 125 127 OPERATIONS
 1984

Role of Person	Degree of Injury				Total
	Fatal	Serious	Minor	None	
Pilot	1	0	2	13	16
Copilot	1	1	0	13	15
Flight engineer	1	0	0	7	8
Cabin attendants	0	4	8	38	50
Other crew	0	0	0	16	16
Passenger	1	6	61	1222	1290
Total aboard	4	11	71	1309	1395
Other aircraft*	0	1	15	0	16
Grand total	4	12	86	1309	1411
Percent	.3	.9	6.1	92.8	

* 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 6 - AIRCRAFT BY DAMAGE AND DEGREE OF INJURY
 14 CFR 121 125 127 OPERATIONS
 1984

Aircraft damage	Degree of injury				Aircraft	
	None	Minor	Ser	Fatal	No.	Percent
None	0	0	4	0	4	25.0
Minor	0	0	2	0	2	12.5
Substantial	5	1	2	0	8	50.0
Destroyed	0	0	1	1	2	12.5
Aircraft						
Number -	5	1	9	1	16	
Percent -	31.3	6.3	56.3	6.3		

Table 7 - AIRCRAFT BY FIRST OCCURRENCE AND DEGREE OF INJURY
 14 CFR 121 125 127 OPERATIONS
 1984

Type of first occurrence	Degree of injury				Aircraft	
	None	Minor	Ser	Fatal	No.	Percent
Airframe/component/system failure/malfunction	0	0	1	0	1	6.3
Main gear collapsed	2	0	0	0	2	12.5
Nose gear collapsed	1	0	0	0	1	6.3
In flight collision with object	1	0	0	0	1	6.3
In flight encounter with weather	1	1	5	0	7	43.8
Loss of control - in flight	0	0	0	1	1	6.3
Loss of power	0	0	1	0	1	6.3
Loss of power(total) - non-mechanical	0	0	1	0	1	6.3
Not reported	0	0	1	0	1	6.3
Aircraft						
Number -	5	1	9	1	16	
Percent -	31.3	6.3	56.3	6.3		

Table 8 - AIRCRAFT BY FIRST OCCURRENCE AND DAMAGE
 14 CFR 121 125 127 OPERATIONS
 1984

Type of first occurrence	Aircraft damage				Aircraft	
	None	Minor	Subs	Dest	No.	Percent
Airframe/component/system failure/malfunction	0	0	1	0	1	6.3
Main gear collapsed	0	0	2	0	2	12.5
Nose gear collapsed	0	0	1	0	1	6.3
In flight collision with object	0	0	1	0	1	6.3
In flight encounter with weather	3	2	2	0	7	43.8
Loss of control - in flight	0	0	0	1	1	6.3
Loss of power	0	0	0	1	1	6.3
Loss of power(total) - non-mechanical	0	0	1	0	1	6.3
Not reported	1	0	0	0	1	6.3
Aircraft						
Number -	4	2	8	2	16	
Percent -	25.0	12.5	50.0	12.5		

Table 9 - AIRCRAFT BY FIRST OCCURRENCE AND BROAD PHASE OF OPERATION
 14 CFR 121 125 127 OPERATIONS
 1984

Type of first occurrence	Phase of operation					Aircraft		
	Taxi	Takeoff	Cruis	Descent	Landg	Nrept	No.	Percent
Airframe/component/system failure/malfunction	1	0	0	0	0	0	1	6.3
Main gear collapsed	1	0	0	0	0	1	0	2 12.5
Nose gear collapsed	1	0	0	0	0	0	1	6.3
In flight collision with object	0	0	0	0	1	0	0	1 6.3
In flight encounter with weather	0	1	3	2	1	0	0	7 43.8
Loss of control - in flight	0	0	1	0	0	0	0	1 6.3
Loss of power	0	0	1	0	0	0	0	1 6.3
Loss of power(total) - non-mechanical	0	1	0	0	0	0	0	1 6.3
Not reported	0	0	0	0	0	1	1	6.3
Aircraft								
Number -	3	2	5	2	2	1	1	
Percent -	18.8	12.5	31.3	12.5	12.5	6.3	6.3	

Table 10 - AIRCRAFT BY PHASE OF OPERATION AND DEGREE OF INJURY
 14 CFR 121 125 127 OPERATIONS
 1984

Phase of operation	Degree of injury				Aircraft	
	None	Minor	Ser	Fatal	No.	Percent
Taxi - to takeoff	2	0	1	0	3	18.8
Takeoff - initial climb	1	0	1	0	2	12.5
Cruise	0	0	2	0	2	12.5
Cruise - normal	0	0	2	1	3	18.8
Descent - normal	0	0	2	0	2	12.5
Approach - FAF/outer marker to threshold (IFR)	1	1	0	0	2	12.5
Landing - flare/touchdown	1	0	0	0	1	6.3
Not reported	0	0	1	0	1	6.3
Aircraft						
Number -	5	1	9	1	16	
Percent -	31.3	6.3	56.3	6.3		

Table 11 - AIRCRAFT BY PHASE OF OPERATION AND AIRCRAFT DAMAGE
 14 CFR 121 125 127 OPERATIONS
 1984

Phase of operation	Aircraft damage				Aircraft	
	None	Minor	Subs	Dest	No.	Percent
Taxi - to takeoff	0	0	3	0	3	18.8
Takeoff - initial climb	0	0	2	0	2	12.5
Cruise	0	1	0	1	2	12.5
Cruise - normal	2	0	0	1	3	18.8
Descent - normal	1	1	0	0	2	12.5
Approach - FAF/outer marker to threshold (IFR)	0	0	2	0	2	12.5
Landing - flare/touchdown	0	0	1	0	1	6.3
Not reported	1	0	0	0	1	6.3
Aircraft						
Number -	4	2	8	2	16	
Percent -	25.0	12.5	50.0	12.5		

Table 12 - AIRCRAFT BY CONDITION OF LIGHT AND TYPE OF WEATHER
 14 CFR 121 125 127 OPERATIONS
 1984

Condition of light	Type of weather			Aircraft	
	VMC	IMC	Not reptd	No.	Percent
Daylight	10	3	0	13	81.3
Night (dark)	1	0	1	2	12.5
Not reported	0	0	1	1	6.3
<hr/>					
Aircraft					
Number -	11	3	2	16	
Percent -	68.8	18.8	12.5		

Table 13 - AIRCRAFT BY TYPE OF OPERATION AND DEGREE OF INJURY
 14 CFR 121, 125, 127 OPERATIONS
 1984

Type of Operation	Degree of Injury			Aircraft		
	Fatal	Serious	Minor	None	No.	Percent
Scheduled Domestic Passenger	0	4	1	2	7	43.8
Scheduled Domestic Cargo	1	0	0	0	1	6.3
Scheduled Domestic Pass/Cargo	0	2	0	0	2	12.5
Scheduled International Pass.	0	2	0	0	2	12.5
Nonscheduled Domestic Pass.	0	1	0	0	1	6.3
Nonscheduled Domestic Cargo	0	0	0	2	2	12.5
Nonscheduled Internat. Cargo	0	0	0	1	1	6.3
<hr/>						
Aircraft						
Number -		1	9	1	5	16
Percent -		6.3	56.2	6.3	31.2	

Table 14 - AIRCRAFT BY FIRST OCCURRENCE AND PROXIMITY TO AIRPORT
 14 CFR 121 125 127 OPERATIONS
 1984

Type of first occurrence	Accident location				Aircraft	
	Off air- port/ air- strip	On air- port	air- port	Other	No.	Percent
	-----	-----	-----	-----	-----	-----
Airframe/component/system failure/malfunction	0	1	0	1	6.3	
Main gear collapsed	0	2	0	2	12.5	
Nose gear collapsed	0	1	0	1	6.3	
In flight collision with object	1	0	0	1	6.3	
In flight encounter with weather	5	2	0	7	43.8	
Loss of control - in flight	1	0	0	1	6.3	
Loss of power	0	1	0	1	6.3	
Loss of power(total) - non-mechanical	0	1	0	1	6.3	
Other	0	0	1	1	6.3	
Aircraft						
Number -		7	8	1	16	
Percent -		43.8	50.0	6.3		

Table 15 - AIRCRAFT BY OCCURRENCE OF FIRE AND AIRCRAFT DAMAGE
 14 CFR 121 125 127 OPERATIONS
 1984

Aircraft fire	Aircraft damage				Aircraft	
	None	Minor	Subs	Dest	No.	Percent
-----	-----	-----	-----	-----	-----	-----
None	3	2	8	0	13	81.3
In-flight	0	0	0	2	2	12.5
Not reported	1	0	0	0	1	6.3
Aircraft						
Number -	4	2	8	2	16	
Percent -	25.0	12.5	50.0	12.5		

Table 16 - AIRCRAFT BY OCCURRENCE OF FIRE AND DEGREE OF INJURY
14 CFR 121 125 127 OPERATIONS
1984

Aircraft fire	Degree of injury				Aircraft	
	None	Minor	Ser	Fatal	No.	Percent
None	5	1	7	0	13	81.3
In-flight	0	0	1	1	2	12.5
Not reported	0	0	1	0	1	6.3
Aircraft						
Number -	5	1	9	1	16	
Percent -	31.3	6.3	56.3	6.3		

Table 17 - BROAD CAUSE/FACTOR ASSIGNMENTS*
 14 CFR 121 125 127 OPERATIONS
 1984

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
Pilot	1	6	0	4	1	9
Weather	0	5	0	4	0	7
Personnel	0	1	0	4	0	5
Landing Gear	0	4	0	1	0	4
Powerplant	0	2	0	1	0	2
Terrain	0	0	0	2	0	2
Miscellaneous	0	0	1	2	1	2
Airframe	0	1	0	0	0	1
Systems	0	1	0	0	0	1
Instruments/Equipment/Accessories	1	1	0	0	1	1
Airport/Airways/Facilities	0	0	1	0	1	1
Number of Aircraft			1	16		

* Multiple causes and factors may be assigned in an accident

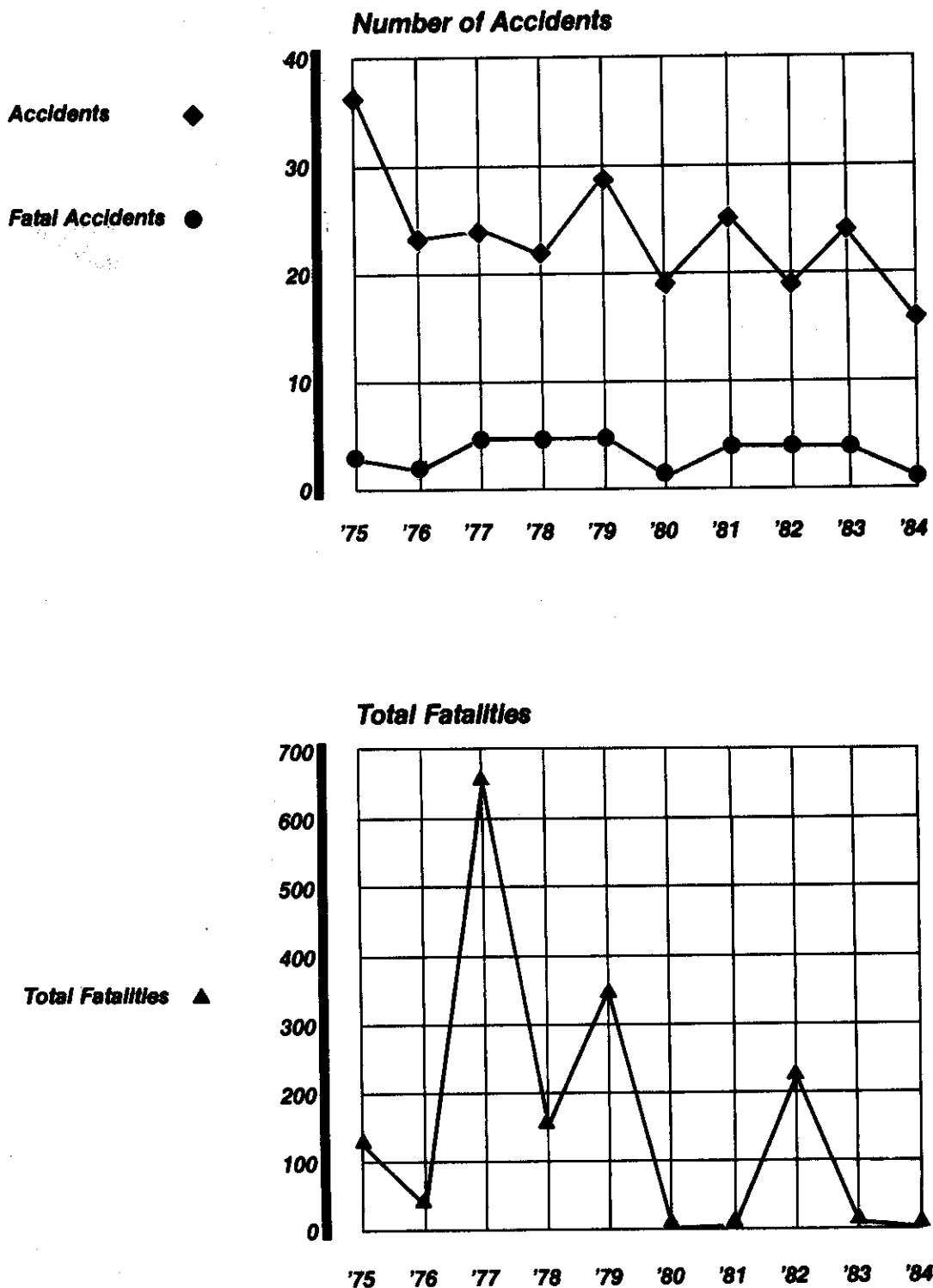
Table 18 - ACCIDENTS, FATAL ACCIDENTS, FATALITIES, AND RATES
 14 CFR 121 125 127 OPERATIONS
 1975 - 1984

Fatalities				
Year	Accidents	Fatal Accidents	Total	Aboard Aircraft In This Category
1975	37	3	124	124
1976	23	2	38	38
1977	24	5	655	398
1978	22	5	160	150
1979	29	5	354	351
1980	19	1	1	0
1981	26	4	4	2
1982	19	4	234	222
1983	24	4	15	14
1984	16	1	4	4

Accident Rate per 100,000
 Aircraft Hours Flown

Year	Hours Flown	Total	Fatal
1975	5,607,358	0.660	0.054
1976	5,806,729	0.396	0.034
1977	6,039,707	0.397	0.083
1978	6,234,628	0.353	0.080
1979	6,878,911	0.422	0.073
1980	7,067,468	0.269	0.014
1981	6,810,255	0.382	0.059
1982	6,702,251	0.283	0.060
1983	6,930,564	0.346	0.058
1984	7,763,557	0.206	0.013

**FIG-1 Accidents, Fatal Accidents and Fatalities
14 CFR 121, 125, 127 Operations**



**FIG-2 Accident Rates
14 CFR 121, 125, 127 Operations**

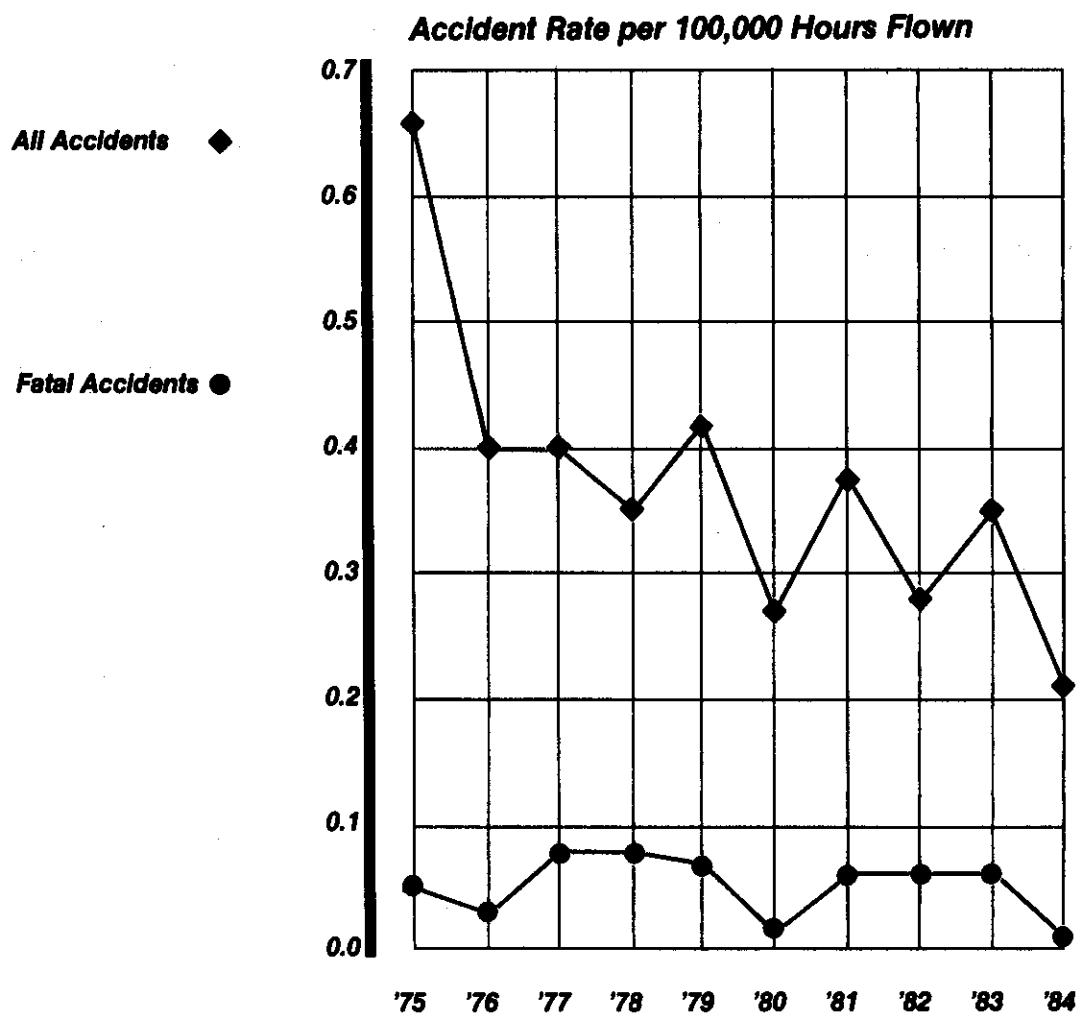


Table 19 - MOST PREVALENT FIRST OCCURRENCES IN ALL ACCIDENTS
 14 CFR 121 125 127 OPERATIONS
 1984 AND 1979 - 1983

Type of Occurrence	1984		1979 - 1983	
	No.	Percent	Mean	Percent
Encounter with weather/turbulence	7	43.8	4.4	18.6
Collision with object/terrain	1	6.3	3.8	16.1
Miscellaneous	0	.0	3.8	16.1
Airframe/component/system fail/malf	1	6.3	1.8	7.6
Gear collapsed/retracted	3	18.8	1.8	7.6
Loss of power	2	12.5	1.8	7.6
Fire/explosion	0	.0	1.2	5.1
Loss of control - on ground	0	.0	1.2	5.1
Undershoot	0	.0	1.0	4.2
Abrupt maneuver	0	.0	.4	1.7
Engine tearaway	0	.0	.4	1.7
Hard landing	0	.0	.4	1.7
Loss of control - in flight	1	6.3	.4	1.7
Not reported	1	6.3	.4	1.7
(All other types)	0	.0	.8	3.4
Total	16	100.0	23.6	100.0

Table 20 - MOST PREVALENT FIRST OCCURRENCES IN FATAL ACCIDENTS
 14 CFR 121 125 127 OPERATIONS
 1984 AND 1979 - 1983

Type of Occurrence	1984		1979 - 1983	
	No.	Percent	Mean	Percent
Miscellaneous	0	.0	1.6	44.4
Collision with object/terrain	0	.0	1.0	27.8
Airframe/component/system fail/malf	0	.0	.4	11.1
Loss of control - in flight	1	100.0	.4	11.1
Engine tearaway	0	.0	.2	5.6
Total	1	100.0	3.6	100.0

Table 21 - MOST PREVALENT FIRST PHASES OF OPERATION IN ALL ACCIDENTS
 14 CFR 121 125 127 OPERATIONS
 1984 AND 1979 - 1983

Phase of Operation	1984		1979 - 1983	
	No.	Percent	Mean	Percent
Landing	1	6.3	4.2	17.8
Takeoff	2	12.5	3.0	12.7
Cruise	5	31.3	3.0	12.7
Approach	2	12.5	3.0	12.7
Taxi	3	18.8	2.8	11.9
Standing	0	.0	2.4	10.2
Climb	0	.0	2.2	9.3
Descent	2	12.5	2.2	9.3
Other	0	.0	.4	1.7
Not reported	1	6.3	.4	1.7
Total	16	100.0	23.6	100.0

Table 22 - MOST PREVALENT FIRST PHASES OF OPERATION IN FATAL ACCIDENTS
 14 CFR 121 125 127 OPERATIONS
 1984 AND 1979 - 1983

Phase of Operation	1984		1979 - 1983	
	No.	Percent	Mean	Percent
Takeoff	0	.0	1.2	33.3
Climb	0	.0	.8	22.2
Standing	0	.0	.4	11.1
Landing	0	.0	.4	11.1
Taxi	0	.0	.2	5.6
Cruise	1	100.0	.2	5.6
Descent	0	.0	.2	5.6
Approach	0	.0	.2	5.6
Total	1	100.0	3.6	100.0

Table 23 - BROAD CAUSE/FACTOR ASSIGNMENTS IN ALL ACCIDENTS
 14 CFR 121 125 127 OPERATIONS
 1984 AND 1979 - 1983

Broad Cause/Factor	1984		1979 - 1983	
	No.	Percent	Mean	Percent
Personnel	5	31.3	11.6	49.2
Pilot	9	56.3	8.8	37.3
Weather	7	43.8	8.0	33.9
Miscellaneous	2	12.5	4.4	18.6
Airport/Airways/Facilities	1	6.3	3.2	13.6
Powerplant	2	12.5	2.8	11.9
Landing Gear	4	25.0	2.2	9.3
Systems	1	6.3	1.4	5.9
Airframe	1	6.3	1.2	5.1
Terrain	2	12.5	1.0	4.2
Undetermined	0	.0	.8	3.4
Instruments/Equipment/Accessories	1	6.3	.2	.8
Rotorcraft	0	.0	.2	.8
Number of Aircraft	16		23.6	

Table 24 - BROAD CAUSE/FACTOR ASSIGNMENTS IN FATAL ACCIDENTS
 14 CFR 121 125 127 OPERATIONS
 1984 AND 1979 - 1983

Broad Cause/Factor	1984		1979 - 1983	
	No.	Percent	Mean	Percent
Personnel	0	.0	2.4	66.7
Pilot	1	100.0	1.6	44.4
Weather	0	.0	1.6	44.4
Systems	0	.0	.8	22.2
Airport/Airways/Facilities	0	.0	.8	22.2
Miscellaneous	1	100.0	.8	22.2
Airframe	0	.0	.4	11.1
Terrain	0	.0	.4	11.1
Powerplant	0	.0	.2	5.6
Instruments/Equipment/Accessories	1	100.0	.2	5.6
Rotorcraft	0	.0	.2	5.6
Number of Aircraft	1		3.6	

Table 25 - SUMMARY OF LOSSES
ALL 14 CFR 135 OPERATIONS

Accidents	1984	1983	1982
Fatal	30	29	36
Involved Serious Injury	23	18	19
Involved Minor or No Injury	115	111	104
Total	168	158	159

Fatalities

Passenger	60	36	53
Crew	38	31	33
Other Persons	2	6	0
Total	100	73	86

Aircraft Damage (14 CFR 135)

Destroyed	47	39	55
Substantial	119	115	100
Minor	1	4	4
None	2	2	0
Unknown	0	0	2
Total	169	160	161

Aircraft Damage (Other)*

Destroyed	1	1	1
Substantial	1	1	0
Total	2	2	1

* Other aircraft are those aircraft not operated under 14 CFR 135 that were involved in on-ground or in-flight collisions with aircraft operated under 14 CFR 135.

Scheduled 14 CFR 135 Operations

There were 22 accidents involving 14 CFR 135 operations in 1984. Seven of them were fatal, involving a total of 48 fatalities. The number of accidents, fatal accidents and fatalities was greater in 1984 than in either of the two preceding years.

The number of accidents and fatal accidents was below the average for the preceding 10 years, while the 48 fatalities in 1984 compares with a 10 year average of 34.5 (see Table 43).

The most serious accident was the midair collision of a Beech C-99 near San Luis Obispo, California (15 fatalities). The other aircraft in this accident was a Rockwell International 112TC on an instructional flight conducted under 14 CFR 91 (2 fatalities).

