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NATIONAL TRANSPORTATION SAFETY BOARD

WASHINGTON, D.C. 20594

ANNUAL REVIEW OF AIRCRAFT ACCIDENT DATA

U.S. AIR CARRIER OPERATIONS CALENDAR YEAR 1982

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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 1982. In 1979 and prior years, accidents involving the smaller aircraft used by Commuters and On Demand Air Taxis were reported in annual reviews of general aviation accidents.

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 1982 accidents to enable comparison with prior years.

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INTRODUCTION

This report presents a statistical compilation and review of air carrier accidents which occurred in 1982. 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 Civil Aeronautics Board (CAB). 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 1982 and for each of the two preceding years. Several tables then present accident parameters for 1982 only. Concluding each section are tabulations which present comparative statistics for 1982 and for the five-year period 1977-1981.

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 1982 occurrences to accident types under the old 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 1982 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

The total of 234 fatal injuries in Part 121, 125 and 127 operations in 1982 represents a substantial increase over the previous two years in which a combined total of only five fatalities occurred. The most serious accidents were the crashes following takeoff of a Boeing 737 in Washington, D.C. (78 fatalities) and a Boeing 727 in New Orleans, Louisiana (153 fatalities). Four of the 19 total accidents, including one of the four fatal accidents involved cargo-only flights.

The overall accident rate for Part 121, 125 and 127 operations in 1982 was 0.283 accidents per 100,000 aircraft hours flown. This is the second best rate in the eight-year period presented in Table 18. The fatal accident rate (0.060) is the fifth lowest of the eight years, and almost identical to the 1981 fatal accident rate. Of the 19 accidents which occurred in 1982, there were cause or factor citations related to the Airport, Airways, or Facilities in six accidents, more than three times the mean (1.8 per year) for the prior five years. Such factors had been cited for fatal accidents only once in the 1977-1981 period, but three times in 1982.

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

Accidents	1982	1981	1980
Fatal	4	4	1
Involved Serious Injury	7	11	11
Involved Minor or No Injury	8	11	7
Total	19	26	19
Fatalities			
Passenger	209	1	0
Crew	13	1	0
Other Persons	12	2	1
Total	234	4	1
Aircraft Damage (14 CFR 121)			
Destroyed	3	1	2
Substantial	9	12	9
Minor	2	1	2
None	4	12	6
Unknown	1	0	0
Total	19	26	19
Aircraft Damage (Other)*			
Destroyed	0	0	0
Substantial	0	0	1
Minor	0	0	0
None	0	0	0
Total	0	0	1

* Other aircraft are those aircraft not operated under 14 CFR 121 that were involved in on-ground or in-flight collisions with aircraft operated under 14 CFR 121.

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

	1982	1981	1980
Aircraft Miles Flown (Thousands)	2,804,475	2,798,575	2,924,234
Aircraft Hours Flown	6,702,251	6,810,255	7,067,468
Departures Flown	5,094,208	5,329,049	5,479,352
Accident Rates			
Per Million Miles Flown	0.0068	0.0093	0.0065
Per Hundred Thousand Hours Flown	0.283	0.382	0.269
Per Hundred Thousand Departures Flown	0.373	0.488	0.347
Fatal Accident Rates			
Per Million Miles Flown	0.0014	0.0014	0.0003
Per Hundred Thousand Hours Flown	0.060	0.059	0.014
Per Hundred Thousand Departures Flown	0.079	0.075	0.018