Table 26 - SUMMARY OF LOSSES
SCHEDULED 14 CFR 135 OPERATIONS

Accidents	1984	1983	1982
Fatal	7	2	5
Involved Serious Injury	4	7	6
Involved Minor or No Injury	11	9	15
Total	22	18	26

Fatalities

Passenger	38	9	8
Crew	8	1	6
Other Persons	2	1	0
Total	48	11	14

Aircraft Damage
(Scheduled 14 CFR 135)

Destroyed	7	6	8
Substantial	15	10	16
Minor	0	2	1
Not reported	0	0	1
Total	22	18	26

Table 27 - ACCIDENT RATES
SCHEDULED 14 CFR 135 OPERATIONS

	1984	1983	1982
Aircraft Miles Flown (Thousands)	291,460	253,572	222,355
Aircraft Hours Flown	1,745,762	1,510,908	1,299,748
Departures Flown	2,676,590	2,328,430	2,026,691

Accident Rates

Per Million Miles Flown	0.0755	0.0710	0.1169
Per Hundred Thousand Hours Flown	1.260	1.191	2.000
Per Hundred Thousand Departures Flown	0.822	0.773	1.283

Fatal Accident Rates

Per Million Miles Flown	0.0240	0.0079	0.0225
Per Hundred Thousand Hours Flown	0.401	0.132	0.385
Per Hundred Thousand Departures Flown	0.262	0.086	0.247

Table 28 - List of Accidents
Scheduled 14 CFR 135 Operations
1984

Date	Location	Type of Operation	Aircraft Type	Aircraft Damage	Degree of Injury	First Occurrence
1/02	Galesburg, IL	Pax and Cargo	Beech BE-99	Substantial	None	Gear collapsed
2/22	Cordova, AK	Pax and Cargo	Embraer EM-110PL	Substantial	None	Loss of control - on ground
3/05	Cumberland, MD	Passenger	Piper PA-31	Destroyed	Fatal (3)	In flight collision with terrain
4/26	North Canton, OH	Pax and Cargo	Short Bros. & Harland SD3-30	Substantial	None	Airframe/component/system failure/malfunction
5/12	Tau, Am. Samoa	Passenger	DeHavilland DHC-6-300	Substantial	None	Hard landing
5/27	Hickory, NC	Passenger	Cessna 402C	Substantial	Serious	Overrun
7/21	Tau, Am. Samoa	Passenger	DeHavilland DHC-6-300	Substantial	Fatal (1)	Airframe/component/system failure/malfunction
8/02	Vieques, PR	Pax and Cargo	Britten Norman BN-2A	Destroyed	Fatal (9)	Failure/malfunction
8/24	San Luis Obispo, CA	Passenger	Beech C-99 Islander	Destroyed	Fatal (17)	Loss of power(partial) -
9/07	Naples, FL	Passenger	Cessna 402C	Destroyed	Fatal (1)	non-mechanical
9/22	New York, NY	Passenger	Aerospatiale SA-360C	Substantial	None	Midair collision
9/24	Atlanta, GA	Passenger	Piper PA-31T3	Substantial	Serious	Loss of power(total) -
10/15	Juneau, AK	Passenger	Cessna C-207	Substantial	None	On ground collision with object
10/18	Sedona, AZ	Passenger	Cessna T207A	Destroyed	None	non-mechanical
11/15	San Antonio, TX	Pax and Cargo	Piper PA-31-350	Substantial	Serious	Loss of power(partial) -
11/20	Fairbanks, AK	Passenger	Embraer EMB-110	Substantial	None	non-mechanical
12/06	Jacksonville, FL	Pax and Cargo	Embraer EMB110PL	Destroyed	Fatal (13)	Main gear collapsed
12/07	Harrison, AR	Passenger	Swearigen Sa226TC	Substantial	None	Not reported
12/12	Miami, FL	Passenger	Piper PA-31-350	Substantial	Serious	Gear collapsed
12/13	San Juan, PR	Passenger	Britten Norman BN-2	Substantial	None	Loss of power(total) -
12/17	Point Hope, AK	Pax and Cargo	Cessna U206	Substantial	None	non-mechanical
12/17	Bainbridge, NY	Passenger	Piper PA-23-250	Destroyed	Fatal (4)	Airframe/component/system failure/malfunction
						Loss of control - in flight
						In flight encounter with weather

Table 29 - ACCIDENTS AND RATES BY TYPE OF OPERATION
 SCHEDULED 14 CFR 135 OPERATIONS
 1984

	Type of Operation	
	Passenger/ Cargo	All*
Accidents	22	22
Fatal Accidents	7	7
Aircraft Miles Flown (Thousands)	266,686	291,460
Aircraft Hours Flown	1,595,626	1,745,762
Departures Flown	2,524,024	2,676,590
Accident Rates		
Per Million Miles Flown	0.0825	0.0755
Per Hundred Thousand Hours Flown	1.379	1.260
Per Hundred Thousand Departures Flown	0.872	0.822
Fatal Accident Rates		
Per Million Miles Flown	0.0262	0.0240
Per Hundred Thousand Hours Flown	0.439	0.401
Per Hundred Thousand Departures Flown	0.277	0.262

* Since 1982, all commuter air line cargo and mail carrying operations were classified the same as on-demand operations, for which there is no requirement to report activity. Therefore, there are no exposure data and rates cannot be calculated for all cargo operations. Exposure data for "All Operations" are estimated by NTSB from RSPA-reported (passenger/cargo) exposure data using the proportion of the totals which had historically been reported for such operations.

Table 30 - PERSONS BY ROLE AND DEGREE OF INJURY
 SCHEDULED 14 CFR 135 OPERATIONS
 1984

Role of Person	Degree of Injury				Type of Injury
	Fatal	Serious	Minor	None	
Pilot	5	4	3	12	24
Copilot	3	2	0	6	11
Check pilot	0	0	0	1	1
Cabin attendants	0	0	0	1	1
Passenger	38	13	17	85	153
Total aboard	46	19	20	105	190
Other aircraft*	2	0	0	1	3
Other ground	0	2	0	0	2
Grand total	48	21	20	106	195
Percent	24.6	10.8	10.3	54.4	Los

* 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.

Ai

Table 31 - AIRCRAFT BY DAMAGE AND DEGREE OF INJURY
 SCHEDULED 14 CFR 135 OPERATIONS
 1984

Aircraft damage	Degree of injury			Aircraft	
	None	Ser	Fatal	No.	Percent
Substantial	10	4	1	15	68.2
Destroyed	1	0	6	7	31.8
Aircraft					
Number -	11	4	7	22	
Percent -	50.0	18.2	31.8		

Table 32 - AIRCRAFT BY FIRST OCCURRENCE AND DEGREE OF INJURY
 SCHEDULED 14 CFR 135 OPERATIONS
 1984

Type of first occurrence	Degree of injury			Aircraft	
	None	Ser	Fatal	No.	Percent
Airframe/component/system failure/malfunction	2	0	1	3	13.6
Gear collapsed	2	0	0	2	9.1
Main gear collapsed	1	0	0	1	4.5
Hard landing	1	0	0	1	4.5
In flight collision with terrain	0	0	1	1	4.5
In flight encounter with weather	0	0	1	1	4.5
Loss of control - in flight	1	0	0	1	4.5
Loss of control - on ground	1	0	0	1	4.5
Midair collision	0	0	1	1	4.5
On ground collision with object	1	0	0	1	4.5
Overrun	0	1	0	1	4.5
Loss of power	1	0	0	1	4.5
Loss of power(total) - non-mechanical	0	3	1	4	18.2
Loss of power(partial) - non-mechanical	1	0	1	2	9.1
Not reported	0	0	1	1	4.5
Aircraft					
Number -	11	4	7	22	
Percent -	50.0	18.2	31.8		

Table 33 - AIRCRAFT BY FIRST OCCURRENCE AND DAMAGE
 SCHEDULED 14 CFR 135 OPERATIONS
 1984

Type of first occurrence	Aircraft damage		Aircraft	
	Subs	Dest	No.	Percent
Airframe/component/system failure/malfunction	3	0	3	13.6
Gear collapsed	2	0	2	9.1
Main gear collapsed	1	0	1	4.5
Hard landing	1	0	1	4.5
In flight collision with terrain	0	1	1	4.5
In flight encounter with weather	0	1	1	4.5
Loss of control - in flight	1	0	1	4.5
Loss of control - on ground	1	0	1	4.5
Midair collision	0	1	1	4.5
On ground collision with object	1	0	1	4.5
Overrun	1	0	1	4.5
Loss of power	0	1	1	4.5
Loss of power(total) - non-mechanical	3	1	4	18.2
Loss of power(partial) - non-mechanical	1	1	2	9.1
Not reported	0	1	1	4.5
Aircraft				
Number -	15	7	22	
Percent -	68.2	31.8		

Table 34 - AIRCRAFT BY FIRST OCCURRENCE AND BROAD PHASE OF OPERATION
 SCHEDULED 14 CFR 135 OPERATIONS
 1984

Type of first occurrence	Phase of operation						Aircraft	
	Taxi	Tkoff	Climb	Aprch	Landg	Nrept	No.	Percent
Airframe/component/system failure/malfunction	2	0	0	1	0	0	3	13.6
Gear collapsed	1	0	0	0	1	0	2	9.1
Main gear collapsed	0	0	0	0	1	0	1	4.5
Hard landing	0	0	0	0	1	0	1	4.5
In flight collision with terrain	0	0	0	1	0	0	1	4.5
In flight encounter with weather	0	0	0	1	0	0	1	4.5
Loss of control - in flight	0	1	0	0	0	0	1	4.5
Loss of control - on ground	0	0	0	0	1	0	1	4.5
Midair collision	0	0	1	0	0	0	1	4.5
On ground collision with object	1	0	0	0	0	0	1	4.5
Overrun	0	0	0	0	1	0	1	4.5
Loss of power	0	0	0	1	0	0	1	4.5
Loss of power(total) - non-mechanical	0	0	2	2	0	0	4	18.2
Loss of power(partial) - non-mechanical	0	1	0	1	0	0	2	9.1
Not reported	0	0	0	0	0	1	1	4.5
Aircraft								
Number -	4	2	3	7	5	1	22	
Percent -	18.2	9.1	13.6	31.8	22.7	4.5		

Table 35 - AIRCRAFT BY PHASE OF OPERATION AND DEGREE OF INJURY
 SCHEDULED 14 CFR 135 OPERATIONS
 1984

Phase of operation	Degree of injury			Aircraft	
	None	Ser	Fatal	No.	Percent
Taxi - to takeoff	2	0	0	2	9.1
Taxi - from landing	2	0	0	2	9.1
Takeoff - initial climb	1	0	1	2	9.1
Climb - to cruise	0	1	2	3	13.6
Approach	1	0	1	2	9.1
Approach - VFR pattern - base to final	0	0	1	1	4.5
Approach - VFR pattern - final approach	1	1	0	2	9.1
Approach - IAF to FAF/outer marker (IFR)	0	0	1	1	4.5
Approach - FAF/outer marker to threshold (IFR)	0	1	0	1	4.5
Landing - flare/touchdown	1	0	0	1	4.5
Landing - roll	3	1	0	4	18.2
Not reported	0	0	1	1	4.5
Aircraft					
Number -	11	4	7	22	
Percent -	50.0	18.2	31.8		

Table 36 - AIRCRAFT BY PHASE OF OPERATION AND AIRCRAFT DAMAGE
 SCHEDULED 14 CFR 135 OPERATIONS
 1984

Phase of operation	Aircraft damage		Aircraft	
	Subs	Dest	No.	Percent
Taxi - to takeoff	2	0	2	9.1
Taxi - from landing	2	0	2	9.1
Takeoff - initial climb	1	1	2	9.1
Climb - to cruise	1	2	3	13.6
Approach	1	1	2	9.1
Approach - VFR pattern - base to final	1	0	1	4.5
Approach - VFR pattern - final approach	1	1	2	9.1
Approach - IAF to FAF/outer marker (IFR)	0	1	1	4.5
Approach - FAF/outer marker to threshold (IFR)	1	0	1	4.5
Landing - flare/touchdown	1	0	1	4.5
Landing - roll	4	0	4	18.2
Not reported	0	1	1	4.5
Aircraft				
Number -	15	7	22	
Percent -	68.2	31.8		

Table 37 - AIRCRAFT BY CONDITION OF LIGHT AND TYPE OF WEATHER
 SCHEDULED 14 CFR 135 OPERATIONS
 1984

Condition of light	Type of weather			Aircraft	
	VMC	IMC	Not reptd	No.	Percent
Daylight	12	3	1	16	72.7
Night (dark)	1	2	0	3	13.6
Night (bright)	1	0	0	1	4.5
Dusk	1	0	1	2	9.1
Aircraft					
Number -	15	5	2	22	
Percent -	68.2	22.7	9.1		

Table 38 - AIRCRAFT BY TYPE OF OPERATION AND DEGREE OF INJURY
 SCHEDULED 14 CFR 135 OPERATIONS
 1984

Type of Operation	Degree of Injury			Aircraft	
	Fatal	Serious	None	No.	Percent
Domestic Passenger	5	3	5	13	59.1
Domestic Passenger/Cargo	2	1	4	7	31.8
Domestic Cargo	0	0	2	2	9.1
Aircraft	---	---	---	---	---
Number -	7	4	11	22	
Percent -	31.8	18.2	50.0		

Table 39 - AIRCRAFT BY PROXIMITY TO AIRPORT AND FLIGHT PLAN
 SCHEDULED 14 CFR 135 OPERATIONS
 1984

Proximity to Airport	Type of Flight Plan			Aircraft	
	VFR	IFR	None	No.	Percent
On Airport	5	6	1	12	54.5
Within 5 SM	1	3	0	4	18.2
5 SM Or Greater	0	1	0	1	4.5
Not Reported	1	3	1	5	22.7
Aircraft	---	---	---	---	---
Number -	7	13	2	22	
Percent -	31.8	59.1	9.1		

Table 40 - AIRCRAFT BY OCCURRENCE OF FIRE AND AIRCRAFT DAMAGE
 SCHEDULED 14 CFR 135 OPERATIONS
 1984

Aircraft fire	Aircraft damage		Aircraft	
	Subs	Dest	No.	Percent
None	14	2	16	72.7
On ground	1	5	6	27.3
	---	---	--	
Aircraft				
Number -	15	7	22	
Percent -	68.2	31.8		

Table 41 - AIRCRAFT BY OCCURRENCE OF FIRE AND DEGREE OF INJURY
 SCHEDULED 14 CFR 135 OPERATIONS
 1984

Aircraft fire	Degree of injury			Aircraft	
	None	Ser	Fatal	No.	Percent
None	9	4	3	16	72.7
On ground	2	0	4	6	27.3
	---	---	---	--	
Aircraft					
Number -	11	4	7	22	
Percent -	50.0	18.2	31.8		

Table 42 - BROAD CAUSE/FACTOR ASSIGNMENTS*
 SCHEDULED 14 CFR 135 OPERATIONS
 1984

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	Fatal Accidents	All Accidents	Fatal Accidents
Pilot	4	12	2	7	4	13			
Powerplant	1	5	1	2	2	6			
Weather	0	1	2	5	2	6			
Personnel	2	2	3	5	3	5			
Terrain	0	0	1	5	1	5			
Landing Gear	0	4	0	0	0	0			
Airport/Airways/Facilities	0	0	0	3	0	4			
Miscellaneous	0	0	1	3	1	3			
Undetermined	0	3	0	0	0	0			
Systems	0	2	0	1	0	0			
Airframe	1	1	0	0	1	1			
Rotorcraft	0	1	0	1	0	1			
Number of Aircraft					7	22			

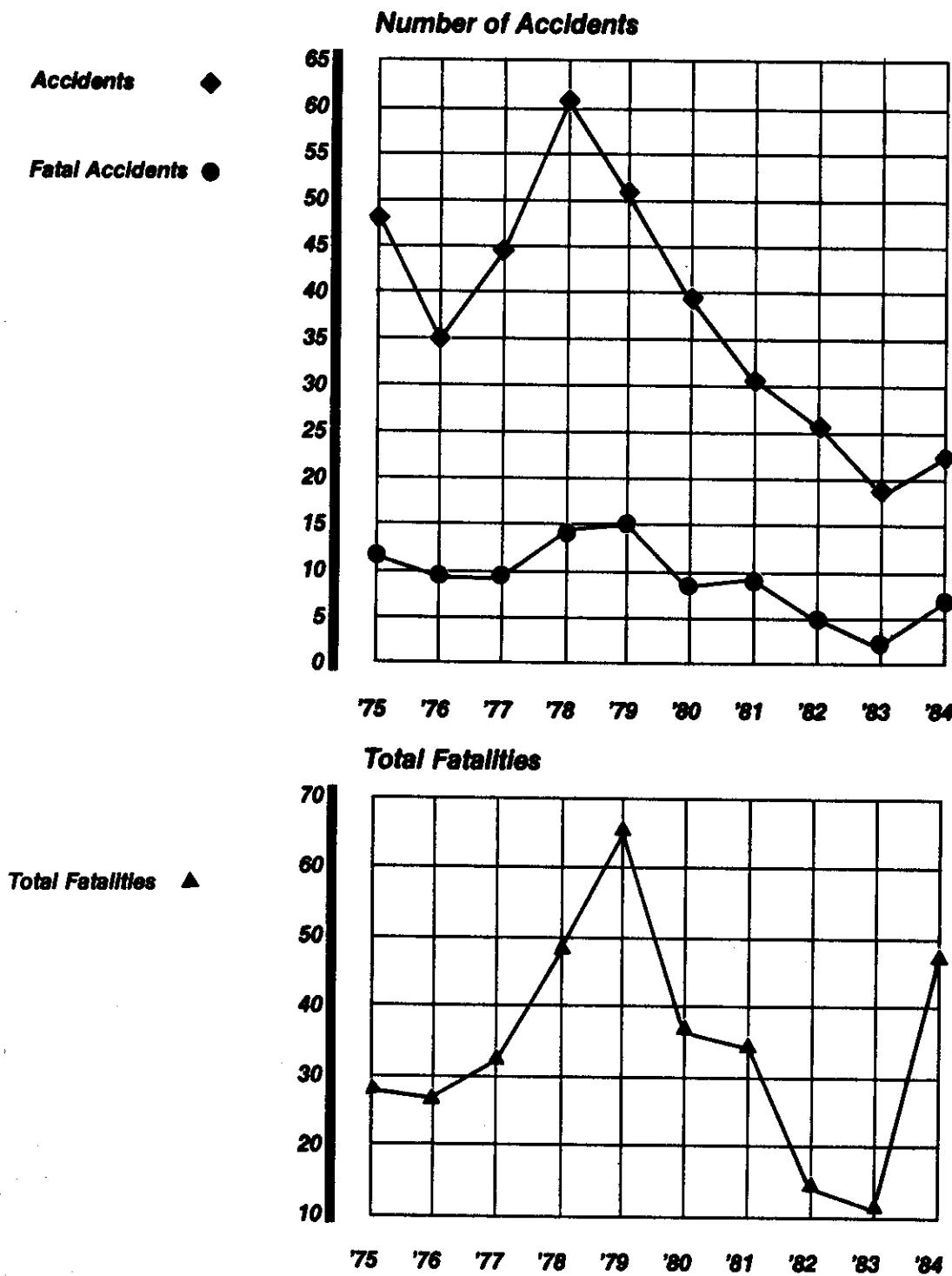
* Multiple causes and factors may be assigned in an accident

Table 43 - ACCIDENTS, FATAL ACCIDENTS, FATALITIES, AND RATES
 SCHEDULED 14 CFR 135 OPERATIONS
 1975 - 1984

Fatalities				
Year	Accidents	Fatal Accidents	Total	Aboard Aircraft In This Category
1975	48	12	28	26
1976	35	9	27	23
1977	44	9	32	32
1978	61	14	48	48
1979	52	15	66	66
1980	38	8	37	37
1981	31	9	34	32
1982	26	5	14	14
1983	18	2	11	10
1984	22	7	48	46

Accident Rate per 100,000 Aircraft Hours Flown			
Year	Hours Flown	Total	Fatal
1975	936,312	5.126	1.282
1976	965,296	3.626	0.932
1977	1,150,250	3.825	0.782
1978	1,302,136	4.684	1.075
1979	1,169,921	4.445	1.282
1980	1,175,588	3.232	0.680
1981	1,240,764	2.498	0.725
1982	1,299,748	2.000	0.385
1983	1,510,908	1.191	0.132
1984	1,745,762	1.260	0.401

**FIG-3 Accidents, Fatal Accidents and Fatalities
Scheduled 14 CFR 135 Operations**



**FIG-4 Accident Rates
Scheduled 14 CFR 135 Operations**

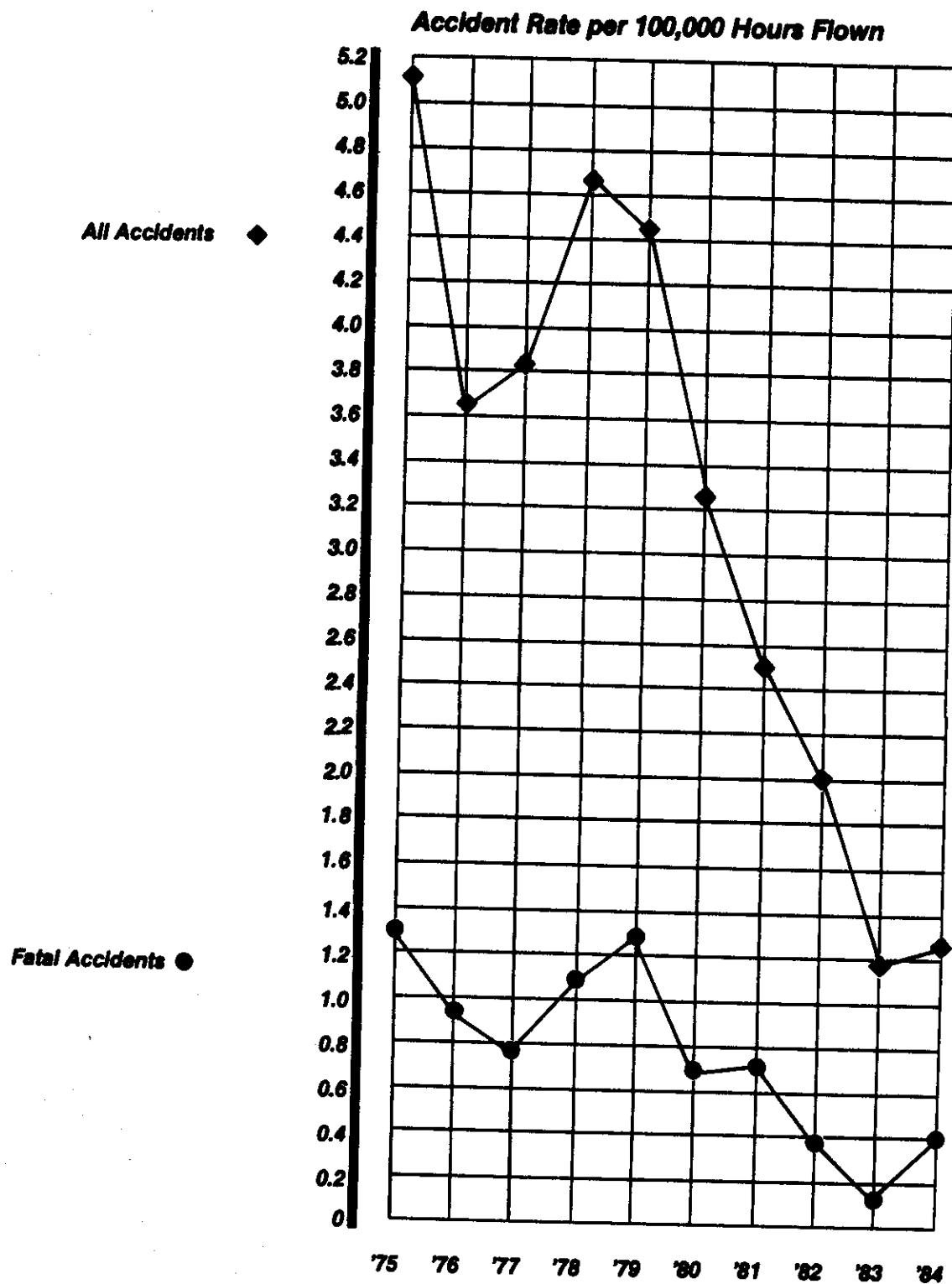


Table 44 - MOST PREVALENT FIRST OCCURRENCES IN ALL ACCIDENTS
 SCHEDULED 14 CFR 135 OPERATIONS
 1984 AND 1979 - 1983

Type of Occurrence	1984		1979 - 1983	
	No.	Percent	Mean	Percent
Collision with object/terrain	2	9.1	10.2	30.7
Loss of power	7	31.8	7.0	21.1
Loss of control - in flight	1	4.5	2.8	8.4
Loss of control - on ground	1	4.5	2.4	7.2
Airframe/component/system fail/malf	3	13.6	2.0	6.0
Encounter with weather/turbulence	1	4.5	2.0	6.0
Fire/explosion	0	.0	1.4	4.2
Miscellaneous	1	4.5	1.2	3.6
Gear collapsed/retracted	3	13.6	1.0	3.0
Prop/rotor contact	0	.0	1.0	3.0
Hard landing	1	4.5	.6	1.8
Dragged wing, rotor, pod, float	0	.0	.4	1.2
Midair collision	1	4.5	.4	1.2
(All other types)	1	4.5	.8	2.4
Total	22	100.0	33.2	100.0

Table 45 - MOST PREVALENT FIRST OCCURRENCES IN FATAL ACCIDENTS
 SCHEDULED 14 CFR 135 OPERATIONS
 1984 AND 1979 - 1983

Type of Occurrence	1984		1979 - 1983	
	No.	Percent	Mean	Percent
Collision with object/terrain	1	14.3	2.2	28.2
Loss of control - in flight	0	.0	1.6	20.5
Loss of power	2	28.6	1.4	17.9
Encounter with weather/turbulence	1	14.3	.8	10.3
Airframe/component/system fail/malf	1	14.3	.4	5.1
Fire/explosion	0	.0	.4	5.1
Prop/rotor contact	0	.0	.4	5.1
Loss of control - on ground	0	.0	.2	2.6
Midair collision	1	14.3	.2	2.6
Undetermined	0	.0	.2	2.6
(All other types)	1	14.3	.0	.0
Total	7	100.0	7.8	100.0

Table 46 - MOST PREVALENT FIRST PHASES OF OPERATION IN ALL ACCIDENTS
 SCHEDULED 14 CFR 135 OPERATIONS
 1984 AND 1979 - 1983

Phase of Operation	1984		1979 - 1983	
	No.	Percent	Mean	Percent
Takeoff	2	9.1	8.8	26.5
Landing	5	22.7	5.8	17.5
Approach	7	31.8	5.4	16.3
Taxi	4	18.2	4.2	12.7
Cruise	0	.0	4.0	12.0
Standing	0	.0	2.2	6.6
Descent	0	.0	1.4	4.2
Climb	3	13.6	.6	1.8
Maneuvering	0	.0	.6	1.8
Other	0	.0	.2	.6
(All other types)	1	4.5	.0	.0
Total	22	100.0	33.2	100.0

Table 47 - MOST PREVALENT FIRST PHASES OF OPERATION IN FATAL ACCIDENTS
 SCHEDULED 14 CFR 135 OPERATIONS
 1984 AND 1979 - 1983

Phase of Operation	1984		1979 - 1983	
	No.	Percent	Mean	Percent
Approach	3	42.9	2.2	28.2
Takeoff	1	14.3	1.8	23.1
Cruise	0	.0	1.8	23.1
Descent	0	.0	.6	7.7
Maneuvering	0	.0	.6	7.7
Standing	0	.0	.4	5.1
Landing	0	.0	.2	2.6
Other	0	.0	.2	2.6
(All other types)	3	42.9	.0	.0
Total	7	100.0	7.8	100.0

Table 48 - BROAD CAUSE/FACTOR ASSIGNMENTS IN ALL ACCIDENTS
 SCHEDULED 14 CFR 135 OPERATIONS
 1984 AND 1979 - 1983

Broad Cause/Factor	1984		1979 - 1983	
	No.	Percent	Mean	Percent
Pilot	13	59.1	20.4	61.4
Personnel	5	22.7	11.4	34.3
Weather	6	27.3	9.8	29.5
Powerplant	6	27.3	6.2	18.7
Terrain	5	22.7	4.0	12.0
Airport/Airways/Facilities	3	13.6	3.8	11.4
Miscellaneous	3	13.6	3.4	10.2
Landing Gear	4	18.2	3.0	9.0
Airframe	1	4.5	2.0	6.0
Systems	2	9.1	1.8	5.4
Undetermined	3	13.6	1.2	3.6
Rotorcraft	1	4.5	.6	1.8
Instruments/Equipment/Accessories	0	.0	.2	.6
Number of Aircraft	22		33.2	

Table 49 - BROAD CAUSE/FACTOR ASSIGNMENTS IN FATAL ACCIDENTS
 SCHEDULED 14 CFR 135 OPERATIONS
 1984 AND 1979 - 1983

Broad Cause/Factor	1984		1979 - 1983	
	No.	Percent	Mean	Percent
Pilot	4	57.1	6.0	76.9
Weather	2	28.6	3.8	48.7
Personnel	3	42.9	3.0	38.5
Powerplant	2	28.6	1.4	17.9
Miscellaneous	1	14.3	1.2	15.4
Terrain	1	14.3	1.0	12.8
Systems	0	.0	.8	10.3
Undetermined	0	.0	.6	7.7
Airframe	1	14.3	.4	5.1
Instruments/Equipment/Accessories	0	.0	.2	2.6
Rotorcraft	0	.0	.2	2.6
Airport/Airways/Facilities	0	.0	.2	2.6
Number of Aircraft	7		7.8	

Nonscheduled 14 CFR 135 Operations

Although the total number of accidents increased slightly during 1984, the fatal accident rate per 100,000 hours flown decreased to the lowest level in the ten year period 1975-1984 (see Table 66). After a 21 percent decrease in hours flown in 1983 (compared with 1982), the hours flown during 1984 rebounded to within 1.4% of the average over the previous nine year period.

Table 53 shows that approximately 80 percent of persons aboard accident-involved aircraft in this category (332 of 416 persons) received minor or no injuries. Among passengers, 8.8 percent were fatally injured while 58.6 percent were uninjured.

**Table 50 - SUMMARY OF LOSSES
NONSCHEDEDL 14 CFR 135 OPERATIONS**

Accidents	1984	1983	1982
Fatal	23	27	31
Involved Serious Injury	19	11	13
Involved Minor or No Injury	104	102	88
Total	146	140	132

Fatalities			
Passenger	22	27	45
Crew	30	30	27
Other Persons	0	5	0
Total	52	62	72

Aircraft Damage (14 CFR 135)

Destroyed	40	33	47
Substantial	104	105	83
Minor	1	2	3
None	2	2	0
Unknown	0	0	1
Total	147	142	134

Aircraft Damage (Other)*

Destroyed	1	1	1
Substantial	1	1	0
Total	2	2	1

* Other aircraft are those not operated as Nonscheduled 14 CFR 135 flights which were involved in on-ground or in-flight collisions with aircraft operated as Nonscheduled 14 CFR 135 flights.

Table 51 - ACCIDENT RATES
NONSCHEDED 14 CFR 135 OPERATIONS

	1984	1983	1982
Hours Flown	3,079,007	2,574,883	3,256,763
<hr/>			
Accident Rates*			
All Accidents	4.742	5.437	4.053
Fatal Accidents	0.747	1.049	0.952

*Per Hundred Thousand Hours Flown

Table 52 - List of Accidents
Nonscheduled 14 CFR 35 Operations
1984

Date	Location	Type of Operation	Aircraft Type	Aircraft Damage	Degree of Injury	First Occurrence
1/06	Arco, ID	Passenger	Cessna C172N	Destroyed	Fatal (3)	In flight encounter with weather
1/09	Chicago, IL	Cargo	Piper PA-34-220T	Substantial	None	On ground collision with object
1/11	Albuquerque, NM	Passenger	Piper PA-32R-301T	Substantial	None	Airframe/component/system failure/malfunction
1/18	Deering, AK	Pax and Cargo	Cessna 207A	Substantial	None	On ground collision with object
1/18	Casper, WY	Cargo	Cessna 310Q	Substantial	None	Loss of power(total) - non-mechanical
1/20	Liberty, MO	Passenger	Aero Commander 690A	Substantial	None	Loss of power(total) - non-mechanical
1/23	Ft. Myers, FL	Passenger	Beech 58	Substantial	None	Airframe/component/system failure/malfunction
1/23	New Orleans, LA	Cargo	Piper PA-32RT-300	Substantial	Fatal (1)	Loss of power(total) - mech failure/malfunction
1/24	Venice, LA	Passenger	Bell 206L-1	Substantial	Minor	In flight encounter with weather
1/26	Buffalo, WY	Pax and Cargo	Hughes 369HS	Substantial	None	Loss of power(total) - non-mechanical
1/27	Stuart, FL	Passenger	Bell 206B	Destroyed	Fatal (1)	In flight collision with terrain
1/30	Ogden, UT	Pax and Cargo	Bell 47G-3B-1	Substantial	None	In flight encounter with weather
2/02	Covington, KY	Cargo	Cessna 404	Substantial	None	Fire
2/07	Sidney, MT	Cargo	Cessna T210M	Destroyed	Fatal (1)	Loss of control - in flight
2/07	Newark, NJ	Cargo	Piper PA-600	Substantial	None	Loss of control - on ground
2/09	Burns, OR	Mail Only	Piper PA-34-200	Substantial	None	On ground collision with terrain
2/15	Atlanta, GA	Cargo	Piper PA-30	Substantial	None	Nose gear collapsed
2/17	Alma, OR	Passenger	Aerospatiale AS-341G	Substantial	None	Loss of power(partial) - mech failure/malfunction
2/17	Duchesne, UT	Cargo	Cessna T-210	Substantial	None	In flight collision with object
2/18	Lake City, CO	Passenger	Bell 206L-3	Substantial	Minor	Loss of control - in flight
2/18	Linden, NJ	Passenger	Cessna 401A	Substantial	None	Main gear collapsed
2/22	Key West, FL	Passenger	Cessna 185F	Destroyed	Serious	Airframe/component/system failure/malfunction
2/25	Coalville, UT	Passenger	Bell 206B-III	Destroyed	Fatal (1)	Roll over
2/29	Longview, TX	Cargo	Beech E-55	Substantial	Minor	Loss of power(total) - non-mechanical
3/04	Glenallen, AK	Passenger	Fairchild Hiller FH-100	Substantial	None	In flight encounter with weather
3/07	Atlanta, GA	Cargo	Piper PA-30	Substantial	None	On ground collision with object
3/07	Atlanta, GA	Cargo	Piper PA 31-350	Substantial	None	On ground collision with object
3/12	Crooked Creek, AK	Pax and Cargo	Cessna 207A	Substantial	Minor	OVERRUN

Table 52 - List of Accidents (Continued)
Nonscheduled 14 CFR 135 Operations

Date	Location	Type of Operation	Aircraft Type	Aircraft Damage	Injury	First Occurrence
3/12	W Camrn Blk 624, GM	Passenger	Bell 206L-1	Destroyed	Fatal (4)	Loss of control - on ground
3/13	Story, WY	Passenger	Aerospatiale SA-316B	Substantial	Serious	Loss of power(total) - non-mechanical
3/14	Chicago, IL	Cargo	Cessna 401	Substantial	None	Main gear collapsed
3/14	Myrtle Beach, SC	Cargo	Beech 99	Substantial	None	In flight collision with terrain
3/19	Morrisonville, NY	Cargo	Beech H-18	Destroyed	Fatal (1)	Loss of control - in flight
3/21	Kenosha, WI	Passenger	Cessna 402C	Substantial	None	Overshoot
3/31	Miles City, MT	Cargo	Aero Commander 500-B	Destroyed	Serious	In flight collision with terrain
4/05	W Cameron 540, GM	Passenger	Aerospatiale AS 355F	Destroyed	Fatal (4)	In flight collision with object
4/05	Wichita, KS	Cargo	Cessna 401	Substantial	None	Main gear collapsed
4/17	Bentley Creek, PA	Cargo	Beech 58	Destroyed	Fatal (1)	Loss of control - in flight
4/18	Belle Chasse, LA	Passenger	Cessna 185F	Minor	Serious	On ground collision with object
4/23	Dulce, NM	Passenger	Heilio H-295	Substantial	None	In flight collision with object
4/30	Boston, MA	Passenger	Bell 206	Substantial	None	Loss of power
4/30	Vancouver, WA	Cargo	Cessna T210L	Substantial	None	Loss of power(total) - non-mechanical
5/01	High Isl Blk595, GM	Pax and Cargo	Sikorsky S-76A	Substantial	None	Loss of power(total) - mech failure/malfunction
5/02	Meeker, CO	Passenger	Hughes 369D	Substantial	Serious	Loss of power(function) - non-mechanical
5/05	San Miguel Is, CA	Passenger	Cessna 180K	Substantial	None	Loss of control - in flight
5/10	Clarkson, KY	Cargo	Cessna 310R	Destroyed	Fatal (2)	Loss of control - in flight
5/11	Marion, IL	Cargo	Beech E18S	Destroyed	Minor	Loss of power(total) - non-mechanical
5/16	Mt McKinley Vil, AK	Passenger	Bell 206L-1	Substantial	None	Loss of power(total) - mech failure/malfunction
5/24	Nunavachak, AK	Passenger	Piper PA-32	Substantial	None	In flight collision with object
5/27	San Antonio, TX	Passenger	Bell 206B	Destroyed	Serious	Loss of control - in flight
5/31	Teterboro, NJ	Passenger	Piper Aerostar 600	Substantial	Minor	On ground collision with object
6/03	Alcova, WY	Passenger	Aerospatiale SA316B	Substantial	None	Loss of control - in flight
6/04	Yatutat, AK	Passenger	Cessna 206	Substantial	None	Undershoot
6/04	Windsor Locks, CT	Cargo	Learjet 23A	Destroyed	Fatal (3)	Loss of control - in flight
6/04	North Bend, OR	Cargo	Piper PA-34-200	Destroyed	Fatal (1)	In flight collision with object
6/06	Iron Mountain, MI	Passenger	Beech 58	Substantial	None	On ground collision with object
6/08	South Pelto, GM	Passenger	Bell 206B	Substantial	Minor	Loss of power(total) - mech failure/malfunction
6/12	Salem, VA	Passenger	Bell 222	Substantial	None	In flight collision with object
6/14	Whittier, AK	Pax and Cargo	Bell 206L-1	Substantial	None	Loss of power(partial) - non-mechanical

Table 52 - List of Accidents (Continued)
Nonscheduled 14 CFR 135 Operations
1984

Date	Location	Type of Operation	Aircraft Type	Aircraft Damage	Degree of Injury	First Occurrence
6/15	Camp Verde, AZ	Passenger	Cessna T210N	Substantial	None	Airframe/component/system failure/malfunction with object
6/16	Wrangell, AK	Passenger	Hughes 369D	Substantial	None	On ground collision with object
6/17	Talkeetna, AK	Passenger	Cessna A185F	Substantial	None	Airframe/component/system failure/malfunction
6/19	Island Beach, NJ	Passenger	Aerospatiale AS-350D	Destroyed	Fatal (3)	In flight encounter with weather
6/20	San Francisco, CA	Cargo	Cessna 404	Substantial	None	Miscellaneous/other
6/22	Anacortes, WA	Cargo	Cessna 207	Substantial	None	Undershoot
6/25	Galveston, TX	Pax and Cargo	Bell 212	Substantial	Minor	Loss of power(partial) - mech
6/26	Ekuk, AK	Pax and Cargo	Piper PA-32-300	Substantial	Serious	In flight collision with object
6/27	Loiza, PR	Passenger	Bell 206L-1	Substantial	Serious	Propeller/rotor contact
6/30	San Angelo, TX	Cargo	Piper PA-32RT-301T	Destroyed	Minor	Fire
7/03	E Brake Blk	Passenger	Bell 222UT	Substantial	None	Loss of control - in flight
7/07	Gualala, CA	Passenger	Cessna 500	Substantial	None	Hard landing
7/08	Oneonta, NY	Passenger	Beech 58	Substantial	None	Airframe/component/system failure/malfunction
7/09	Franklin, TN	Passenger	Hughes 369D	Destroyed	Serious	Loss of power(total) -
7/11	Ketchikan, AK	Passenger	Cessna A185F	Destroyed	Serious	non-mechanical
7/11	Castle Rock, WA	Cargo	Aero Commander 680T	Destroyed	Minor	Loss of power(total) -
7/14	Rehobeth, MA	Cargo	MBB BO-105C	Destroyed	Fatal (2)	non-mechanical
7/16	Newcomb, NY	Cargo	Piper PA-34-220T	Destroyed	Fatal	In flight encounter with weather
7/17	Fairbanks, AK	Cargo	Helio H-250	Substantial	None	Loss of control - in flight
7/17	Honolulu, HI	Cargo	Beech H18S	Destroyed	None	Loss of power(total) -
7/19	Cold Foot, AK	Cargo	Cessna 206	Substantial	None	non-mechanical
7/19	No. Myrtle Beach, SC	Passenger	Beech 95-B55	Substantial	None	In flight collision with terrain
7/21	Ouzinkie, AK	Passenger	Grumman G-21A	Destroyed	Fatal (4)	In flight encounter with weather
7/21	High Isl. Blk298, GM	Passenger	Bell 206L-1	Substantial	Minor	In flight collision with object
7/25	Anchorage, AK	Passenger	Cessna 401	None	Fatal (5)	Missing aircraft
7/28	Waterville, ME	Passenger	Gates Learjet 25B	Substantial	Serious	Overrun
7/29	Meadview, AZ	Passenger	Fairchild Hiller FH-1100	Destroyed	Fatal (3)	In flight collision with object

Table 52 - List of Accidents (Continued)
Nonscheduled 14 CFR 135 Operations
1984

Date	Location	Type of Operation	Aircraft Type	Aircraft Damage	Degree of Injury	First Occurrence
7/31	Honeydew, CA	Cargo	Piper PA-23-250	Destroyed	Fatal (1)	In flight collision with terrain
8/01	University Park, PA	Passenger	Cessna 335	Substantial	None	Main gear collapsed
8/02	Brunswick, ME	Passenger	Piper PA-32-260	Substantial	Minor	Loss of power
8/03	Hutchinson, KS	Mail Only	Cessna 401	Substantial	None	Main gear collapsed
8/03	Detroit, MI	Passenger	Gulfstream 690	Substantial	None	Main gear collapsed
8/09	Tulsa, OK	Passenger	Piper PA-32R-300	Substantial	Serious	Loss of power(total) - mech failure/malfunction
8/11	Memphis, TN	Cargo	Douglas DC3C-S1C3G	Destroyed	Fatal (3)	Loss of power(partial) - mech failure/malfunction
8/14	Newark, NJ	Cargo	Cessna 310I	None	Serious	Propeller/rotor contact
8/22	Viekoda Bay, AK	Passenger	Cessna 206	Destroyed	Minor	In flight collision with object
8/27	Austin, TX	Passenger	Robinson R-22	Substantial	None	On ground collision with object
8/29	Howell, MI	Cargo	Cessna 210M	Destroyed	None	Loss of power
9/04	Houma, LA	Cargo	Bell 206B	Destroyed	Minor	Fire
9/07	Lyman, WY	Passenger	Aerospatiale SA315B	Substantial	Minor	Loss of power(partial) - non-mechanical
9/10	Chesterfield, MO	Cargo	Gates Learjet LR-24D	Substantial	None	Loss of control - on ground
9/14	Anchorage, AK	Cargo	DeHavilland DHC-2	Substantial	None	On ground collision with object
9/14	Dallas, TX	Passenger	Bell 206B II	Substantial	Serious	Loss of power(total) - non-mechanical
9/16	Point Hope, AK	Passenger	Cessna P210N	Substantial	Serious	Loss of control - in flight
9/17	Long Beach, CA	Passenger	Bell 206B	Substantial	Minor	failure/malfunction
9/17	Mountain View, WY	Cargo	Aerospatiale SA315B	Substantial	None	Loss of power(total) - mech failure/malfunction
9/18	Boca Raton, FL	Cargo	LAMA Douglas DC3	Substantial	None	Loss of power(total) - non-mechanical
9/21	Dallas, TX	Cargo	Beech 95-055	Destroyed	Minor	Loss of power(total) - non-mechanical
9/22	Chugisk, AK	Cargo	Cessna 188	Substantial	None	In flight collision with object
9/22	Unionville, PA	Passenger	Sikorsky S-76A	Substantial	Serious	Airframe/component/system failure/malfunction
9/25	Mexican Hat, UT	Passenger	Cessna T207A	Substantial	None	Loss of power(total) - non-mechanical
9/26	West Delta 105, GM	Cargo	Bell 206L-1	Substantial	None	Loss of power(total) - mech failure/malfunction
9/27	Orlando, FL	Cargo	Cessna 210N	Destroyed	None	Loss of control - in flight
10/02	Austin, NV	Pax and Cargo	Cessna R182	Destroyed	Fatal (3)	In flight encounter with weather

Table 52 - List of Accidents (Continued)
 Nonscheduled 14 CFR 135 Operations
 1984

Date	Location	Type of Operation	Aircraft Type	Aircraft Damage	Degree of Injury	First Occurrence
10/03	Greenbush, MN	Passenger	Piper PA-23-250	Substantial	None	Fire
10/05	East Glacier, MT	Passenger	Aerospatiale SE316B	Substantial	Minor	Loss of control - in flight
10/07	Moultonboro, NH	Passenger	Bell 47G3-B1	Substantial	None	Loss of power(total) - mech failure/malfunction
10/14	Hinchinbrook, AK	Passenger	Cessna U206	Substantial	None	Airframe/component/system failure/malfunction
10/16	Selawik, AK	Passenger	Beech 3NMM	Substantial	None	In flight collision with terrain
10/20	Pascagoula, MS	Passenger	Bell 222	Substantial	Minor	In flight collision with object
10/24	Belleview, MI	Cargo	Beech G-18S	Substantial	None	Loss of control - on ground
10/26	Lima, MT	Passenger	Aerospatiale SA316B	Substantial	Minor	Loss of control - in flight
10/30	Lane City, TX	Passenger	Bell 206B	Destroyed	Serious	Airframe/component/system failure/malfunction
10/31	Charlotte, NC	Cargo	Smith Aerostar 600A	Substantial	None	Nose gear collapsed
11/01	Laconia, NH	Cargo	Beech G18S	Destroyed	Minor	Loss of control - in flight
11/05	Denver, CO	Passenger	Piper PA-34-200T	Substantial	None	On ground collision with object
11/10	Waterford, CT	Passenger	Piper PA-28-181	Substantial	None	On ground collision with object
11/12	E Cameron Blk 2, GM	Pax and Cargo	Bell Helicopter Textron 206L-1	Substantial	Serious	Loss of power(total) - non-mechanical
11/18	Snowville, UT	Passenger	Cessna 182P	Destroyed	Minor	Loss of power(total) - mech failure/malfunction
11/20	Koliganek, AK	Pax and Cargo	Cessna 207	Substantial	Minor	OVERRUN
11/25	Nampa, ID	Passenger	Bell 47G-3B-2	Substantial	None	Loss of power(total) - non-mechanical
11/27	Mason City, IA	Passenger	Cessna 421B	Substantial	None	Loss of control - in flight
11/30	Pocatello, ID	Cargo	Cessna 310R	Substantial	Minor	Loss of power(total) - non-mechanical
12/03	Boise, ID	Cargo	Cessna 402C	Substantial	None	In flight collision with object
12/06	None, AK	Passenger	Cessna 185	Substantial	None	Loss of control - on ground
12/08	Spanish Fork, UT	Passenger	Hughes 369D	Substantial	None	Loss of power(total) - non-mechanical
12/10	Norwood, MA	Passenger	Beech 58TC	Substantial	None	OVERRUN
12/11	Pontiac, MI	Pax and Cargo	Piper PA-31	Destroyed	Fatal (2)	Airframe/component/system failure/malfunction
12/13	Norfolk, VA	Cargo	Beech D18S	Destroyed	Serious	Loss of power(partial) - non-mechanical
12/14	Odessa, TX	Cargo	Cessna 340	Substantial	None	In flight encounter with weather
12/17	Raton, NM	Pax and Cargo	Cessna 401A	Destroyed	None	Loss of power(partial) - mech failure/malfunction

Table 52 - List of Accidents (Continued)
 Nonscheduled 14 CFR 135 Operations
 1984

Date	Location	Type of Operation	Aircraft Type	Aircraft Damage	Degree of Injury	First Occurrence
12/19	Bellville, MI	Cargo	Beech B-18S	Substantial	None	Loss of control - in flight
12/19	Tonopah, NV	Cargo	Cessna 402B TS	Substantial	None	Loss of power(total) - mech failure/ malfunction
12/22	Rochester, NY	Cargo	Cessna 402B	Destroyed	Fatal (1)	Miscellaneous/other
12/24	San Antonio, TX	Cargo	Beech 95-C55	Substantial	None	In flight collision with terrain
12/26	Kalamazoo, MI	Cargo	Piper Aerostar 600	Substantial	None	Loss of control - on Ground
12/28	Houma, LA	Passenger	Bell 206L-1	Substantial	None	In flight encounter with weather
12/31	Jackson, WY	Passenger	Bell 206-L3	Substantial	Minor	Loss of control - in flight

Table 53 - PERSONS BY ROLE AND DEGREE OF INJURY
 NONSCHEDULED 14 CFR 135 OPERATIONS
 1984

Role of Person	Degree of Injury				Total
	Fatal	Serious	Minor	None	
Pilot	23	11	17	98	149
Copilot	4	0	0	9	13
Other crew	3	1	0	1	5
Passenger	22	20	61	146	249
Total aboard	52	32	78	254	416
Other aircraft*	0	1	0	5	6
Other ground	0	2	6	2	10
Grand total	52	35	84	261	432
Percent	12.0	8.1	19.4	60.4	

* 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 54 - AIRCRAFT BY DAMAGE AND DEGREE OF INJURY
 NONSCHEDULED 14 CFR 135 OPERATIONS
 1984

Aircraft damage	Degree of injury				Aircraft	
	None	Minor	Ser	Fatal	No.	Percent
None	0	0	1	1	2	1.4
Minor	0	0	1	0	1	0.7
Substantial	76	17	10	1	104	70.7
Destroyed	4	8	7	21	40	27.2
Aircraft						
Number -	80	25	19	23	147	
Percent -	54.4	17.0	12.9	15.6		

**Table 55 - AIRCRAFT BY FIRST OCCURRENCE AND DEGREE OF INJURY
NON SCHEDULED 14 CFR 135 OPERATIONS
1984**

Type of first occurrence	Degree of injury				Aircraft	
	None	Minor	Ser	Fatal	No.	Percent
Airframe/component/system failure/malfunction	6	0	3	1	10	6.8
Fire	2	2	0	0	4	2.7
Main gear collapsed	6	0	0	0	6	4.1
Nose gear collapsed	2	0	0	0	2	1.4
Hard landing	1	0	0	0	1	0.7
In flight collision with object	6	3	1	3	13	8.8
In flight collision with terrain	4	0	1	2	7	4.8
In flight encounter with weather	4	1	0	5	10	6.8
Loss of control - in flight	7	5	2	5	19	12.9
Loss of control - on ground	5	0	0	1	6	4.1
On ground collision with object	10	1	1	0	12	8.2
On ground collision with terrain	1	0	0	0	1	0.7
Overrun	2	2	1	0	5	3.4
Loss of power	2	1	0	0	3	2.0
Loss of power(total) - mech failure/malfunction	7	3	1	1	12	8.2
Loss of power(partial) - mech failure/malfunction	2	1	0	1	4	2.7
Loss of power(total) - non-mechanical	9	5	6	1	21	14.3
Loss of power(partial) - non-mechanical	1	1	1	0	3	2.0
Propeller/rotor contact	0	0	2	0	2	1.4
Roll over	0	0	0	1	1	0.7
Undershoot	2	0	0	0	2	1.4
Missing aircraft	0	0	0	1	1	0.7
Miscellaneous/other	1	0	0	1	2	1.4
Aircraft						
Number -	80	25	19	23	147	
Percent -	54.4	17.0	12.9	15.6		

Table 55 - AIRCRAFT BY FIRST OCCURRENCE AND DEGREE OF INJURY
 NONSCHEDULED 14 CFR 135 OPERATIONS
 1984

Type of first occurrence	Degree of injury				Aircraft	
	None	Minor	Ser	Fatal	No.	Percent
Airframe/component/system failure/malfunction	6	0	3	1	10	6.8
Fire	2	2	0	0	4	2.7
Main gear collapsed	6	0	0	0	6	4.1
Nose gear collapsed	2	0	0	0	2	1.4
Hard landing	1	0	0	0	1	0.7
In flight collision with object	6	3	1	3	13	8.8
In flight collision with terrain	4	0	1	2	7	4.8
In flight encounter with weather	4	1	0	5	10	6.8
Loss of control - in flight	7	5	2	5	19	12.9
Loss of control - on ground	5	0	0	1	6	4.1
On ground collision with object	10	1	1	0	12	8.2
On ground collision with terrain	1	0	0	0	1	0.7
Overrun	2	2	1	0	5	3.4
Loss of power	2	1	0	0	3	2.0
Loss of power(total) - mech failure/malfunction	7	3	1	1	12	8.2
Loss of power(partial) - mech failure/malfunction	2	1	0	1	4	2.7
Loss of power(total) - non-mechanical	9	5	6	1	21	14.3
Loss of power(partial) - non-mechanical	1	1	1	0	3	2.0
Propeller/rotor contact	0	0	2	0	2	1.4
Roll over	0	0	0	1	1	0.7
Undershoot	2	0	0	0	2	1.4
Missing aircraft	0	0	0	1	1	0.7
Miscellaneous/other	1	0	0	1	2	1.4
Aircraft						
Number -	80	25	19	23	147	
Percent -	54.4	17.0	12.9	15.6		

Table 56 - AIRCRAFT BY FIRST OCCURRENCE AND DAMAGE
 NONSCHEDULED 14 CFR 135 OPERATIONS
 1984

Type of first occurrence	Aircraft damage				Aircraft	
	None	Minor	Subs	Dest	No.	Percent
Airframe/component/system failure/malfunction	0	0	7	3	10	6.8
Fire	0	0	2	2	4	2.7
Main gear collapsed	0	0	6	0	6	4.1
Nose gear collapsed	0	0	2	0	2	1.4
Hard landing	0	0	1	0	1	0.7
In flight collision with object	0	0	9	4	13	8.8
In flight collision with terrain	0	0	4	3	7	4.8
In flight encounter with weather	0	0	5	5	10	6.8
Loss of control - in flight	0	0	11	8	19	12.9
Loss of control - on ground	0	0	5	1	6	4.1
On ground collision with object	0	1	11	0	12	8.2
On ground collision with terrain	0	0	1	0	1	0.7
Overrun	0	0	5	0	5	3.4
Loss of power	0	0	2	1	3	2.0
Loss of power(total) - mech failure/malfunction	0	0	10	2	12	8.2
Loss of power(partial) - mech failure/malfunction	0	0	2	2	4	2.7
Loss of power(total) - non-mechanical	0	0	15	6	21	14.3
Loss of power(partial) - non-mechanical	0	0	2	1	3	2.0
Propeller/rotor contact	1	0	1	0	2	1.4
Roll over	0	0	0	1	1	0.7
Undershoot	0	0	2	0	2	1.4
Missing aircraft	1	0	0	0	1	0.7
Miscellaneous/other	0	0	1	1	2	1.4
Aircraft						
Number -	2	1	104	40	147	
Percent -	1.4	0.7	70.7	27.2		

Table 57 - AIRCRAFT BY FIRST OCCURRENCE AND BROAD PHASE OF OPERATION
 NONSCHEDULED 14 CFR 135 OPERATIONS
 1984

Type of first occurrence	Phase of operation										Aircraft No.	Percent
	Standg	Taxi	Tkoff	Climb	Cruis	Dscnt	Aprch	Lndg	Manvr	Other		
Airframe/component/system failure/malfunction	0	0	1	0	2	0	2	0	3	0	10	6.8
Fire	0	1	0	1	0	0	1	0	0	0	4	2.7
Main gear collapsed	1	1	0	0	0	0	4	0	0	0	6	4.1
Nose gear collapsed	0	0	0	0	0	0	2	0	0	0	2	1.4
Hard landing	0	0	0	0	0	0	1	0	0	0	1	0.7
In flight collision with object	0	0	6	0	1	0	1	2	2	1	0	13
In flight collision with terrain	0	0	0	0	0	1	1	4	1	0	0	7
In flight encounter with weather	0	0	1	0	6	1	0	0	2	0	0	10
Loss of control - in flight	0	0	8	0	2	0	4	2	2	1	0	19
Loss of control - on ground	1	0	2	0	0	0	0	3	0	0	0	6
On ground collision with object	4	4	0	0	0	0	0	3	0	0	1	12
On ground collision with terrain	0	0	1	0	0	0	0	0	0	0	1	0.7
Overrun	0	0	3	0	0	0	2	0	0	0	0	5
Loss of power	0	0	1	0	2	0	0	0	0	0	0	3
Loss of power(total) - mech failure/malfunction	0	0	1	2	5	2	0	1	1	0	0	12
Loss of power(partial) - mech failure/malfunction	0	0	2	0	2	0	0	0	0	0	0	4.2
Loss of power(total) - non-mechanical	0	0	5	2	6	4	3	0	1	0	0	21
Loss of power(partial) - non-mechanical	0	0	1	1	0	0	1	0	0	0	0	4
Propeller/rotor contact	2	0	0	0	0	0	0	0	0	0	0	2
Roll over	0	0	0	0	0	0	0	1	0	0	0	1
Undershoot	0	0	0	0	0	0	2	0	0	0	0	2
Missing aircraft	0	0	0	0	0	0	0	0	1	0	1	0.7
Miscellaneous/other	0	0	2	0	0	0	0	0	0	0	0	2
Aircraft												147
Number -	8	6	34	6	27	8	14	28	9	6	1	
Percent -	5.4	4.1	23.1	4.1	18.4	5.4	9.5	19.0	6.1	4.1	0.7	

Table 58 - AIRCRAFT BY PHASE OF OPERATION AND DEGREE OF INJURY
 NONSCHEDULED 14 CFR 135 OPERATIONS
 1984

Phase of operation	Degree of injury				Aircraft	
	None	Minor	Ser	Fatal	No.	Percent
Standing - starting engine(s)	1	0	1	1	3	2.0
Standing - engine(s) operating	2	1	1	0	4	2.7
Standing - idling rotors	1	0	0	0	1	0.7
Taxi - to takeoff	3	0	0	0	3	2.0
Taxi - from landing	3	0	0	0	3	2.0
Takeoff	2	1	1	1	5	3.4
Takeoff - ground run	3	2	1	0	6	4.1
Takeoff - initial climb	11	7	2	3	23	15.6
Climb	1	0	1	0	2	1.4
Climb - to cruise	0	2	2	0	4	2.7
Cruise	4	0	0	3	7	4.8
Cruise - normal	9	6	2	3	20	13.6
Descent	0	1	0	1	2	1.4
Descent - normal	4	0	0	1	5	3.4
Descent - emergency	1	0	0	0	1	0.7
Approach	1	0	1	0	2	1.4
Approach - VFR pattern - base to final	1	0	0	0	1	0.7
Approach - VFR pattern - final approach	4	1	1	0	6	4.1
Approach - go-around (VFR)	0	0	0	1	1	0.7
Approach - FAF/outer marker to threshold (IFR)	0	0	2	0	2	1.4
Approach - circling(IFR)	0	1	0	0	1	0.7
Approach - missed approach (IFR)	0	0	0	1	1	0.7
Landing	2	0	0	0	2	1.4
Landing - flare/touchdown	10	2	0	1	13	8.8
Landing - roll	13	0	0	0	13	8.8
Maneuvering	2	0	2	3	7	4.8
Hover	1	1	0	0	2	1.4
Other	0	0	1	0	1	0.7
Unknown	1	0	1	4	6	4.1
Aircraft						
Number -	80	25	19	23	147	
Percent -	54.4	17.0	12.9	15.6		

Table 59 - AIRCRAFT BY PHASE OF OPERATION AND AIRCRAFT DAMAGE
 NONSCHEDULED 14 CFR 135 OPERATIONS
 1984

Phase of operation	Aircraft damage				Aircraft	
	None	Minor	Subs	Dest	No.	Percent
Standing - starting engine(s)	1	0	1	1	3	2.0
Standing - engine(s) operating	0	0	4	0	4	2.7
Standing - idling rotors	0	0	1	0	1	0.7
Taxi - to takeoff	0	0	3	0	3	2.0
Taxi - from landing	0	0	3	0	3	2.0
Takeoff	0	0	4	1	5	3.4
Takeoff - ground run	0	0	5	1	6	4.1
Takeoff - initial climb	0	0	17	6	23	15.6
Climb	0	0	1	1	2	1.4
Climb - to cruise	0	0	2	2	4	2.7
Cruise	0	0	4	3	7	4.8
Cruise - normal	0	0	11	9	20	13.6
Descent	0	0	0	2	2	1.4
Descent - normal	0	0	5	0	5	3.4
Descent - emergency	0	0	1	0	1	0.7
Approach	0	0	2	0	2	1.4
Approach - VFR pattern - base to final	0	0	1	0	1	0.7
Approach - VFR pattern - final approach	0	0	6	0	6	4.1
Approach - go-around (VFR)	0	0	0	1	1	0.7
Approach - FAF/outer marker to threshold (IFR)	0	0	0	2	2	1.4
Approach - circling(IFR)	0	0	1	0	1	0.7
Approach - missed approach (IFR)	0	0	0	1	1	0.7
Landing	0	0	2	0	2	1.4
Landing - flare/touchdown	0	0	11	2	13	8.8
Landing - roll	0	0	13	0	13	8.8
Maneuvering	0	0	3	4	7	4.8
Hover	0	0	2	0	2	1.4
Other	0	1	0	0	1	0.7
Not reported	1	0	1	4	6	4.1
Aircraft						
Number -	2	1	104	40	147	
Percent -	1.4	0.7	70.7	27.2		

Table 60 - AIRCRAFT BY CONDITION OF LIGHT AND TYPE OF WEATHER
 NONSCHEDULED 14 CFR 135 OPERATIONS
 1984

Condition of light	Type of weather			Aircraft	
	VMC	IMC	Not reptd	No.	Percent
Dawn	5	1	0	6	4.1
Daylight	86	13	2	101	68.7
Night (dark)	22	10	1	33	22.4
Night (bright)	5	0	0	5	3.4
Dusk	1	0	0	1	0.7
Not reported	1	0	0	1	0.7
<hr/>					
Aircraft					
Number -	120	24	3	147	
Percent -	81.6	16.3	2.0		

Table 61 - AIRCRAFT BY TYPE OF OPERATION AND DEGREE OF INJURY
 NONSCHEDULED 14 CFR 135 OPERATIONS
 1984

Type of Operation	Degree of Injury				Aircraft	
	Fatal	Serious	Minor	None	No.	Percent
Domestic Passenger	9	14	14	39	76	51.7
Domestic Cargo	11	3	8	31	53	36.1
Domestic Passenger/Cargo	2	2	3	6	13	8.8
Domestic Mail	0	0	0	2	2	1.4
International Passenger	1	0	0	2	3	2.0
<hr/>						
Aircraft						
Number -	23	19	25	80	147	
Percent -	15.6	12.9	17.0	54.4		

Table 62 - AIRCRAFT BY PROXIMITY TO AIRPORT AND FLIGHT PLAN
 NONSCHEDULED 14 CFR 135 OPERATIONS
 1984

Proximity to Airport	Type of Flight Plan				Aircraft	
	VFR	IFR	None	NRept	No.	Percent
On Airport	12	28	12	1	53	36.1
On Airstrip	3	0	1	0	4	2.7
Within 5 SM	7	9	2	0	18	12.2
5 SM Or Greater	3	3	5	0	11	7.5
Not Reported	23	9	28	1	61	41.5
Aircraft						
Number -	48	49	48	2	147	
Percent -	32.7	33.3	32.7	1.4		

Table 63 - AIRCRAFT BY OCCURRENCE OF FIRE AND AIRCRAFT DAMAGE
 NONSCHEDULED 14 CFR 135 OPERATIONS
 1984

Aircraft fire	Aircraft damage				Aircraft	
	None	Minor	Subs	Dest	No.	Percent
None	1	1	99	29	130	88.4
In-flight	0	0	0	4	4	2.7
On ground	0	0	5	6	11	7.5
Not reported	1	0	0	1	2	1.4
Aircraft						
Number -	2	1	104	40	147	
Percent -	1.4	0.7	70.7	27.2		

Table 64 - AIRCRAFT BY OCCURRENCE OF FIRE AND DEGREE OF INJURY
 NONSCHEDULED 14 CFR 135 OPERATIONS
 1984

Aircraft fire	Degree of injury				Aircraft	
	None	Minor	Ser	Fatal	No.	Percent
None	74	22	19	15	130	88.4
In-flight	1	3	0	0	4	2.7
On ground	5	0	0	6	11	7.5
Not reported	0	0	0	2	2	1.4
Aircraft						
Number -	80	25	19	23	147	
Percent -	54.4	17.0	12.9	15.6		

Table 65 - BROAD CAUSE/FACTOR ASSIGNMENTS*
 NONSCHEDULED 14 CFR 135 OPERATIONS
 1984

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	Fatal Accidents	All Accidents	Fatal Accidents
Pilot	16	96	7	45	16	103	3	39	
Powerplant	3	34	0	10			4		35
Personnel	2	27	2	12			5		33
Terrain	0	1	5	32			5		32
Miscellaneous	0	0	5	32			5		29
Weather	1	3	5	28			6		21
Landing Gear	0	16	1	6			1		12
Undetermined	4	12	0	0			4		10
Airframe	1	3	3	7			4		9
Airport/Airways/Facilities	0	1	0	8			0		6
Systems	0	0	2	6			2		4
Rotorcraft	0	3	0	2			0		2
Instruments/Equipment/Accessories	0	0	2	2			2		
Number of Aircraft				23			147		

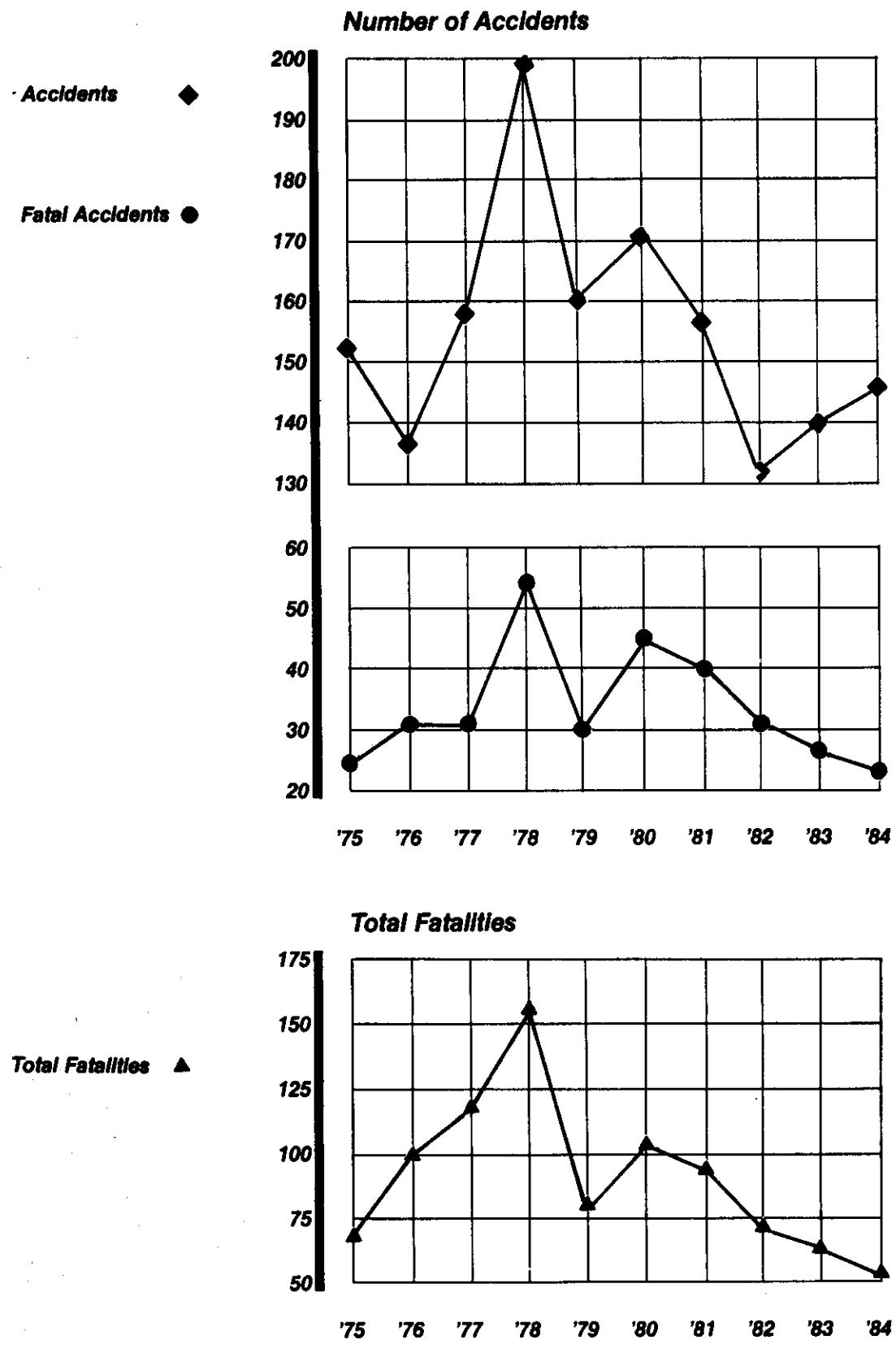
* Multiple causes and factors may be assigned in an accident

Table 66 - ACCIDENTS, FATAL ACCIDENTS, FATALITIES, AND RATES
 NONSCHEDULED 14 CFR 135 OPERATIONS
 1975 - 1984

Year	Accidents	Fatal Accidents	Total	Fatalities	
				Aboard Aircraft In This Category	
1975	152	24	69	69	
1976	137	31	100	97	
1977	158	31	118	115	
1978	198	54	155	152	
1979	160	30	77	73	
1980	171	46	105	101	
1981	157	40	94	92	
1982	132	31	72	72	
1983	140	27	62	57	
1984	146	23	52	52	

Year	Hours Flown	Accident Rate per 100,000 Aircraft Hours Flown	
		Total	Fatal
1975	2,526,271	6.02	0.95
1976	2,703,203	5.07	1.15
1977	3,304,220	4.78	0.94
1978	3,545,753	5.58	1.52
1979	3,684,321	4.34	0.81
1980	3,617,724	4.73	1.27
1981	2,895,827	5.42	1.38
1982	3,256,763	4.05	0.95
1983	2,574,883	5.44	1.05
1984	3,079,007	4.74	0.75

**FIG-5 Accidents, Fatal Accidents and Fatalities
Nonscheduled 14 CFR 135 Operations**



**FIG-6 Accident Rates
Nonscheduled 14 CFR 135 Operations**

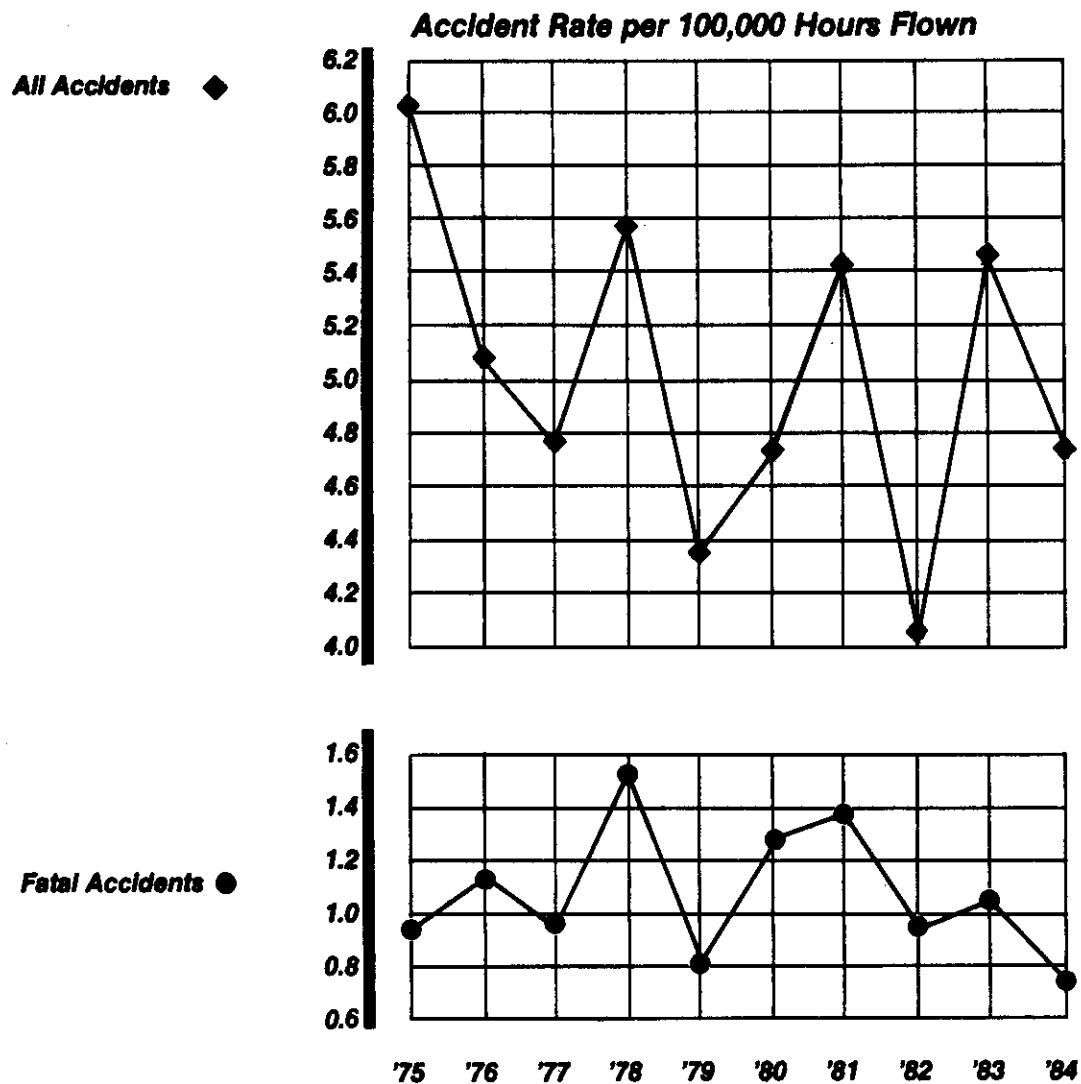


Table 67 - MOST PREVALENT FIRST OCCURRENCES IN ALL ACCIDENTS
 NONSCHEDULED 14 CFR 135 OPERATIONS
 1984 AND 1979 - 1983

Type of Occurrence	1984		1979 - 1983	
	No.	Percent	Mean	Percent
Collision with object/terrain	33	22.4	43.0	28.0
Loss of power	43	29.3	32.4	21.1
Loss of control - in flight	19	12.9	14.2	9.3
Loss of control - on ground	6	4.1	13.8	9.0
Airframe/component/system fail/malf	10	6.8	10.0	6.5
Encounter with weather/turbulence	10	6.8	7.2	4.7
Gear collapsed/retracted	8	5.4	6.4	4.2
Miscellaneous	7	4.8	5.4	3.5
Hard landing	1	.7	5.0	3.3
Midair collision	0	.0	3.4	2.2
Roll over	1	.7	3.0	2.0
Nose over/down	0	.0	2.8	1.8
Undershoot	2	1.4	2.4	1.6
Prop/rotor contact	2	1.4	2.2	1.4
(All other types)	5	3.4	2.2	1.4
Total	147	100.0	153.4	100.0

Table 68 - MOST PREVALENT FIRST OCCURRENCES IN FATAL ACCIDENTS
 NONSCHEDULED 14 CFR 135 OPERATIONS
 1984 AND 1979 - 1983

Type of Occurrence	1984		1979 - 1983	
	No.	Percent	Mean	Percent
Collision with object/terrain	5	21.7	14.2	40.1
Loss of control - in flight	5	21.7	6.2	17.5
Loss of power	3	13.0	4.6	13.0
Encounter with weather/turbulence	5	21.7	3.2	9.0
Midair collision	0	.0	2.4	6.8
Airframe/component/system fail/malf	1	4.3	1.6	4.5
Prop/rotor contact	0	.0	1.2	3.4
Roll over	1	4.3	.6	1.7
Undetermined	0	.0	.6	1.7
(All other types)	3	13.0	.8	2.3
Total	23	100.0	35.4	100.0

Table 69 - MOST PREVALENT FIRST PHASES OF OPERATION IN ALL ACCIDENTS
 NONSCHEDULED 14 CFR 135 OPERATIONS
 1984 AND 1979 - 1983

Phase of Operation	1984		1979 - 1983	
	No.	Percent	Mean	Percent
Landing	28	19.0	37.2	24.3
Takeoff	34	23.1	33.2	21.6
Cruise	27	18.4	29.0	18.9
Approach	14	9.5	22.0	14.3
Maneuvering	9	6.1	8.4	5.5
Taxi	6	4.1	8.2	5.3
Descent	8	5.4	6.4	4.2
Climb	6	4.1	4.8	3.1
Standing	8	5.4	3.2	2.1
Other	7	4.8	1.0	.7
Total	147	100.0	153.4	100.0

Table 70 - MOST PREVALENT FIRST PHASES OF OPERATION IN FATAL ACCIDENTS
 NONSCHEDULED 14 CFR 135 OPERATIONS
 1984 AND 1979 - 1983

Phase of Operation	1984		1979 - 1983	
	No.	Percent	Mean	Percent
Approach	2	8.7	9.0	25.4
Cruise	6	26.1	8.4	23.7
Takeoff	4	17.4	6.6	18.6
Descent	2	8.7	3.0	8.5
Maneuvering	3	13.0	3.0	8.5
Climb	0	.0	1.6	4.5
Standing	1	4.3	1.4	4.0
Landing	1	4.3	1.2	3.4
Other	4	17.4	1.0	2.8
Taxi	0	.0	.2	.6
Total	23	100.0	35.4	100.0

Table 71 - BROAD CAUSE/FACTOR ASSIGNMENTS IN ALL ACCIDENTS
 NONSCHEDULED 14 CFR 135 OPERATIONS
 1984 AND 1979 - 1983

Broad Cause/Factor	1984		1979 - 1983	
	No.	Percent	Mean	Percent
Pilot	103	70.1	113.4	73.9
Weather	29	19.7	55.4	36.1
Terrain	33	22.4	40.2	26.2
Personnel	35	23.8	29.6	19.3
Powerplant	39	26.5	28.6	18.6
Miscellaneous	32	21.8	23.2	15.1
Airport/Airways/Facilities	9	6.1	18.4	12.0
Landing Gear	21	14.3	14.2	9.3
Undetermined	12	8.2	6.6	4.3
Systems	6	4.1	5.8	3.8
Rotorcraft	4	2.7	5.6	3.7
Airframe	10	6.8	3.6	2.3
Instruments/Equipment/Accessories	2	1.4	3.2	2.1
Number of Aircraft	147		153.4	

Table 72 - BROAD CAUSE/FACTOR ASSIGNMENTS IN FATAL ACCIDENTS
 NONSCHEDULED 14 CFR 135 OPERATIONS
 1984 AND 1979 - 1983

Broad Cause/Factor	198		1979 - 1983	
	No.	Percent	Mean	Percent
Pilot	16	69.6	29.0	81.9
Weather	6	26.1	18.8	53.1
Personnel	4	17.4	7.2	20.3
Terrain	5	21.7	7.0	19.8
Miscellaneous	5	21.7	5.0	14.1
Powerplant	3	13.0	3.8	10.7
Undetermined	4	17.4	3.6	10.2
Instruments/Equipment/Accessories	2	8.7	1.4	4.0
Rotorcraft	0	.0	1.2	3.4
Airframe	4	17.4	.8	2.3
Landing Gear	1	4.3	.6	1.7
Systems	2	8.7	.4	1.1
Airport/Airways/Facilities	0	.0	.2	.6
Number of Aircraft	23		35.4	

BY THE NATIONAL TRANSPORTATION SAFETY BOARD

/s/ JIM BURNETT
Chairman

/s/ PATRICIA A. GOLDMAN
Vice Chairman

/s/ JOHN K. LAUBER
Member

/s/ JOSEPH NALL
Member

APPENDIX A -- 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	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 particular phase of the flight or operation will be that phase of flight in which the first occurrence or circumstance occurred. In the event that there was more than one occurrence in one operational phase, the same phase is recorded for each of these occurrences.

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 better than the formerly-used "Accident Types". It had long been recognized that several of the pre-1982 Accident Types (e.g., ground loop/swerve) were events which do not necessarily produce either injury or damage. Therefore, the nomenclature was changed to Occurrences (which does not imply injury or damage). Some Accident Types were retained as Occurrences, others were eliminated or combined with others to become one or more Occurrences. In some cases several Occurrences replace a single Accident Type.

To describe an accident, up to seven Occurrences may be used, as compared to only two Accident Types in the pre-1982 data base. The Occurrences are only the highest level classification mechanism 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 since 1982 to describe the probable cause of, and related factors in an accident. Appendices B, C and D contain cause/factor tables for 1983 air carrier accidents. Each line of those tables depicts either a specific Finding or an aggregation of Findings (those for which frequencies are enclosed in parentheses). The example below is taken from a 1982 Part 121 accident record and illustrates the relationship between Occurrences and Findings. Findings 1 and 2 were cited as the probable cause of the accident. Finding 3 was cited as a factor.

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

Previous editions of this annual review of air carrier accident data included tables comparing accidents in the current year with mean numbers of accidents in the preceding five-year period on an Accident Type basis. To perpetuate this practice to the extent feasible, Occurrences and Accident Types have each been grouped as necessary in order to produce comparable (if not equivalent) "Historical Comparison Categories". All tables in this report which are entitled "Most Prevalent Occurrences ..." employ this categorization of Occurrences and Accident Types. The categories are defined in the three-page table at the end of Appendix A.

TYPES OF WEATHER CONDITIONS: The types of weather conditions (VMS/IMS) 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.

HISTORICAL COMPARISON CATEGORY	PRE-1982 ACCIDENT TYPES	1982 AND LATER OCCURRENCES
Abrupt maneuver	Evasive maneuver	Abrupt maneuver
Altitude deviation, uncontrolled	Uncontrolled alt deviation	Altitude deviation, uncontrolled
Airframe/component/system fail/malf	Airframe failure - in flight - on ground Propeller/rotor failure - propeller - tail rotor - main rotor	Airframe/component/system failure/malf
Collision with object/terrain	Wheels-up landing Wheels-down landing in water Collision with ground/water-controlled Bird strike Collision between aircraft-one airborne - both on ground Collided with: wires/poles; trees; residence/s; building/s; fence; fenceposts; electronic towers; runway or approach lights; airport hazard; animals; crop; flagman; loader; ditches; snowbank; parked aircraft (unattended); automobile; dirt bank; other	In flight collision with object In flight collision with terrain On ground collision with object On ground collision with terrain Gear not extended
Ditching	Ditching	Ditching
Dragged wing, rotor, pod, float	Dragged wingtip, pod, or float	Dragged wing, rotor, pod or float
Encounter with weather/turbulence	Turbulence Hail damage to aircraft Lightning strike	In flight encounter with weather On ground encounter with weather vortex turbulence encountered

HISTORICAL COMPARISON CATEGORY	PRE-1982 ACCIDENT TYPES	1982 AND LATER OCCURRENCES
Engine tearaway	Engine tearaway	Engine tearaway
Fire/Explosion	Fire or explosion - in flight - on ground	Fire/explosion Fire Explosion
Gear collapsed/retracted	Gear collapsed Gear retracted	Gear collapsed Main gear collapsed Nose gear collapsed Tail gear collapsed Complete gear collapsed Other gear collapsed
Hard landing	Hard landing	Hard landing
Loss of control - in flight	Collision with ground/water- uncontrolled	Loss of control - in flight
	Stall - Spin - Spiral - Mash	
Loss of control - on ground	Ground-water loop-swerve	Loss of control - on ground
Loss of power	Engine failure or malfunction	Loss of power Loss of power (total) - mech failure/malfunction
		Loss of power (partial) - mech failure/malfunction
		Loss of power (total) - non-mech
		Loss of power (partial) - non-mech
Midair collision	Collision between aircraft- both in flight	Midair collision

HISTORICAL COMPARISON CATEGORY	PRE-1982 ACCIDENT TYPES	1982 AND LATER OCCURRENCES
Miscellaneous	Miscellaneous/Other Overshoot	Cargo shift Decompression Forced landing Hazardous materials leak/spill (fumes/smoke) Near collision between aircraft Overrun Miscellaneous/other
Missing aircraft	Missing Acft not recovered	Missing aircraft
Nose over/down	Nose over/down	Nose down Nose over
Prop blast or jet exhaust/suction	Jet intake/exh acdnt to pers propeller/jet/rotor blast	Propeller blast or jet exhaust/suction
Prop/rotor contact	Prop rotor acdnt to person	Propeller/rotor contact
Roll over	Roll over	Roll over
Undershoot	Undershoot	Undershoot
Undetermined	Undetermined	Undetermined

APPENDIX B

CAUSE/FACTOR TABLE
14 CFR 121, 125, 127 ACCIDENTS

CAUSE/FACTOR TABLE
14 CFR 121 125 127 OPERATIONS
1984

	FATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
AIRCRAFT, ENVIRONMENT, HUMAN PERFORMANCE						
AIRCRAFT	(3)	(1)	(4)	(28)	(34)	(62)
STRUCTURE	(1)	(0)	(1)	(11)	(3)	(14)
NACELLE/PYLON	(0)	(0)	(0)	(6)	(1)	(7)
NACELLE/PYLON	(0)	(0)	(0)	(1)	(0)	(1)
ICE	(0)	(0)	(0)	(1)	(0)	(1)
0	0	0	1	0	0	1
LANDING GEAR	(0)	(0)	(0)	(5)	(1)	(6)
LANDING GEAR,NOSE GEAR ASSEMBLY	(0)	(0)	(0)	(1)	(0)	(1)
OVERLOAD	0	0	0	1	0	1
LANDING GEAR,EMERGENCY EXTENSION ASSEMBLY	(0)	(0)	(0)	(1)	(0)	(1)
INOPERATIVE	0	0	0	1	0	1
LANDING GEAR,TIRE	(0)	(0)	(0)	(1)	(1)	(2)
FAILURE,TOTAL	0	0	0	1	0	1
OVERTEMPERATURE	0	0	0	0	1	1
LANDING GEAR,GEAR LOCKING MECHANISM	(0)	(0)	(0)	(1)	(0)	(1)
UNLOCKED	0	0	0	1	0	1
LANDING GEAR,NORMAL RETRACTION/EXTENSION ASSEMBLY	(0)	(0)	(0)	(1)	(0)	(1)
INOPERATIVE	0	0	0	1	0	1
SYSTEMS						
HYDRAULIC SYSTEM	(1)	(0)	(1)	(2)	(0)	(2)
HYDRAULIC SYSTEM,LINE	(0)	(0)	(0)	(1)	(0)	(1)
FAILURE,TOTAL	0	0	0	(1)	(0)	(1)
FLIGHT/NAV INSTRUMENTS						
FLIGHT/NAV INSTRUMENTS,ATTITUDE GYRO	(1)	(0)	(1)	(1)	(0)	(1)
UNDETERMINED	1	0	1	1	0	1
POWERPLANT						
ENGINE ASSEMBLY	(0)	(0)	(0)	(3)	(2)	(5)
ENGINE ASSEMBLY	(0)	(0)	(0)	(2)	(2)	(4)
FAILURE,TOTAL	(0)	(0)	(0)	(2)	(0)	(2)
FIRE	0	0	0	1	0	1
0	0	0	1	0	0	1
ENGINE ASSEMBLY,CONNECTING ROD	(0)	(0)	(0)	(0)	(1)	(1)
FAILURE,TOTAL	0	0	0	0	1	1
ENGINE ASSEMBLY,PISTON	(0)	(0)	(0)	(0)	(1)	(1)
FAILURE,TOTAL	0	0	0	0	1	1
MISCELLANEOUS						
MISCELLANEOUS	(0)	(0)	(0)	(1)	(0)	(1)
ICE	0	0	0	1	0	1
AIRCRAFT ENVIRONMENT						
AIRPORT	(0)	(0)	(0)	(0)	(3)	(3)
AIRPORT FACILITIES	(0)	(0)	(0)	(0)	(1)	(1)
AIRPORT FACILITIES	(0)	(0)	(0)	(0)	(1)	(1)
INADEQUATE	(0)	(0)	(0)	(0)	(1)	(1)
0	0	0	0	0	1	1
TERRAIN/RUNWAY						
DITCH	(0)	(0)	(0)	(0)	(2)	(2)
MOUNTAINOUS/HILLY	0	0	0	0	1	1
0	0	0	0	0	1	1
ENVIRONMENTAL CONDITIONS						
WEATHER CONDITION						
BELOW APPROACH MINIMUMS	(0)	(1)	(1)	(5)	(17)	(22)
0	(0)	(0)	(0)	(5)	(15)	(20)
CLOUDS	0	0	0	0	1	1
GUSTS	0	0	0	0	1	1
HAIL	0	0	0	0	2	2
HIGH WIND	0	0	0	0	1	1
0	0	0	0	0	1	1
MOUNTAIN WAVE	0	0	0	1	0	1
RAIN	0	0	0	0	2	2
TURBULENCE,CLEAR AIR	0	0	0	1	0	1
TURBULENCE IN CLOUDS	0	0	0	1	1	2
TURBULENCE(THUNDERSTORMS)	0	0	0	1	1	2
0	0	0	0	0	2	2
THUNDERSTORM						
WINDSHEAR	0	0	0	1	1	2
UNFAVORABLE WIND	0	0	0	0	2	2
LIGHT CONDITION						
	(0)	(1)	(1)	(0)	(1)	(1)

CAUSE/FACTOR TABLE
14 CFR 121 125 127 OPERATIONS
1984

	FATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
AIRCRAFT, ENVIRONMENT, HUMAN PERFORMANCE (Continued)						
ENVIRONMENTAL CONDITIONS (Continued)						
LIGHT CONDITION (Continued)						
DARK NIGHT	0	1	1	0	1	1
OBJECT	(0)	(0)	(0)	(0)	(1)	(1)
APPROACH LIGHT/NAVAID	0	0	0	0	1	1
HUMAN PERFORMANCE	(2)	(0)	(2)	(12)	(11)	(23)
AIRCRAFT	(0)	(0)	(0)	(3)	(4)	(7)
LANDING GEAR	(0)	(0)	(0)	(1)	(0)	(1)
LANDING GEAR	(0)	(0)	(0)	(1)	(0)	(1)
IMPROPER USE OF	(0)	(0)	(0)	(1)	(0)	(1)
COPILOT	0	0	0	1	0	1
POWERPLANT CONTROLS	(0)	(0)	(0)	(0)	(1)	(1)
PROPELLER FEATHERING	(0)	(0)	(0)	(0)	(1)	(1)
NOT POSSIBLE	(0)	(0)	(0)	(0)	(1)	(1)
NO PERSON SPECIFIED	0	0	0	0	1	1
ANTI-ICE/DE-ICE SYSTEM	(0)	(0)	(0)	(1)	(0)	(1)
ANTI-ICE/DE-ICE SYSTEM	(0)	(0)	(0)	(1)	(0)	(1)
IMPROPER USE OF	(0)	(0)	(0)	(1)	(0)	(1)
NO PERSON SPECIFIED	0	0	0	1	0	1
MISCELLANEOUS EQUIPMENT	(0)	(0)	(0)	(1)	(3)	(4)
SEAT BELT	(0)	(0)	(0)	(1)	(2)	(3)
IMPROPER USE OF	(0)	(0)	(0)	(0)	(2)	(2)
FLIGHT ATTENDANT	0	0	0	0	1	1
PASSENGER	0	0	0	0	1	1
NOT USED	(0)	(0)	(0)	(1)	(0)	(1)
PASSENGER	0	0	0	1	0	1
SEAT BELT SIGN	(0)	(0)	(0)	(0)	(1)	(1)
DELAYED	(0)	(0)	(0)	(0)	(1)	(1)
PILOT IN COMMAND	0	0	0	0	1	1
OPERATIONS						
PLANNING-DECISION	(2)	(0)	(2)	(9)	(7)	(16)
AIRCRAFT PREFLIGHT	(0)	(0)	(0)	(3)	(3)	(6)
INADEQUATE	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	(0)	(0)	(0)	(1)	(0)	(1)
0	0	0	1	0	1	
IN-FLIGHT PLANNING/DECISION	(0)	(0)	(0)	(1)	(0)	(1)
IMPROPER	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
VISUAL LOOKOUT	(0)	(0)	(0)	(0)	(1)	(1)
NOT POSSIBLE	(0)	(0)	(0)	(0)	(1)	(1)
PILOT IN COMMAND	0	0	0	0	1	1
WEATHER EVALUATION	(0)	(0)	(0)	(0)	(1)	(1)
INACCURATE	(0)	(0)	(0)	(0)	(1)	(1)
PILOT IN COMMAND	0	0	0	0	1	1
FLIGHT INTO KNOWN ADVERSE WEATHER	(0)	(0)	(0)	(0)	(1)	(1)
CONTINUED	(0)	(0)	(0)	(0)	(1)	(1)
PILOT IN COMMAND	0	0	0	0	1	1
IFR PROCEDURE	(0)	(0)	(0)	(1)	(0)	(1)
IMPROPER USE OF	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
METEOROLOGICAL SERVICE	(0)	(0)	(0)	(0)	(1)	(1)
HAZARDOUS WEATHER ADVISORY	(0)	(0)	(0)	(0)	(1)	(1)
IMPROPER	(0)	(0)	(0)	(0)	(1)	(1)
ATC PERSONNEL(DEP/APCH)	0	0	0	0	1	1
AIRCRAFT HANDLING	(2)	(0)	(2)	(4)	(2)	(6)
AIRCRAFT HANDLING	(1)	(0)	(1)	(1)	(0)	(1)
NOT MAINTAINED	(1)	(0)	(1)	(1)	(0)	(1)
PILOT IN COMMAND	1	0	1	1	0	1
DECISION HEIGHT	(0)	(0)	(0)	(1)	(0)	(1)
DISREGARDED	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1

CAUSE/FACTOR TABLE
14 CFR 121 125 127 OPERATIONS
1984

	FATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE FACTOR	TOTAL	CAUSE FACTOR	TOTAL	CAUSE FACTOR	TOTAL
AIRCRAFT, ENVIRONMENT, HUMAN PERFORMANCE (Continued)						
HUMAN PERFORMANCE (Continued)						
OPERATIONS (Continued)						
AIRCRAFT HANDLING (Continued)						
GROUND LOOP/SWERVE	(0)	(0)	(0)	(0)	(1)	(1)
UNCONTROLLED	(0)	(0)	(0)	(0)	(1)	(1)
NO PERSON SPECIFIED	0	0	0	0	1	1
DESIGN STRESS LIMITS OF AIRCRAFT EXCEEDED	(1)	(0)	(1)	(1)	(0)	(1)
PILOT IN COMMAND	(1)	(0)	(1)	(1)	(0)	(1)
1	0	1	1	0	1	1
DIRECTIONAL CONTROL NOT POSSIBLE	(0)	(0)	(0)	(0)	(1)	(1)
NO PERSON SPECIFIED	(0)	(0)	(0)	(0)	(1)	(1)
0	0	0	0	1	1	1
WHEELS UP LANDING PERFORMED	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	(0)	(0)	(0)	(1)	(0)	(1)
0	0	0	1	0	1	1
COMMUNICATIONS/INFORMATION/ATC	(0)	(0)	(0)	(2)	(1)	(3)
RADIO COMMUNICATIONS	(0)	(0)	(0)	(0)	(1)	(1)
EXCESSIVE	(0)	(0)	(0)	(0)	(1)	(1)
NO PERSON SPECIFIED	0	0	0	0	1	1
CREW/GROUP COORDINATION	(0)	(0)	(0)	(1)	(0)	(1)
INADEQUATE	(0)	(0)	(0)	(1)	(0)	(1)
NO PERSON SPECIFIED	0	0	0	1	0	1
PASSENGER BRIEFING	(0)	(0)	(0)	(1)	(0)	(1)
NOT FOLLOWED	(0)	(0)	(0)	(1)	(0)	(1)
PASSENGER	0	0	0	1	0	1
DIRECT UNDERLYING CAUSE FACTORS:						
IMPROPER USE OF PROCEDURE	(1)	(0)	(1)	(2)	(1)	(3)
VISUAL/AURAL PERCEPTION	(0)	(0)	(0)	(1)	(1)	(2)
PILOT IN COMMAND	(0)	(0)	(0)	(1)	(0)	(1)
0	0	0	1	0	1	1
INFORMATION UNCLEAR	(0)	(0)	(0)	(0)	(1)	(1)
ATC PSNL(LCL/GND/CLNC)	0	0	0	0	1	1
IMPROPER USE OF EQUIPMENT/AIRCRAFT	(1)	(0)	(1)	(1)	(0)	(1)
SPATIAL DISORIENTATION	(1)	(0)	(1)	(1)	(0)	(1)
PILOT IN COMMAND	1	0	1	1	0	1
INDIRECT UNDERLYING CAUSE FACTORS:						
INADEQUATE SUBSTANTIATION PROCESS	(0)	(0)	(0)	(0)	(1)	(1)
INADEQUATE DOCUMENTATION	(0)	(0)	(0)	(0)	(1)	(1)
COMPANY/OPERATOR MGMT	0	0	0	0	1	1

APPENDIX C

CAUSE/FACTOR TABLE
SCHEDULED 14 CFR 135 ACCIDENTS

CAUSE/FACTOR TABLE
SCHEDULED 14 CFR 135 OPERATIONS
1984

	FATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
AIRCRAFT, ENVIRONMENT, HUMAN PERFORMANCE	(12)	(14)	(26)	(42)	(50)	(92)
AIRCRAFT	(3)	(1)	(4)	(16)	(7)	(23)
STRUCTURE	(2)	(0)	(2)	(7)	(0)	(7)
LANDING GEAR	(0)	(0)	(0)	(5)	(0)	(5)
LANDING GEAR	(0)	(0)	(0)	(1)	(0)	(1)
UNDETERMINED	0	0	0	1	0	1
LANDING GEAR, NORMAL BRAKE SYSTEM	(0)	(0)	(0)	(2)	(0)	(2)
FAILURE, PARTIAL	0	0	0	1	0	1
INOPERATIVE	0	0	0	1	0	1
LANDING GEAR, NOSEWHEEL STEERING	(0)	(0)	(0)	(1)	(0)	(1)
INOPERATIVE	0	0	0	1	0	1
LANDING GEAR, NORMAL RETRACTION/EXTENSION ASSEMBLY	(0)	(0)	(0)	(1)	(0)	(1)
IMPROPER	0	0	0	1	0	1
FLIGHT CONTROL SYSTEM	(2)	(0)	(2)	(2)	(0)	(2)
FLT CONTROL SYST, ELEVATOR CONTROL	(2)	(0)	(2)	(2)	(0)	(2)
CORRODED	1	0	1	1	0	1
FAILURE, TOTAL	1	0	1	1	0	1
SYSTEMS	(0)	(0)	(0)	(2)	(2)	(4)
ELECTRICAL SYSTEM	(0)	(0)	(0)	(1)	(0)	(1)
ELECTRICAL SYSTEM, ELECTRIC SWITCH	(0)	(0)	(0)	(1)	(0)	(1)
CORRODED	0	0	0	1	0	1
HYDRAULIC SYSTEM	(0)	(0)	(0)	(1)	(1)	(2)
HYDRAULIC SYSTEM, LINE	(0)	(0)	(0)	(1)	(1)	(2)
BURST	0	0	0	1	0	1
CHAFED	0	0	0	0	1	1
MISC ROTORCRAFT	(0)	(0)	(0)	(0)	(1)	(1)
MISC ROTORCRAFT, EMERGENCY FLOATATION GEAR	(0)	(0)	(0)	(0)	(1)	(1)
ENGAGED	0	0	0	0	1	1
POWERPLANT	(0)	(0)	(0)	(2)	(2)	(4)
ENGINE ASSEMBLY	(0)	(0)	(0)	(2)	(0)	(2)
ENGINE ASSEMBLY	(0)	(0)	(0)	(2)	(0)	(2)
FAILURE, PARTIAL	0	0	0	1	0	1
UNDETERMINED	0	0	0	1	0	1
FUEL SYSTEM	(0)	(0)	(0)	(0)	(1)	(1)
FUEL SYSTEM	(0)	(0)	(0)	(0)	(1)	(1)
INCORRECT	0	0	0	0	1	1
ENGINE INSTRUMENTS	(0)	(0)	(0)	(0)	(1)	(1)
ENGINE INSTRUMENTS, FUEL QUANTITY GAGE	(0)	(0)	(0)	(0)	(1)	(1)
FALSE INDICATION	0	0	0	0	1	1
MISCELLANEOUS	(1)	(1)	(2)	(5)	(3)	(8)
FLUID	(1)	(1)	(2)	(5)	(2)	(7)
FLUID, FUEL	(0)	(1)	(1)	(3)	(2)	(5)
EXHAUSTION	0	0	0	1	0	1
LOW LEVEL	0	0	0	0	1	1
STARVATION	0	0	0	2	0	2
WATER	0	1	1	0	1	1
FLUID, HYDRAULIC	(0)	(0)	(0)	(1)	(0)	(1)
LOSS, PARTIAL	0	0	0	1	0	1
FLUID, FUEL GRADE	(1)	(0)	(1)	(1)	(0)	(1)
IMPROPER	1	0	1	1	0	1
AIRCRAFT PERFORMANCE	(0)	(0)	(0)	(0)	(1)	(1)
AIRCRAFT PERFORMANCE, HYDROPLANING CONDITION	(0)	(0)	(0)	(0)	(1)	(1)
WATER	0	0	0	0	1	1
AIRCRAFT ENVIRONMENT	(0)	(2)	(2)	(0)	(10)	(10)
AIRPORT	(0)	(0)	(0)	(0)	(4)	(4)
AIRPORT FACILITIES	(0)	(0)	(0)	(0)	(4)	(4)
AIRPORT FACILITIES, RUNWAY/LANDING AREA CONDITION	(0)	(0)	(0)	(0)	(3)	(3)
DOWNHILL	0	0	0	0	1	1
SLUSH COVERED	0	0	0	0	1	1
WET	0	0	0	0	1	1
AIRPORT FACILITIES, RAMP FACILITIES	(0)	(0)	(0)	(0)	(1)	(1)

**CAUSE/FACTOR TABLE
SCHEDULED 14 CFR 135 OPERATIONS
1984**

	FATAL ACCIDENTS	ALL ACCIDENTS	Cause Factor	Total	Cause Factor	Total
AIRCRAFT, ENVIRONMENT, HUMAN PERFORMANCE (Continued)						
AIRCRAFT ENVIRONMENT (Continued)						
AIRPORT (Continued)						
AIRPORT FACILITIES (Continued)						
AIRPORT FACILITIES, RAMP FACILITIES (Continued)						
CONGESTED	0	0	0	0	1	1
TERRAIN/RUNWAY	(0)	(2)	(2)	(0)	(6)	(6)
WATER	0	0	0	0	1	1
HIGH TERRAIN	0	1	1	0	1	1
MOUNTAINOUS/HILLY	0	1	1	0	1	1
ROUGH/UNEVEN	0	0	0	0	2	2
SNOWBANK	0	0	0	0	1	1
ENVIRONMENTAL CONDITIONS	(0)	(5)	(5)	(1)	(17)	(18)
WEATHER CONDITION	(0)	(3)	(3)	(1)	(13)	(14)
CROSSWIND	0	0	0	0	1	1
CLOUDS	0	1	1	0	1	1
FOG	0	2	2	0	2	2
GUSTS	0	0	0	0	1	1
HIGH WIND	0	0	0	0	1	1
LOW CEILING	0	0	0	0	2	2
OBSCURATION	0	0	0	0	1	1
RAIN	0	0	0	0	1	1
SNOW	0	0	0	0	1	1
TAILWIND	0	0	0	0	1	1
WHITEOUT	0	0	0	0	1	1
WINDSHEAR	0	0	0	1	0	1
LIGHT CONDITION	(0)	(1)	(1)	(0)	(2)	(2)
DARK NIGHT	0	1	1	0	2	2
OBJECT	(0)	(1)	(1)	(0)	(2)	(2)
AIRPORT FACILITY	0	0	0	0	1	1
TREE(S)	0	1	1	0	1	1
HUMAN PERFORMANCE	(9)	(6)	(15)	(25)	(16)	(41)
AIRCRAFT	(0)	(0)	(0)	(3)	(4)	(7)
FLIGHT CONTROLS	(0)	(0)	(0)	(0)	(1)	(1)
LOWERING OF FLAPS	(0)	(0)	(0)	(0)	(1)	(1)
NOT SELECTED	(0)	(0)	(0)	(0)	(1)	(1)
PILOT IN COMMAND	0	0	0	0	1	1
FUEL SYSTEM	(0)	(0)	(0)	(2)	(2)	(4)
FUEL SYSTEM	(0)	(0)	(0)	(1)	(0)	(1)
NOT UNDERSTOOD	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
FUEL TANK SELECTOR POSITION	(0)	(0)	(0)	(1)	(1)	(2)
IMPROPER	(0)	(0)	(0)	(1)	(1)	(2)
PILOT IN COMMAND	0	0	0	1	1	2
FUEL SUPPLY	(0)	(0)	(0)	(0)	(1)	(1)
MISJUDGED	(0)	(0)	(0)	(0)	(1)	(1)
PILOT IN COMMAND	0	0	0	0	1	1
POWERPLANT CONTROLS	(0)	(0)	(0)	(0)	(1)	(1)
PROPELLER FEATHERING	(0)	(0)	(0)	(0)	(1)	(1)
NOT PERFORMED	(0)	(0)	(0)	(0)	(1)	(1)
PILOT IN COMMAND	0	0	0	0	1	1
ROTORCRAFT FLIGHT CONTROLS	(0)	(0)	(0)	(1)	(0)	(1)
COLLECTIVE	(0)	(0)	(0)	(1)	(0)	(1)
IMPROPER USE OF	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
OPERATIONS	(9)	(6)	(15)	(22)	(12)	(34)
PLANNING-DECISION	(2)	(5)	(7)	(6)	(5)	(11)
AIRCRAFT PREFLIGHT	(0)	(1)	(1)	(0)	(1)	(1)
INADEQUATE	(0)	(1)	(1)	(0)	(1)	(1)
PILOT IN COMMAND	0	1	1	0	1	1
AIRCRAFT WEIGHT AND BALANCE	(0)	(1)	(1)	(0)	(1)	(1)
IMPROPER	(0)	(1)	(1)	(0)	(1)	(1)
PILOT IN COMMAND	0	1	1	0	1	1
IN-FLIGHT PLANNING/DECISION	(0)	(0)	(0)	(1)	(0)	(1)

CAUSE/FACTOR TABLE
SCHEDULED 14 CFR 135 OPERATIONS
1984

	FATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE FACTOR	TOTAL	CAUSE FACTOR	TOTAL	CAUSE FACTOR	TOTAL
AIRCRAFT, ENVIRONMENT, HUMAN PERFORMANCE (Continued)						
HUMAN PERFORMANCE (Continued)						
OPERATIONS (Continued)						
PLANNING-DECISION (Continued)						
IN-FLIGHT PLANNING/DECISION (Continued)						
IMPROPER						
PILOT IN COMMAND	(0)	(0)	(0)	(1)	(0)	(1)
0	0	0	0	1	0	1
VFR FLIGHT INTO IMC	(1)	(0)	(1)	(1)	(0)	(1)
CONTINUED	(1)	(0)	(1)	(1)	(0)	(1)
PILOT IN COMMAND	1	0	1	1	0	1
VISUAL LOOKOUT	(0)	(2)	(2)	(1)	(2)	(3)
INADEQUATE	(0)	(2)	(2)	(0)	(2)	(2)
PILOT IN COMMAND	0	1	1	0	1	1
PILOT OF OTHER AIRCRAFT	0	1	1	0	1	1
POOR	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
FLIGHT INTO KNOWN ADVERSE WEATHER	(0)	(0)	(0)	(1)	(0)	(1)
ATTEMPTED	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
IFR PROCEDURE	(1)	(0)	(1)	(1)	(0)	(1)
NOT FOLLOWED	(1)	(0)	(1)	(1)	(0)	(1)
PILOT IN COMMAND	1	0	1	1	0	1
PROCEDURES/DIRECTIVES	(0)	(1)	(1)	(1)	(1)	(2)
NOT FOLLOWED	(0)	(1)	(1)	(1)	(1)	(2)
PILOT IN COMMAND	0	0	0	1	0	1
COMPANY/OPERATOR MGMT	0	1	1	0	1	1
MAINTENANCE	(1)	(1)	(2)	(1)	(4)	(5)
MAINTENANCE, SERVICE OF AIRCRAFT	(1)	(1)	(2)	(1)	(1)	(2)
IMPROPER	(1)	(1)	(2)	(1)	(1)	(2)
GROUND PERSONNEL	1	1	2	1	1	2
MAINTENANCE, BALANCING	(0)	(0)	(0)	(0)	(1)	(1)
INADEQUATE	(0)	(0)	(0)	(0)	(1)	(1)
COMPANY MAINTENANCE PSNL	0	0	0	0	1	1
MAINTENANCE, INSTALLATION	(0)	(0)	(0)	(0)	(2)	(2)
IMPROPER	(0)	(0)	(0)	(0)	(2)	(2)
NO PERSON SPECIFIED	0	0	0	0	1	1
COMPANY MAINTENANCE PSNL	0	0	0	0	1	1
AIRCRAFT HANDLING	(4)	(0)	(4)	(13)	(3)	(16)
ABORTED LANDING	(0)	(0)	(0)	(1)	(0)	(1)
NOT PERFORMED	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
AIRSPEED	(0)	(0)	(0)	(1)	(0)	(1)
MISJUDGED	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
AIRSPEED(VMC)	(1)	(0)	(1)	(1)	(0)	(1)
NOT MAINTAINED	(1)	(0)	(1)	(1)	(0)	(1)
PILOT IN COMMAND	1	0	1	1	0	1
PROPER ALTITUDE	(2)	(0)	(2)	(2)	(0)	(2)
NOT MAINTAINED	(2)	(0)	(2)	(2)	(0)	(2)
PILOT IN COMMAND	2	0	2	2	0	2
PROPER DESCENT RATE	(0)	(0)	(0)	(2)	(0)	(2)
EXCEEDED	(0)	(0)	(0)	(2)	(0)	(2)
PILOT IN COMMAND	0	0	0	2	0	2
CLEARANCE	(0)	(0)	(0)	(0)	(1)	(1)
INADEQUATE	(0)	(0)	(0)	(0)	(1)	(1)
NO PERSON SPECIFIED	0	0	0	0	1	1
PROPER ALIGNMENT	(0)	(0)	(0)	(0)	(1)	(1)
NOT ATTAINED	(0)	(0)	(0)	(0)	(1)	(1)
PILOT IN COMMAND	0	0	0	0	1	1
PROPER TOUCHDOWN POINT	(0)	(0)	(0)	(1)	(0)	(1)

CAUSE/FACTOR TABLE
SCHEDULED 14 CFR 135 OPERATIONS
1984

	FATAL ACCIDENTS			ALL ACCIDENTS	
	CAUSE FACTOR	TOTAL	CAUSE FACTOR	TOTAL	
AIRCRAFT, ENVIRONMENT, HUMAN PERFORMANCE (Continued)					
HUMAN PERFORMANCE (Continued)					
OPERATIONS (Continued)					
AIRCRAFT HANDLING (Continued)					
PROPER TOUCHDOWN POINT (Continued)					
EXCEEDED	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
FLARE	(0)	(0)	(0)	(1)	(0)
NOT ATTAINED	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
REMEDIAL ACTION	(0)	(0)	(0)	(1)	(0)
DELAYED	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
EMERGENCY PROCEDURE	(1)	(0)	(1)	(2)	(1)
IMPROPER	(1)	(0)	(1)	(1)	(0)
PILOT IN COMMAND	1	0	1	1	0
INADEQUATE	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
NOT PERFORMED	(0)	(0)	(0)	(0)	(1)
PILOT IN COMMAND	0	0	0	0	1
ROTOR RPM	(0)	(0)	(0)	(1)	(0)
INADEQUATE	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
COMMUNICATIONS/INFORMATION/ATC	(2)	(0)	(2)	(2)	(0)
ARTCC SERVICE	(1)	(0)	(1)	(1)	(0)
DELAYED	(1)	(0)	(1)	(1)	(0)
PILOT IN COMMAND	1	0	1	1	0
RADAR ASSISTANCE TO VFR AIRCRAFT	(1)	(0)	(1)	(1)	(0)
NOT USED	(1)	(0)	(1)	(1)	(0)
PILOT OF OTHER AIRCRAFT	1	0	1	1	0
UNDETERMINED	0	0	0	3	0
DIRECT UNDERLYING CAUSE FACTORS:					
IMPROPER USE OF PROCEDURE	(0)	(4)	(4)	(1)	(9)
DIVERTED ATTENTION	(0)	(1)	(1)	(1)	(2)
PILOT IN COMMAND	0	0	0	0	1
OVER CONFIDENCE IN PERSONAL ABILITY	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
QUALIFICATION	(0)	(1)	(1)	(0)	(1)
PILOT IN COMMAND	0	1	1	0	1
IMPROPER USE OF EQUIPMENT/AIRCRAFT	(0)	(3)	(3)	(0)	(6)
DIVERTED ATTENTION	(0)	(0)	(0)	(0)	(1)
PILOT IN COMMAND	0	0	0	0	1
INATTENTIVE	(0)	(0)	(0)	(0)	(1)
PILOT IN COMMAND	0	0	0	0	1
HABIT INTERFERENCE	(0)	(1)	(1)	(0)	(1)
GROUND PERSONNEL	0	1	1	0	1
INADEQUATE TRAINING	(0)	(1)	(1)	(0)	(1)
COMPANY/OPERATOR MGMT	0	1	1	0	1
INADEQUATE TRANSITION/UPGRADE TRAINING	(0)	(0)	(0)	(0)	(1)
PILOT IN COMMAND	0	0	0	0	1
LACK OF TOTAL EXPERIENCE IN KIND OF AIRCRAFT	(0)	(1)	(1)	(0)	(1)
PILOT IN COMMAND	0	1	1	0	1
PROCEDURE INADEQUATE	(0)	(0)	(0)	(0)	(1)
PROCEDURE INADEQUATE	(0)	(0)	(0)	(0)	(1)
MANUFACTURER	0	0	0	0	1
INDIRECT UNDERLYING CAUSE FACTORS:					
INADEQUATE SURVEILLANCE OF OPERATION	(0)	(3)	(3)	(0)	(3)
INADEQUATE SURVEILLANCE OF OPERATION	(0)	(2)	(2)	(0)	(2)
FAA(ORGANIZATION)	0	1	1	0	1

CAUSE/FACTOR TABLE
SCHEDULED 14 CFR 135 OPERATIONS
1984

	FATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE FACTOR	TOTAL	CAUSE FACTOR	TOTAL	CAUSE FACTOR	TOTAL
INDIRECT UNDERLYING CAUSE FACTORS: (Continued)						
INADEQUATE SURVEILLANCE OF OPERATION (Continued)	(0)	(1)	(1)	(0)	(1)	(1)
INADEQUATE PROCEDURE	0	1	1	0	1	1
COMPANY/OPERATOR MGMT						
INSUFFICIENT STANDARDS/REQUIREMENTS	(0)	(1)	(1)	(0)	(1)	(1)
OPERATION/OPERATOR	(0)	(1)	(1)	(0)	(1)	(1)
COMPANY/OPERATOR MGMT	0	1	1	0	1	1

APPENDIX D

CAUSE/FACTOR TABLE
NON SCHEDULED 14 CFR 135 ACCIDENTS

CAUSE/FACTOR TABLE
NON SCHEDULED 14 CFR 135 OPERATIONS
1984

	FATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
AIRCRAFT, ENVIRONMENT, HUMAN PERFORMANCE						
AIRCRAFT	(50)	(41)	(91)	(304)	(243)	(547)
STRUCTURE	(5)	(11)	(16)	(81)	(44)	(125)
WING	(1)	(5)	(6)	(28)	(18)	(46)
WING	(0)	(1)	(1)	(2)	(4)	(6)
ICE	0	1	1	1	3	4
WING, WING RIB	(0)	(0)	(0)	(1)	(0)	(1)
OVERLOAD	0	0	0	1	0	1
WING, SKIN	(0)	(0)	(0)	(0)	(1)	(1)
BURNED	0	0	0	0	1	1
FLIGHT CONTROL SURFACES/ATTACHMENTS	(0)	(1)	(1)	(0)	(1)	(1)
FLIGHT CONTROL, STABILATOR SURFACE	(0)	(1)	(1)	(0)	(1)	(1)
OVERLOAD	0	1	1	0	1	1
LANDING GEAR	(0)	(1)	(1)	(21)	(7)	(28)
LANDING GEAR, MAIN GEAR	(0)	(0)	(0)	(2)	(2)	(4)
FAILURE, TOTAL	0	0	0	0	1	1
FATIGUE	0	0	0	1	0	1
OVERLOAD	0	0	0	0	1	1
UNDETERMINED	0	0	0	1	0	1
LANDING GEAR, MAIN GEAR ATTACHMENT	(0)	(0)	(0)	(3)	(1)	(4)
FAILURE, TOTAL	0	0	0	3	0	3
OVERLOAD	0	0	0	0	1	1
LANDING GEAR, NOSE GEAR ASSEMBLY	(0)	(0)	(0)	(2)	(1)	(3)
CORRODED	0	0	0	1	0	1
JAMMED	0	0	0	1	0	1
OVERLOAD	0	0	0	0	1	1
LANDING GEAR, EMERGENCY EXTENSION ASSEMBLY	(0)	(0)	(0)	(1)	(0)	(1)
JAMMED	0	0	0	1	0	1
LANDING GEAR, TIRE	(0)	(0)	(0)	(2)	(0)	(2)
FAILURE, TOTAL	0	0	0	2	0	2
LANDING GEAR, FLOAT ASSEMBLY	(0)	(0)	(0)	(3)	(0)	(3)
LEAK	0	0	0	1	0	1
PRESSURE TOO LOW	0	0	0	1	0	1
WATER	0	0	0	1	0	1
LANDING GEAR, SKID ASSEMBLY	(0)	(1)	(1)	(0)	(1)	(1)
LOOSE	0	1	1	0	1	1
LANDING GEAR, NORMAL BRAKE SYSTEM	(0)	(0)	(0)	(1)	(1)	(2)
FAILURE, TOTAL	0	0	0	1	0	1
FROZEN	0	0	0	0	1	1
LANDING GEAR, BEAR LOCKING MECHANISM	(0)	(0)	(0)	(2)	(0)	(2)
FAILURE, TOTAL	0	0	0	2	0	2
LANDING GEAR, NOSEWHEEL STEERING	(0)	(0)	(0)	(1)	(0)	(1)
FATIGUE	0	0	0	1	0	1
LANDING GEAR, NORMAL RETRACTION/EXTENSION ASSEMBLY	(0)	(0)	(0)	(4)	(1)	(5)
FAILURE, PARTIAL	0	0	0	1	0	1
FAILURE, TOTAL	0	0	0	1	1	2
JAMMED	0	0	0	1	0	1
UNDETERMINED	0	0	0	1	0	1
DOOR	(0)	(1)	(1)	(0)	(3)	(3)
DOOR, CARGO	(0)	(1)	(1)	(0)	(3)	(3)
FIRE	0	1	1	0	1	1
OPEN	0	0	0	0	1	1
UNLOCKED	0	0	0	0	1	1
FLIGHT CONTROL SYSTEM	(1)	(0)	(1)	(1)	(0)	(1)
FLT CONTROL SYST, WING SPOILER SYSTEM	(1)	(0)	(1)	(1)	(0)	(1)
UNDETERMINED	1	0	1	1	0	1
STABILIZER	(0)	(1)	(1)	(0)	(1)	(1)
STABILIZER	(0)	(1)	(1)	(0)	(1)	(1)
ICE	0	1	1	0	1	1
ROTORCRAFT FLIGHT CONTROL	(0)	(0)	(0)	(1)	(0)	(1)

CAUSE/FACTOR TABLE
NONSCHEDULED 14 CFR 135 OPERATIONS
1984

AIRCRAFT, ENVIRONMENT, HUMAN PERFORMANCE (Continued)	FATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
AIRCRAFT (Continued)						
STRUCTURE (Continued)						
ROTORCRAFT FLIGHT CONTROL (Continued)						
ROTORCRAFT FLIGHT CONTROL, TAIL ROTOR CONTROL LOSS, PARTIAL	(0)	(0)	(0)	(1)	(0)	(1)
0 0 0 1 0 1						
ROTOR DRIVE SYSTEM	(0)	(0)	(0)	(2)	(2)	(4)
ROTOR DRIVE SYSTEM, TAIL ROTOR GEAR BOX(90 DEG) SEPARATION	(0)	(0)	(0)	(1)	(0)	(1)
0 0 0 1 0 1						
ROTOR DRIVE SYSTEM, TAIL ROTOR DRIVE SHAFT CHAFED	(0)	(0)	(0)	(1)	(2)	(3)
0 0 0 0 1 1						
FAILURE, TOTAL	(0)	(0)	(0)	1	0	1
SEPARATION	(0)	(0)	(0)	0	1	1
ROTOR SYSTEM	(0)	(0)	(0)	(1)	(0)	(1)
ROTOR SYSTEM, TAIL ROTOR BLADE CORRODED	(0)	(0)	(0)	(1)	(0)	(1)
0 0 0 1 0 1						
SYSTEMS						
ELECTRICAL SYSTEM	(0)	(5)	(5)	(0)	(9)	(9)
ELECTRICAL SYSTEM	(0)	(0)	(0)	(0)	(2)	(2)
DISABLED	(0)	(0)	(0)	(0)	(1)	(1)
0 0 0 0 1 1						
ELECTRICAL SYSTEM, CIRCUIT BREAKER POPPED/TRIPPED	(0)	(0)	(0)	(0)	(1)	(1)
0 0 0 0 1 1						
FLIGHT/NAV INSTRUMENTS	(0)	(2)	(2)	(0)	(2)	(2)
FLIGHT/NAV INSTRUMENTS, ATTITUDE GYRO	(0)	(1)	(1)	(0)	(1)	(1)
DISABLED	0	1	1	0	1	1
FLIGHT/NAV INSTRUMENTS, ATTITUDE INDICATOR FALSE INDICATION	(0)	(1)	(1)	(0)	(1)	(1)
0 1 1 0 1 1						
ANTI-ICE/DE-ICE SYSTEM	(0)	(0)	(0)	(0)	(1)	(1)
ANTI-ICE/DE-ICE SYSTEM, EMPENNAGE INADEQUATE	(0)	(0)	(0)	(0)	(1)	(1)
0 0 0 0 1 1						
COMM/NAV EQUIPMENT	(0)	(1)	(1)	(0)	(1)	(1)
COMM/NAV EQUIPMENT	(0)	(1)	(1)	(0)	(1)	(1)
ERRATIC	0	1	1	0	1	1
MISC ROTORCRAFT	(0)	(0)	(0)	(0)	(1)	(1)
MISC ROTORCRAFT, EMERGENCY FLOATATION GEAR DISABLED	(0)	(0)	(0)	(0)	(1)	(1)
0 0 0 0 1 1						
OTHER SYSTEM	(0)	(2)	(2)	(0)	(2)	(2)
PNEUMATIC SYSTEM	(0)	(1)	(1)	(0)	(1)	(1)
NO PRESSURE	0	1	1	0	1	1
WARNING SYSTEM(OTHER)	(0)	(1)	(1)	(0)	(1)	(1)
DISCONNECTED	0	1	1	0	1	1
POWERPLANT						
ENGINE ASSEMBLY	(3)	(0)	(3)	(39)	(10)	(49)
ENGINE ASSEMBLY	(0)	(0)	(0)	(3)	(0)	(3)
FIRE	(0)	(0)	(0)	(1)	(0)	(1)
0 0 0 1 0 1						
ENGINE ASSEMBLY, CONNECTING ROD FAILURE, TOTAL	(0)	(0)	(0)	(1)	(0)	(1)
0 0 0 1 0 1						
ENGINE ASSEMBLY, VALVE DISABLED	(0)	(0)	(0)	(1)	(0)	(1)
0 0 0 1 0 1						
COMPRESSOR ASSEMBLY	(0)	(0)	(0)	(5)	(0)	(5)
COMPRESSOR ASSEMBLY, BLADE FAILURE, TOTAL	(0)	(0)	(0)	(2)	(0)	(2)
0 0 0 1 0 1						
SEPARATION	(0)	(0)	(0)	1	0	1
COMPRESSOR ASSEMBLY, BLADE RETENTION	(0)	(0)	(0)	(3)	(0)	(3)
BENT	0	0	0	1	0	1
CORRODED	0	0	0	1	0	1
FATIGUE	0	0	0	1	0	1
TURBINE ASSEMBLY	(0)	(0)	(0)	(4)	(1)	(5)
TURBINE ASSEMBLY, TURBINE WHEEL	(0)	(0)	(0)	(2)	(1)	(3)

CAUSE/FACTOR TABLE
NONSCHEDED 14 CFR 135 OPERATIONS
1984

	FATAL ACCIDENTS CAUSE FACTOR	FATAL ACCIDENTS TOTAL	ALL ACCIDENTS CAUSE FACTOR	ALL ACCIDENTS TOTAL
AIRCRAFT, ENVIRONMENT, HUMAN PERFORMANCE (Continued)				
AIRCRAFT (Continued)				
POWERPLANT (Continued)				
TURBINE ASSEMBLY (Continued)				
TURBINE ASSEMBLY,TURBINE WHEEL (Continued)				
FAILURE,TOTAL	0	0	0	1
FATIGUE	0	0	0	1
OVERTEMPERATURE	0	0	0	1
TURBINE ASSEMBLY,SHAFT	(0)	(0)	(0)	(2)
FAILURE,TOTAL	0	0	0	1
FATIGUE	0	0	0	1
EXHAUST SYSTEM	(0)	(0)	(0)	(2)
EXHAUST SYSTEM,CLAMP	(0)	(0)	(0)	(1)
IMPROPER	0	0	0	1
EXHAUST SYSTEM,TRACK	(0)	(0)	(0)	(1)
LEAK	0	0	0	1
IGNITION SYSTEM	(3)	(0)	(3)	(5)
IGNITION SYSTEM,MAGNETO	(2)	(0)	(2)	(4)
DISCONNECTED	0	0	0	0
FAILURE,TOTAL	1	0	1	2
OVERTEMPERATURE	1	0	1	0
IGNITION SYSTEM,SPARK PLUG	(1)	(0)	(1)	(1)
LACK OF	1	0	1	0
FUEL SYSTEM	(0)	(0)	(0)	(18)
FUEL SYSTEM	(0)	(0)	(0)	(5)
DIRTY(FOGGY)	0	0	0	1
FIRE	0	0	0	1
ICE	0	0	0	1
UNDETERMINED	0	0	0	2
WATER	0	0	0	1
FUEL SYSTEM,LINE	(0)	(0)	(0)	(4)
BLOCKED(PARTIAL)	0	0	0	2
CRACKED	0	0	0	1
IMPROPER	0	0	0	1
FUEL SYSTEM,LINE FITTING	(0)	(0)	(0)	(1)
LOOSE	0	0	0	1
FUEL SYSTEM,SELECTOR VALVE	(0)	(0)	(0)	(0)
INOPERATIVE	0	0	0	1
FUEL SYSTEM,FILTER	(0)	(0)	(0)	(2)
BLOCKED(PARTIAL)	0	0	0	1
LOOSE	0	0	0	1
FUEL SYSTEM,PUMP	(0)	(0)	(0)	(0)
INOPERATIVE	0	0	0	1
FUEL SYSTEM,RAM AIR	(0)	(0)	(0)	(2)
BLOCKED(TOTAL)	0	0	0	1
INCORRECT	0	0	0	1
FUEL SYSTEM,FUEL CONTROL	(0)	(0)	(0)	(4)
FOREIGN OBJECT	0	0	0	0
LEAK	0	0	0	1
LOOSE	0	0	0	1
OUTPUT LOW	0	0	0	1
LUBRICATING SYSTEM	(0)	(0)	(0)	(1)
LUBRICATING SYSTEM	(0)	(0)	(1)	(0)
FOREIGN OBJECT	0	0	0	1
ENGINE INSTALLATION	(0)	(0)	(0)	(0)
ENGINE INSTALLATION,FIRE SHIELD	(0)	(0)	(0)	(1)
CHAFED	0	0	0	1
ENGINE INSTRUMENTS	(0)	(0)	(0)	(5)
ENGINE INSTRUMENTS,MANIFOLD PRESSURE GAGE	(0)	(0)	(0)	(1)
LOSS,PARTIAL	0	0	0	1
ENGINE INSTRUMENTS,FUEL QUANTITY GAGE	(0)	(0)	(0)	(3)

CAUSE/FACTOR TABLE
NONSCHEDED 14 CFR 135 OPERATIONS
1984

	FATAL ACCIDENTS CAUSE FACTOR	TOTAL	ALL ACCIDENTS CAUSE FACTOR	TOTAL
AIRCRAFT, ENVIRONMENT, HUMAN PERFORMANCE (Continued)				
AIRCRAFT (Continued)				
POWERPLANT (Continued)				
ENGINE INSTRUMENTS (Continued)				
ENGINE INSTRUMENTS,FUEL QUANTITY GAGE (Continued)				
CORRODED	0	0	0	1
FAILURE, PARTIAL	0	0	0	1
FALSE INDICATION	0	0	0	1
ENGINE INSTRUMENTS,FUEL FLOW GAGE	(0)	(0)	(0)	(1)
NO PRESSURE	0	0	0	1
TURBOSHAFT ENGINE	(0)	(0)	(0)	(1)
TURBOSHAFT ENGINE	(0)	(0)	(0)	(0)
UNDETERMINED	0	0	1	0
MISCELLANEOUS FLUID	(1)	(1)	(2)	(14)
FLUID,FUEL	(1)	(0)	(1)	(14)
CONTAMINATION	(1)	(0)	(1)	(4)
EXHAUSTION	0	0	0	1
IMPROPER	0	0	0	2
STARVATION	1	0	1	0
WATER	0	0	1	1
FLUID,OIL	(0)	(0)	(0)	(1)
STARVATION	0	0	1	0
LIGHTS	(0)	(0)	(0)	(1)
ANNUNCIATOR PANEL LIGHTS	(0)	(0)	(0)	(1)
FALSE INDICATION	0	0	0	1
AIRCRAFT PERFORMANCE	(0)	(1)	(1)	(0)
AIRCRAFT PERFORMANCE,TAKEOFF CAPABILITY	(0)	(1)	(1)	(1)
DETERIORATED	0	1	1	0
AIRCRAFT PERFORMANCE,ENGINE OUT CAPABILITY	(0)	(0)	(0)	(1)
DETERIORATED	0	0	0	1
AIRCRAFT ENVIRONMENT	(0)	(7)	(7)	(54)
AIRPORT	(0)	(0)	(0)	(12)
AIRPORT FACILITIES	(0)	(0)	(0)	(12)
AIRPORT FACILITIES	(0)	(0)	(0)	(12)
HIGH TERRAIN	0	0	0	2
RISING	0	0	0	1
AIRPORT FACILITIES,RUNWAY/LANDING AREA CONDITION	(0)	(0)	(0)	(9)
CONGESTED	0	0	0	1
ICY	0	0	0	1
RISING	0	0	0	1
ROUGH/UNEVEN	0	0	0	1
SLUSH COVERED	0	0	0	1
SOFT	0	0	0	1
WET	0	0	0	3
AIRPORT FACILITIES,RUNWAY EDGE LIGHTS	(0)	(0)	(0)	(1)
NOT OPERATING	0	0	0	1
TERRAIN/RUNWAY	(0)	(7)	(7)	(42)
DIRT BANK	0	0	0	1
DITCH	0	0	0	1
DOWNHILL	0	0	0	1
HIGH TERRAIN	0	1	1	0
HIGH VEGETATION	0	0	0	3
HIGH OBSTRUCTION(S)	0	0	0	2
HIDDEN OBSTRUCTION(S)	0	0	0	1
ICY	0	1	1	0
LOOSE OBJECTS	0	0	0	2
NONE SUITABLE	0	0	0	4
MOUNTAINOUS/HILLY	0	1	1	0
RISING	0	1	1	0
ROUGH/UNEVEN	0	0	0	5
SNOWBANK	0	0	0	2
SNOW COVERED	0	1	1	0
SOFT	0	1	1	0

CAUSE/FACTOR TABLE
NONSCHEDULED 14 CFR 135 OPERATIONS
1984

	FATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
AIRCRAFT, ENVIRONMENT, HUMAN PERFORMANCE (Continued)						
AIRCRAFT ENVIRONMENT (Continued)						
TERRAIN/RUNWAY (Continued)						
UPHILL	0	0	0	0	1	1
WATER/ROUGH	0	0	0	0	2	2
WEAK ICE	0	1	1	0	1	1
WET	0	0	0	0	1	1
ENVIRONMENTAL CONDITIONS	(2)	(16)	(18)	(4)	(90)	(94)
WEATHER CONDITION	(2)	(8)	(10)	(4)	(49)	(53)
CROSSWIND	0	0	0	0	3	3
CLOUDS	0	0	0	0	1	1
DOWNDRAFT	0	0	0	0	2	2
FOG	0	1	1	0	4	4
GUSTS	1	0	1	1	4	5
HAZE	0	0	0	0	1	1
HIGH WIND	1	0	1	2	3	5
HIGH DENSITY ALTITUDE	0	0	0	0	7	7
ICING CONDITIONS	0	1	1	0	3	3
LOW CEILING	0	2	2	0	5	5
OBSCURATION	0	1	1	0	3	3
RAIN	0	1	1	0	4	4
TAILWIND	0	0	0	0	2	2
TURBULENCE	0	0	0	0	1	1
WHITEOUT	0	0	0	0	3	3
WINDSHEAR	0	1	1	0	1	1
UNFAVORABLE WIND	0	1	1	1	2	3
LIGHT CONDITION	(0)	(3)	(3)	(0)	(16)	(16)
DAWN	0	0	0	0	2	2
NIGHT	0	1	1	0	1	1
DARK NIGHT	0	2	2	0	12	12
SUNGLARE	0	0	0	0	1	1
OBJECT	(0)	(5)	(5)	(0)	(25)	(25)
SNOWBANK	0	0	0	0	1	1
AIRCRAFT MOVING ON GROUND	0	0	0	0	2	2
AIRCRAFT PARKED	0	0	0	0	1	1
AIRPORT FACILITY	0	1	1	0	1	1
BUILDING(NONRESIDENTIAL)	0	1	1	0	2	2
FENCE	0	0	0	0	3	3
TREE(S)	0	1	1	0	9	9
UTILITY POLE	0	1	1	0	1	1
VEHICLE	0	0	0	0	4	4
WIRE, TRANSMISSION	0	1	1	0	1	1
HUMAN PERFORMANCE	(43)	(7)	(50)	(217)	(55)	(272)
AIRCRAFT	(4)	(0)	(4)	(20)	(7)	(27)
LANDING GEAR	(0)	(0)	(0)	(4)	(2)	(6)
NOT ATTAINED	(0)	(0)	(0)	(0)	(1)	(1)
PILOT IN COMMAND	0	0	0	0	1	1
BEAR EXTENSION	(0)	(0)	(0)	(2)	(1)	(3)
DELAYED	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
INITIATED	(0)	(0)	(0)	(0)	(1)	(1)
PILOT IN COMMAND	0	0	0	0	1	1
NOT PERFORMED	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
GEAR DOWN AND LOCKED	(0)	(0)	(0)	(2)	(0)	(2)
NOT ATTAINED	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
NOT IDENTIFIED	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
FLIGHT CONTROLS	(1)	(0)	(1)	(1)	(2)	(3)
FLIGHT CONTROLS	(1)	(0)	(1)	(1)	(0)	(1)
IMPROPER USE OF	(1)	(0)	(1)	(1)	(0)	(1)

CAUSE/FACTOR TABLE
NONSCHEDED 14 CFR 135 OPERATIONS
1984

	FATAL ACCIDENTS			
	CAUSE FACTOR	TOTAL	CAUSE FACTOR	TOTAL
AIRCRAFT, ENVIRONMENT, HUMAN PERFORMANCE (Continued)				
HUMAN PERFORMANCE (Continued)				
AIRCRAFT (Continued)				
FLIGHT CONTROLS (Continued)				
FLIGHT CONTROLS (Continued)				
PILOT IN COMMAND	1	0	1	1
LOWERING OF FLAPS	(0)	(0)	(0)	(0)
IMPROPER	(0)	(0)	(0)	(0)
PILOT IN COMMAND	0	0	0	1
NOT IDENTIFIED	(0)	(0)	(0)	(0)
PILOT IN COMMAND	0	0	0	1
FUEL SYSTEM	(2)	(0)	(2)	(11)
FUEL SYSTEM	(1)	(0)	(1)	(2)
IMPROPER USE OF	(1)	(0)	(1)	(2)
PILOT IN COMMAND	1	0	1	2
FUEL TANK SELECTOR POSITION	(0)	(0)	(0)	(3)
IMPROPER	(0)	(0)	(0)	(0)
PILOT IN COMMAND	0	0	0	3
FUEL BOOST PUMP SELECTOR POSITION	(1)	(0)	(1)	(2)
IMPROPER	(1)	(0)	(1)	(2)
PILOT IN COMMAND	1	0	1	2
FUEL SUPPLY	(0)	(0)	(0)	(4)
INADEQUATE	(0)	(0)	(0)	(4)
PILOT IN COMMAND	0	0	0	4
POWERPLANT CONTROLS	(1)	(0)	(1)	(3)
POWERPLANT CONTROLS	(1)	(0)	(1)	(2)
IMPROPER USE OF	(1)	(0)	(1)	(0)
PILOT IN COMMAND	1	0	1	0
INADVERTENT USE	(0)	(0)	(0)	(1)
PILOT IN COMMAND	0	0	0	1
MIXTURE	(0)	(0)	(0)	(1)
IMPROPER USE OF	(0)	(0)	(0)	(0)
PILOT IN COMMAND	0	0	0	1
COWL FLAPS	(0)	(0)	(0)	(1)
CONFLICTING	(0)	(0)	(0)	(1)
PILOT IN COMMAND	0	0	0	1
FLIGHT AND NAVIGATION INSTRUMENTS	(0)	(0)	(0)	(1)
ALTIMETER SETTING	(0)	(0)	(0)	(0)
IMPROPER	(0)	(0)	(0)	(0)
PILOT IN COMMAND	0	0	0	1
AIRSPEED INDICATOR	(0)	(0)	(0)	(1)
DISREGARDED	(0)	(0)	(0)	(1)
PILOT IN COMMAND	0	0	0	1
MISCELLANEOUS EQUIPMENT	(0)	(0)	(0)	(1)
MISCELLANEOUS EQUIPMENT	(0)	(0)	(0)	(1)
NOT USED	(0)	(0)	(0)	(1)
PILOT IN COMMAND	0	0	0	1
OPERATIONS	(39)	(7)	(46)	(197)
PLANNING-DECISION	(21)	(4)	(25)	(93)
PLANNING-DECISION	(0)	(0)	(0)	(1)
IMPROPER	(0)	(0)	(0)	(1)
PILOT IN COMMAND	0	0	0	1
PREFLIGHT PLANNING/PREPARED	(5)	(0)	(5)	(11)
IMPROPER	(1)	(0)	(1)	(4)
PILOT IN COMMAND	1	0	1	4
INADEQUATE	(4)	(0)	(4)	(6)
PILOT IN COMMAND	4	0	4	6
NOT FOLLOWED	(0)	(0)	(0)	(0)
PILOT IN COMMAND	0	0	0	1
AIRCRAFT PREFLIGHT	(0)	(1)	(1)	(9)
			(1)	(10)

CAUSE/FACTOR TABLE
NONSCHEDULED 14 CFR 135 OPERATIONS
1984

	FATAL ACCIDENTS CAUSE FACTOR	FATAL ACCIDENTS TOTAL	ALL ACCIDENTS CAUSE FACTOR	ALL ACCIDENTS TOTAL	
AIRCRAFT, ENVIRONMENT, HUMAN PERFORMANCE (Continued)					
HUMAN PERFORMANCE (Continued)					
OPERATIONS (Continued)					
PLANNING-DECISION (Continued)					
AIRCRAFT PREFLIGHT (Continued)					
IMPROPER PILOT IN COMMAND	(0) 0	(0) 0	(0) 2	(0) 0	(2) 2
INADEQUATE PILOT IN COMMAND	(0) 0	(1) 1	(1) 7	(1) 1	(8) 8
AIRCRAFT SERVICE	(0)	(0)	(0)	(0)	(1)
NOT CORRECTED	(0)	(0)	(0)	(0)	(1)
AIRPORT PERSONNEL	0	0	0	0	1
ICE/FROST REMOVAL FROM AIRCRAFT	(1)	(0)	(1)	(3)	(0)
DISREGARDED PILOT IN COMMAND	(0) 0	(0) 0	(1) 1	(0) 0	(1) 1
INADEQUATE PILOT IN COMMAND	(0) 0	(0) 0	(1) 1	(0) 0	(1) 1
NOT ATTAINED PILOT IN COMMAND	(1) 1	(0) 0	(1) 1	(1) 0	(1) 1
AIRCRAFT UNATTENDED/ENGINE(S) RUNNING	(0)	(0)	(0)	(1)	(0)
INITIATED PILOT IN COMMAND	(0) 0	(0) 0	(1) 1	(0) 0	(1) 1
AIRCRAFT WEIGHT AND BALANCE	(0)	(0)	(0)	(1)	(0)
NOT PERFORMED PILOT IN COMMAND	(0) 0	(0) 0	(1) 1	(0) 0	(1) 1
OPERATION WITH KNOWN DEFICIENCIES IN EQUIPMENT	(1)	(0)	(1)	(2)	(1)
IMPROPER PILOT IN COMMAND	(1) 1	(0) 0	(1) 1	(0) 0	(1) 1
INTENTIONAL PILOT IN COMMAND	(0) 0	(0) 0	(0) 0	(0) 1	(1) 1
PERFORMED PILOT OF OTHER AIRCRAFT	(0) 0	(0) 0	(1) 1	(0) 0	(1) 1
PROPER ASSISTANCE	(0)	(0)	(0)	(1)	(0)
INADEQUATE UNQUALIFIED PERSON	(0) 0	(0) 0	(1) 1	(0) 0	(1) 1
IN-FLIGHT PLANNING/DECISION	(3)	(0)	(3)	(9)	(1)
IMPROPER PILOT IN COMMAND	(2) 2	(0) 0	(2) 2	(7) 7	(0) 0
INADEQUATE PILOT IN COMMAND	(0) 0	(0) 0	(1) 1	(0) 0	(1) 1
POOR PILOT IN COMMAND	(1) 1	(0) 0	(1) 1	(1) 1	(2) 2
WIND INFORMATION	(0)	(0)	(0)	(1)	(0)
NOT UNDERSTOOD	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
FUEL CONSUMPTION CALCULATIONS	(0)	(0)	(0)	(3)	(1)
INACCURATE PILOT IN COMMAND	(0) 0	(0) 0	(2) 2	(0) 0	(2) 2
INADEQUATE PILOT IN COMMAND	(0) 0	(0) 0	(0) 0	(0) 1	(1) 1
MISJUDGED PILOT IN COMMAND	(0) 0	(0) 0	(0) 1	(1) 0	(1) 1
VFR FLIGHT INTO IMC	(2)	(0)	(2)	(4)	(0)
ATTEMPTED PILOT IN COMMAND	(1) 1	(0) 0	(1) 1	(1) 1	(0) 0
CONTINUED PILOT IN COMMAND	(1) 1	(0) 0	(1) 1	(3) 3	(0) 0
VFR PROCEDURES	(1)	(0)	(1)	(1)	(1)

CAUSE/FACTOR TABLE
NON SCHEDULED 14 CFR 135 OPERATIONS
1984

	FATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE FACTOR	TOTAL		CAUSE FACTOR	TOTAL	
AIRCRAFT, ENVIRONMENT, HUMAN PERFORMANCE (Continued)						
HUMAN PERFORMANCE (Continued)						
OPERATIONS (Continued)						
PLANNING-DECISION (Continued)						
VFR PROCEDURES (Continued)						
IMPROPER PILOT IN COMMAND	(1) 1	(0) 0	(1) 1	(1) 1	(1) 1	(2) 2
PERFORMANCE DATA EXCEEDED PILOT IN COMMAND	(0) (0) 0	(0) (0) 0	(0) (0) 0	(2) (2) 2	(0) (0) 0	(2) (2) 2
REFUELING NOT PERFORMED PILOT IN COMMAND	(0) (0) 0	(0) (0) 0	(0) (0) 0	(1) (1) 1	(0) (0) 0	(1) (1) 1
VISUAL LOOKOUT INADEQUATE PILOT IN COMMAND PILOT OF OTHER AIRCRAFT DRIVER OF VEHICLE	(0) (0) 0 0	(1) (0) 0 0	(1) (0) 0 0	(11) (10) 4 4	(3) (1) 1 0	(14) (11) 5 4
NOT MAINTAINED DRIVER OF VEHICLE	(0) 0	(0) 0	(0) 0	(1) 1	(0) 0	(1) 1
NOT POSSIBLE PILOT IN COMMAND	(0) 0	(1) 1	(1) 1	(0) 0	(1) 1	(1) 1
REDUCED PILOT IN COMMAND	(0) 0	(0) 0	(0) 0	(0) 0	(1) 1	(1) 1
WEATHER EVALUATION DISREGARDED PILOT IN COMMAND	(3) (1) 1	(0) (0) 0	(3) (1) 1	(6) (1) 1	(1) (0) 0	(7) (1) 1
IMPROPER PILOT IN COMMAND	(0) 0	(0) 0	(0) 0	(3) 3	(0) 0	(3) 3
MISJUDGED PILOT IN COMMAND	(1) 1	(0) 0	(1) 1	(1) 1	(0) 0	(1) 1
POOR PILOT IN COMMAND	(1) 1	(0) 0	(1) 1	(1) 1	(1) 1	(2) 2
FLIGHT INTO KNOWN ADVERSE WEATHER CONTINUED PILOT IN COMMAND	(3) (1) 1	(0) (0) 0	(3) (1) 1	(5) (1) 1	(1) (0) 0	(6) (1) 1
INITIATED PILOT IN COMMAND	(1) 1	(0) 0	(1) 1	(2) 2	(0) 0	(2) 2
PERFORMED PILOT IN COMMAND	(1) 1	(0) 0	(1) 1	(2) 2	(1) 1	(3) 3
IFR PROCEDURE IMPROPER PILOT IN COMMAND	(0) (0) 0	(0) (0) 0	(0) (0) 0	(1) (1) 1	(0) (0) 0	(1) (1) 1
FLIGHT TO ALTERNATE DESTINATION DELAYED PILOT IN COMMAND	(0) (0) 0	(0) (0) 0	(0) (0) 0	(0) (0) 0	(1) (1) 1	(1) (1) 1
COMPENSATION FOR WIND CONDITIONS IMPROPER PILOT IN COMMAND	(0) (0) 0	(0) (0) 0	(0) (1) 1	(2) (0) 0	(2) (0) 0	(4) (1) 1
INADEQUATE PILOT IN COMMAND	(0) 0	(0) 0	(0) 0	(1) 1	(1) 1	(2) 2
NOT POSSIBLE PILOT IN COMMAND	(0) 0	(0) 0	(0) 0	(0) 0	(1) 1	(1) 1
WRONG RUNWAY SELECTED PILOT IN COMMAND	(0) (0) 0	(0) (0) 0	(0) (0) 0	(1) (1) 1	(0) (0) 0	(1) (1) 1
UNSUITABLE TERRAIN	(1)	(0)	(1)	(1)	(0)	(1)

CAUSE/FACTOR TABLE
NONSCHEDULED 14 CFR 135 OPERATIONS
1984

		FATAL ACCIDENTS		ALL ACCIDENTS	
		CAUSE FACTOR	TOTAL	CAUSE FACTOR	TOTAL
AIRCRAFT, ENVIRONMENT, HUMAN PERFORMANCE (Continued)					
HUMAN PERFORMANCE (Continued)					
OPERATIONS (Continued)					
PLANNING-DECISION (Continued)					
UNSUITABLE TERRAIN (Continued)					
SELECTED		(1)	(0)	(1)	(1)
PILOT IN COMMAND		1	0	1	1
CHECKLIST		(0)	(0)	(0)	(5)
NOT FOLLOWED		(0)	(0)	(2)	(4)
PILOT IN COMMAND		0	0	2	4
NOT USED		(0)	(0)	(1)	(1)
PILOT IN COMMAND		0	0	1	1
JUDGEMENT		(1)	(1)	(2)	(8)
IMPROPER		(1)	(0)	(1)	(1)
PILOT IN COMMAND		1	0	1	1
POOR		(0)	(1)	(1)	(7)
PILOT IN COMMAND		0	1	5	6
OTHER PERSON		0	0	1	1
PROCEDURES/DIRECTIVES		(0)	(0)	(0)	(7)
DISREGARDED		(0)	(0)	(1)	(1)
COMPANY/OPERATOR MGMT		0	0	1	1
NOT FOLLOWED		(0)	(0)	(3)	(5)
PILOT IN COMMAND		0	0	3	4
OTHER PERSON		0	0	0	1
NOT USED		(0)	(0)	(1)	(1)
OTHER MAINTENANCE PSNL		0	0	1	1
ALL AVAILABLE RUNWAY		(0)	(1)	(1)	(2)
NOT USED		(0)	(1)	(0)	(2)
PILOT IN COMMAND		0	1	0	2
MAINTENANCE		(2)	(0)	(2)	(20)
MAINTENANCE		(1)	(0)	(1)	(2)
IMPROPER		(1)	(0)	(1)	(1)
COMPANY MAINTENANCE PSNL		1	0	1	1
POOR		(0)	(0)	(1)	(1)
COMPANY MAINTENANCE PSNL		0	0	1	1
MAINTENANCE-SERVICE OF AIRCRAFT		(0)	(0)	(0)	(3)
IMPROPER		(0)	(0)	(1)	(1)
OTHER MAINTENANCE PSNL		0	0	1	1
INATTENTIVE		(0)	(0)	(1)	(1)
NO PERSON SPECIFIED		0	0	1	1
INADEQUATE		(0)	(0)	(1)	(1)
COMPANY MAINTENANCE PSNL		0	0	1	1
MAINTENANCE, INSPECTION OF AIRCRAFT		(0)	(0)	(2)	(3)
IMPROPER		(0)	(0)	(0)	(1)
OTHER MAINTENANCE PSNL		0	0	0	1
INADEQUATE		(0)	(0)	(2)	(2)
COMPANY MAINTENANCE PSNL		0	0	2	2
MAINTENANCE, COMPLIANCE WITH AD		(0)	(0)	(1)	(2)
NOT FOLLOWED		(0)	(0)	(0)	(1)
COMPANY MAINTENANCE PSNL		0	0	0	1
NOT PERFORMED		(0)	(0)	(1)	(1)
COMPANY MAINTENANCE PSNL		0	0	1	1
MAINTENANCE, INSTALLATION		(1)	(0)	(1)	(5)
IMPROPER		(1)	(0)	(5)	(5)
COMPANY MAINTENANCE PSNL		1	0	2	2
OTHER MAINTENANCE PSNL		0	0	2	2
MANUFACTURER		0	0	1	1
MAINTENANCE, LUBRICATION		(0)	(0)	(1)	(1)
INADEQUATE		(0)	(0)	(1)	(1)

CAUSE/FACTOR TABLE
NONSCHEDULED 14 CFR 135 OPERATIONS
1984

	FATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
AIRCRAFT, ENVIRONMENT, HUMAN PERFORMANCE (Continued)						
HUMAN PERFORMANCE (Continued)						
OPERATIONS (Continued)						
MAINTENANCE (Continued)						
MAINTENANCE, LUBRICATION (Continued)						
COMPANY MAINTENANCE PSNL	0	0	0	1	0	1
MAINTENANCE, REPLACEMENT	(0)	(0)	(0)	(1)	(0)	(1)
NOT PERFORMED	(0)	(0)	(0)	(1)	(0)	(1)
COMPANY MAINTENANCE PSNL	0	0	0	1	0	1
MAINTENANCE, MAJOR REPAIR	(0)	(0)	(0)	(0)	(1)	(1)
NOT FOLLOWED	(0)	(0)	(0)	(0)	(1)	(1)
COMPANY MAINTENANCE PSNL	0	0	0	0	1	1
MAINTENANCE, SERVICE BULLETINS	(0)	(0)	(0)	(0)	(1)	(1)
DISREGARDED	(0)	(0)	(0)	(0)	(1)	(1)
COMPANY MAINTENANCE PSNL	0	0	0	0	1	1
MAINTENANCE, DESIGN CHANGE	(0)	(0)	(0)	(1)	(0)	(1)
INADEQUATE	(0)	(0)	(0)	(1)	(0)	(1)
MANUFACTURER	0	0	0	1	0	1
AIRPORT	(0)	(1)	(1)	(0)	(1)	(1)
AIRPORT SNOW REMOVAL	(0)	(1)	(1)	(0)	(1)	(1)
NOT PERFORMED	(0)	(1)	(1)	(0)	(1)	(1)
AIRPORT PERSONNEL	0	1	1	0	1	1
DISPATCH	(0)	(0)	(0)	(0)	(1)	(1)
DISPATCH PROCEDURES	(0)	(0)	(0)	(0)	(1)	(1)
DISREGARDED	(0)	(0)	(0)	(0)	(1)	(1)
COMPANY/OPERATOR MBHT	0	0	0	0	1	1
AIRCRAFT HANDLING	(16)	(2)	(18)	(83)	(19)	(102)
AIRCRAFT HANDLING	(0)	(0)	(0)	(1)	(0)	(1)
NOT MAINTAINED	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
ABORTED TAKEOFF	(0)	(0)	(0)	(2)	(1)	(3)
DELAYED	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
NOT PERFORMED	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
PERFORMED	(0)	(0)	(0)	(0)	(1)	(1)
PILOT IN COMMAND	0	0	0	0	1	1
AIRSPEED	(1)	(0)	(1)	(3)	(2)	(5)
EXCESSIVE	(0)	(0)	(0)	(0)	(2)	(2)
PILOT IN COMMAND	0	0	0	0	2	2
NOT MAINTAINED	(1)	(0)	(1)	(3)	(0)	(3)
PILOT IN COMMAND	1	0	1	3	0	3
AIRSPEED(VLOF)	(0)	(1)	(1)	(0)	(1)	(1)
NOT ATTAINED	(0)	(1)	(1)	(0)	(1)	(1)
PILOT IN COMMAND	0	1	1	0	1	1
AIRSPEED(VS)	(1)	(0)	(1)	(3)	(0)	(3)
NOT MAINTAINED	(1)	(0)	(1)	(3)	(0)	(3)
PILOT IN COMMAND	1	0	1	3	0	3
ALTITUDE	(3)	(0)	(3)	(5)	(2)	(7)
IMPROPER	(2)	(0)	(2)	(2)	(1)	(3)
PILOT IN COMMAND	2	0	2	2	1	3
INADEQUATE	(0)	(0)	(0)	(0)	(1)	(1)
PILOT IN COMMAND	0	0	0	0	1	1
MISJUDGED	(1)	(0)	(1)	(3)	(0)	(3)
PILOT IN COMMAND	1	0	1	3	0	3
PROPER ALTITUDE	(1)	(0)	(1)	(3)	(0)	(3)
BELOW	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
NOT MAINTAINED	(1)	(0)	(1)	(2)	(0)	(2)

CAUSE/FACTOR TABLE
NON SCHEDULED 14 CFR 135 OPERATIONS
1984

	FATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
AIRCRAFT, ENVIRONMENT, HUMAN PERFORMANCE (Continued)						
HUMAN PERFORMANCE (Continued)						
OPERATIONS (Continued)						
AIRCRAFT HANDLING (Continued)						
PROPER ALTITUDE (Continued)						
PILOT IN COMMAND	1	0	1	2	0	2
AUTOROTATION	(0)	(0)	(0)	(1)	(4)	(5)
ATTEMPTED	(0)	(0)	(0)	(0)	(1)	(1)
PILOT IN COMMAND	0	0	0	0	1	1
MISJUDGED	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
PERFORMED	(0)	(0)	(0)	(0)	(3)	(3)
PILOT IN COMMAND	0	0	0	0	3	3
DESCENT	(2)	(0)	(2)	(2)	(0)	(2)
INADVERTENT	(1)	(0)	(1)	(1)	(0)	(1)
PILOT IN COMMAND	1	0	1	1	0	1
PERFORMED	(1)	(0)	(1)	(1)	(0)	(1)
PILOT IN COMMAND	1	0	1	1	0	1
PROPER DESCENT RATE	(0)	(0)	(0)	(5)	(0)	(5)
EXCEEDED	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
NOT MAINTAINED	(0)	(0)	(0)	(3)	(0)	(3)
PILOT IN COMMAND	0	0	0	3	0	3
UNCONTROLLED	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
CLEARANCE	(4)	(0)	(4)	(10)	(1)	(11)
MISJUDGED	(1)	(0)	(1)	(2)	(0)	(2)
PILOT IN COMMAND	1	0	1	2	0	2
NOT ATTAINED	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
NOT MAINTAINED	(3)	(0)	(3)	(7)	(0)	(7)
PILOT IN COMMAND	3	0	3	6	0	6
DRIVER OF VEHICLE	0	0	0	1	0	1
NOT POSSIBLE	(0)	(0)	(0)	(0)	(1)	(1)
PILOT IN COMMAND	0	0	0	0	1	1
CLIMB	(0)	(0)	(0)	(3)	(0)	(3)
NOT ATTAINED	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
NOT MAINTAINED	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
NOT POSSIBLE	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
MINIMUM DESCENT ALTITUDE	(0)	(0)	(0)	(1)	(0)	(1)
NOT MAINTAINED	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
PROPER ALIGNMENT	(0)	(0)	(0)	(2)	(0)	(2)
NOT MAINTAINED	(0)	(0)	(0)	(2)	(0)	(2)
PILOT IN COMMAND	0	0	0	2	0	2
PROPER TOUCHDOWN POINT	(0)	(0)	(0)	(1)	(0)	(1)
NOT ATTAINED	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
LIFT-OFF	(0)	(0)	(0)	(1)	(0)	(1)
PREMATURE	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
LEVEL OFF	(0)	(0)	(0)	(1)	(0)	(1)
NOT MAINTAINED	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
FLARE	(0)	(0)	(0)	(5)	(0)	(5)

**CAUSE/FACTOR TABLE
NON SCHEDULED 14 CFR 135 OPERATIONS
1984**

	FATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
AIRCRAFT, ENVIRONMENT, HUMAN PERFORMANCE (Continued)						
HUMAN PERFORMANCE (Continued)						
OPERATIONS (Continued)						
AIRCRAFT HANDLING (Continued)						
FLARE (Continued)						
DELAYED	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
IMPROPER	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
INADEQUATE	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
MISJUDGED	(0)	(0)	(0)	(2)	(0)	(2)
PILOT IN COMMAND	0	0	0	2	0	2
GROUND LOOP/SWERVE	(0)	(0)	(0)	(4)	(0)	(4)
INTENTIONAL	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
NOT CORRECTED	(0)	(0)	(0)	(2)	(0)	(2)
PILOT IN COMMAND	0	0	0	2	0	2
UNCONTROLLED	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
DESIGN STRESS LIMITS OF AIRCRAFT	(1)	(0)	(1)	(1)	(0)	(1)
EXCEEDED	(1)	(0)	(1)	(1)	(0)	(1)
PILOT IN COMMAND	1	0	1	1	0	1
DIRECTIONAL CONTROL	(0)	(0)	(0)	(11)	(3)	(14)
NOT MAINTAINED	(0)	(0)	(0)	(7)	(1)	(8)
PILOT IN COMMAND	0	0	0	7	0	7
NO PERSON SPECIFIED	0	0	0	0	1	1
NOT POSSIBLE	(0)	(0)	(0)	(4)	(1)	(5)
PILOT IN COMMAND	0	0	0	4	1	5
REDUCED	(0)	(0)	(0)	(0)	(1)	(1)
NO PERSON SPECIFIED	0	0	0	0	1	1
REMEDIAL ACTION	(0)	(0)	(0)	(2)	(2)	(4)
DELAYED	(0)	(0)	(0)	(1)	(1)	(2)
PILOT IN COMMAND	0	0	0	1	1	2
IMPROPER	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
NOT POSSIBLE	(0)	(0)	(0)	(0)	(1)	(1)
PILOT IN COMMAND	0	0	0	0	1	1
MISSED APPROACH	(1)	(0)	(1)	(1)	(0)	(1)
DELAYED	(1)	(0)	(1)	(1)	(0)	(1)
PILOT IN COMMAND	1	0	1	1	0	1
EMERGENCY PROCEDURE	(1)	(0)	(1)	(3)	(0)	(3)
IMPROPER	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
NOT FOLLOWED	(1)	(0)	(1)	(1)	(0)	(1)
PILOT IN COMMAND	1	0	1	1	0	1
NOT UNDERSTOOD	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
PRECAUTIONARY LANDING	(0)	(0)	(0)	(2)	(0)	(2)
INITIATED	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
PERFORMED	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
ROTATION	(0)	(0)	(0)	(2)	(0)	(2)
INADVERTENT	(0)	(0)	(0)	(1)	(0)	(1)
NO PERSON SPECIFIED	0	0	0	1	0	1
PREMATURE	(0)	(0)	(0)	(1)	(0)	(1)

CAUSE/FACTOR TABLE
NONSCHEDULED 14 CFR 135 OPERATIONS
1984

	FATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
AIRCRAFT, ENVIRONMENT, HUMAN PERFORMANCE (Continued)						
HUMAN PERFORMANCE (Continued)						
OPERATIONS (Continued)						
AIRCRAFT HANDLING (Continued)						
ROTATION (Continued)						
PILOT IN COMMAND	0	0	0	1	0	1
STARTING PROCEDURE	(0)	(1)	(1)	(1)	(1)	(2)
ATTEMPTED	(0)	(1)	(1)	(0)	(1)	(1)
PILOT IN COMMAND	0	1	1	0	1	1
IMPROPER	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
STALL	(1)	(0)	(1)	(3)	(0)	(3)
INADVERTENT	(1)	(0)	(1)	(2)	(0)	(2)
PILOT IN COMMAND	1	0	1	2	0	2
UNCONTROLLED	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
STALL/MUSH	(0)	(0)	(0)	(0)	(1)	(1)
INADVERTENT	(0)	(0)	(0)	(0)	(1)	(1)
PILOT IN COMMAND	0	0	0	0	1	1
WHEELS UP LANDING	(0)	(0)	(0)	(2)	(0)	(2)
INADVERTENT	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
PERFORMED	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
ROTOR RPM	(0)	(0)	(0)	(0)	(1)	(1)
INADEQUATE	(0)	(0)	(0)	(0)	(1)	(1)
PILOT IN COMMAND	0	0	0	0	1	1
RUN ON LANDING	(0)	(0)	(0)	(1)	(0)	(1)
INADVERTENT	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
VERTICAL TAKEOFF	(0)	(0)	(0)	(1)	(0)	(1)
IMPROPER	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
COMMUNICATIONS/INFORMATION/ATC	(0)	(0)	(0)	(4)	(2)	(6)
INSTRUCTIONS, WRITTEN/VERBAL	(0)	(0)	(0)	(0)	(1)	(1)
DISREGARDED	(0)	(0)	(0)	(0)	(1)	(1)
PILOT IN COMMAND	0	0	0	0	1	1
CREW/GROUP COORDINATION	(0)	(0)	(0)	(1)	(0)	(1)
INADEQUATE	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
SUPERVISION	(0)	(0)	(0)	(1)	(0)	(1)
INADEQUATE	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
UNSAFE/HAZARDOUS CONDITION	(0)	(0)	(0)	(2)	(0)	(2)
DISREGARDED	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
NOT IDENTIFIED	(0)	(0)	(0)	(1)	(0)	(1)
OTHER PERSON	0	0	0	1	0	1
UNSAFE/HAZARDOUS CONDITION WARNING	(0)	(0)	(0)	(0)	(1)	(1)
NOT ISSUED	(0)	(0)	(0)	(0)	(1)	(1)
NO PERSON SPECIFIED	0	0	0	0	1	1
MISCELLANEOUS	(0)	(0)	(0)	(1)	(0)	(1)
CONTROL INTERFERENCE	(0)	(0)	(0)	(1)	(0)	(1)
INADVERTENT	(0)	(0)	(0)	(1)	(0)	(1)
NO PERSON SPECIFIED	0	0	0	1	0	1
UNDETERMINED	4	0	4	12	0	12
DIRECT UNDERLYING CAUSE FACTORS:	(5)	(10)	(15)	(17)	(32)	(49)
IMPROPER USE OF PROCEDURE	(1)	(7)	(8)	(4)	(17)	(21)
IMPROPER USE OF PROCEDURE	(1)	(0)	(1)	(1)	(0)	(1)

CAUSE/FACTOR TABLE
NONSCHEDED 14 CFR 135 OPERATIONS
1984

	FATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE FACTOR	TOTAL	CAUSE FACTOR	TOTAL	CAUSE FACTOR	TOTAL
DIRECT UNDERLYING CAUSE FACTORS: (Continued)						
IMPROPER USE OF PROCEDURE (Continued)						
IMPROPER USE OF PROCEDURE (Continued)						
PILOT IN COMMAND	1	0	1	1	0	1
INATTENTIVE	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
COMPLACENCY	(0)	(0)	(0)	(1)	(1)	(2)
PILOT IN COMMAND	0	0	0	1	1	2
OVER CONFIDENCE IN PERSONAL ABILITY	(0)	(1)	(1)	(0)	(3)	(3)
PILOT IN COMMAND	0	1	1	0	3	3
PRESSURE	(0)	(1)	(1)	(0)	(1)	(1)
PILOT IN COMMAND	0	1	1	0	1	1
SELF-INDUCED PRESSURE	(0)	(1)	(1)	(0)	(1)	(1)
PILOT IN COMMAND	0	1	1	0	1	1
COMPANY-INDUCED PRESSURE	(0)	(0)	(0)	(0)	(1)	(1)
COMPANY/OPERATOR MGMT	0	0	0	0	1	1
PRESSURE INDUCED BY OTHERS	(0)	(0)	(0)	(0)	(1)	(1)
PILOT IN COMMAND	0	0	0	0	1	1
VISUAL/AURAL PERCEPTION	(0)	(0)	(0)	(0)	(1)	(1)
PILOT IN COMMAND	0	0	0	0	1	1
QUALIFICATION	(0)	(1)	(1)	(0)	(1)	(1)
PILOT IN COMMAND	0	1	1	0	1	1
IMPROPER TRAINING	(0)	(0)	(0)	(1)	(0)	(1)
COMPANY/OPERATOR MGMT	0	0	0	1	0	1
EXPERIENCE	(0)	(1)	(1)	(0)	(1)	(1)
PILOT IN COMMAND	0	1	1	0	1	1
LACK OF FAMILIARITY WITH AIRCRAFT	(0)	(0)	(0)	(0)	(2)	(2)
PILOT IN COMMAND	0	0	0	0	2	2
LACK OF TOTAL EXPERIENCE IN TYPE OF AIRCRAFT	(0)	(0)	(0)	(0)	(1)	(1)
PILOT IN COMMAND	0	0	0	0	1	1
LACK OF RECENT EXPERIENCE	(0)	(1)	(1)	(0)	(1)	(1)
PILOT IN COMMAND	0	1	1	0	1	1
LACK OF RECENT EXPERIENCE IN TYPE OPERATION	(0)	(1)	(1)	(0)	(1)	(1)
PILOT IN COMMAND	0	1	1	0	1	1
INFORMATION UNAVAILABLE	(0)	(0)	(0)	(0)	(1)	(1)
COMPANY MAINTENANCE PSNL	0	0	0	0	1	1
IMPROPER USE OF EQUIPMENT/AIRCRAFT	(4)	(1)	(5)	(8)	(11)	(19)
IMPROPER USE OF EQUIPMENT/AIRCRAFT	(1)	(0)	(1)	(1)	(0)	(1)
PILOT IN COMMAND	1	0	1	1	0	1
PSYCHOLOGICAL CONDITION	(0)	(1)	(1)	(0)	(1)	(1)
PILOT IN COMMAND	0	1	1	0	1	1
DIVERTED ATTENTION	(1)	(0)	(1)	(1)	(2)	(3)
PILOT IN COMMAND	1	0	1	1	2	3
INATTENTIVE	(1)	(0)	(1)	(1)	(0)	(1)
PILOT IN COMMAND	1	0	1	1	0	1
OVER CONFIDENCE IN PERSONAL ABILITY	(0)	(0)	(0)	(1)	(1)	(2)
PILOT IN COMMAND	0	0	0	1	1	2
SELF-INDUCED PRESSURE	(1)	(0)	(1)	(1)	(1)	(2)
PILOT IN COMMAND	1	0	1	1	1	2
PRESSURE INDUCED BY OTHERS	(0)	(0)	(0)	(0)	(1)	(1)
OTHER PERSONNEL	0	0	0	0	1	1
VISUAL/AURAL PERCEPTION	(0)	(0)	(0)	(1)	(3)	(4)
PILOT IN COMMAND	0	0	0	1	3	4
PILOT OF OTHER AIRCRAFT	0	0	0	0	1	1

CAUSE/FACTOR TABLE
NONSCHEDED 14 CFR 135 OPERATIONS
1984

	FATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE FACTOR	TOTAL		CAUSE FACTOR	TOTAL	
DIRECT UNDERLYING CAUSE FACTORS: (Continued)						
IMPROPER USE OF EQUIPMENT/AIRCRAFT (Continued)						
INCAPACITATION(AlCOHOL)	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
SPATIAL DISORIENTATION	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
LACK OF TOTAL EXPERIENCE IN TYPE OF AIRCRAFT	(0)	(0)	(0)	(0)	(1)	(1)
PILOT IN COMMAND	0	0	0	0	1	1
IMPROPER DECISION	(0)	(2)	(2)	(5)	(3)	(8)
DIVERTED ATTENTION	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
SELF-INDUCED PRESSURE	(0)	(1)	(1)	(0)	(1)	(1)
PILOT IN COMMAND	0	1	1	0	1	1
COMPANY-INDUCED PRESSURE	(0)	(1)	(1)	(0)	(1)	(1)
COMPANY/OPERATOR MGMT	0	1	1	0	1	1
OTHER PERSONNEL	0	0	0	1	0	1
VISUAL/AURAL PERCEPTION	(0)	(0)	(0)	(1)	(0)	(1)
OTHER PERSONNEL	0	0	0	1	0	1
PHYSICAL IMPAIRMENT(AlCOHOL)	(0)	(0)	(0)	(1)	(0)	(1)
PILOT IN COMMAND	0	0	0	1	0	1
FATIGUE(LACK OF SLEEP)	(0)	(0)	(0)	(0)	(1)	(1)
PILOT IN COMMAND	0	0	0	0	1	1
INADEQUATE TRAINING	(0)	(0)	(0)	(1)	(0)	(1)
OTHER PERSONNEL	0	0	0	1	0	1
MATERIAL INADEQUATE	(0)	(0)	(0)	(0)	(1)	(1)
MATERIAL DEFECT(INADEQUATE QUALITY CONTROL)	(0)	(0)	(0)	(0)	(1)	(1)
MANUFACTURER	0	0	0	0	1	1