Table 3 - LIST OF ACCIDENTS
14 CFR 121, 125, 127 OPERATIONS
1982

Date	Location	Type of Operation	Air Carrier	Aircraft Type	Aircraft Damage	Degree of Injury	First Occurrence
1/07	Laredo, TX	Nonsch Cargo	South Central Aviation	C46	Substantial	None	Explosion
1/13	Washington, DC	Sch Passenger	Air Florida, Inc	737-222	Destroyed	Fatal (78)	In flight collision with terrain
1/23	Boston, MA	Sch Passenger	World Airways, Inc.	DC-10-30	Destroyed	Fatal (2)	Overrun
2/03	Philadelphia, PA	Sch Passenger	United Airlines Inc.	DC-10-10	Minor	Serious	Overrun
2/16	King Salmon, AK	Sch Passenger	Reeve Aleutian	YS-11A	Substantial	Minor	Loss of power(partial) - non-mechanical
2/17	Miami, FL	Sch Passenger	Pan American World Airways, Inc.	727-235	Substantial	Serious	Loss of power(partial) - mech failure/malfunction
3/28	Wulik River Strip, AK	Nonsch Cargo	Woods Air Fuel	C-46A	Substantial	None	Undershoot
4/18	Austin, TX	Sch Passenger	Continental Airlines, Inc.	727-200	Substantial	None	Main gear collapsed
5/22	Memphis, TN	Sch Passenger	Republic Airlines, Inc.	DC-9-15F	None	Serious	In flight encounter with weather
5/26	San Francisco, CA	Sch Passenger	United Airlines	DC10-10	Substantial	Minor	Nose gear collapsed
5/29	Atlantic Ocean	Sch Passenger	Northeastern Int'l. Airways	DC8-52	None	Serious	In flight encounter with weather
5/29	Detroit, MI	Sch Cargo	Providence Airlines Corporation	240	Substantial	None	In flight encounter with weather
7/09	New Orleans, LA	Sch Passenger	Pan American World Airways	727-235	Destroyed	Fatal (153)	In flight collision with object
7/16	Morton, WY	Sch Passenger	United Airlines	DC-10-10	Minor	Serious	In flight encounter with weather
11/02	Austin, TX	Sch Passenger	S.w. Airlines Inc.	737-200	None	Serious	Miscellaneous/other
11/04	Nelson Lagoon, AK	Nonsch Cargo	Northern Air Cargo, Inc.	C-82	Substantial	Serious	Undershoot
11/11	Miami, FL	Nonsch Cargo	Arrow Airways	707-300	None	Fatal (1)	Decompression
11/18	Denver, CO	Sch Passenger	Continental Air Lines, Inc.	DC-10	Substantial	None	Nose gear collapsed
12/09	Denver, CO	Sch Passenger	Frontier Airlines, Inc.	737-291	Substantial	None	Miscellaneous/other

Table 4 - ACCIDENTS AND RATES BY TYPE OF OPERATION
14 CFR 121, 125, 127 OPERATIONS
1982

	Type of Operation				
	Scheduled				
	Passenger/ Cargo	All Cargo	All	All Non-Scheduled	All
Accidents	14	1	15	4	19
Fatal Accidents	3	0	3	1	4
Aircraft Miles Flown (Thousands)	2,631,970	66,958	2,698,928	105,547	2,804,475
Aircraft Hours Flown	n/a*	n/a	6,440,163	262,088	6,702,251
Departures Flown	n/a	n/a	4,963,794	130,414	5,094,208
Accident Rates					
Per Million Miles Flown	0.0053	0.0149	0.0056	0.0379	0.0068
Per Hundred Thousand Hours Flown	n/a	n/a	0.233	1.526	0.283
Per Hundred Thousand Departures Flown	n/a	n/a	0.302	3.067	0.373
Fatal Accident Rates					
Per Million Miles Flown	0.0011	0	0.0011	0.0095	0.0014
Per Hundred Thousand Hours Flown	n/a	0	0.047	0.382	0.060
Per Hundred Thousand Departures Flown	n/a	0	0.060	0.767	0.079

* Data not available from CAB

Table 5 - PERSONS BY ROLE AND DEGREE OF INJURY
14 CFR 121, 125, 127 OPERATIONS
1982

Role of Person	Degree of Injury: Fatal	Serious	Minor	None	Total
Pilot	2	2	0	15	19
Copilot	2	1	0	16	19
Flight engineer	1	0	0	9	10
Loadmaster	0	0	0	1	1
Other cockpit crew	2	0	0	5	7
Cabin crew	6	7	8	50	71
Passenger	209	13	65	1086	1373
Total aboard	222	23	73	1182	1500
Other ground	12	10	3	7	32
Grand total	234	33	76	1189	1532
Percent	15.3	2.2	5.0	77.6	

Table 6 - AIRCRAFT BY DAMAGE AND DEGREE OF INJURY
14 CFR 121, 125, 127 OPERATIONS
1982

Aircraft damage	Degree of injury: Fatal	Serious	Minor	None	Aircraft: No.	Percent
Destroyed	3	0	0	0	3	15.8
Substantial	0	2	2	5	9	47.4
Minor	0	2	0	0	2	10.5
None	1	3	0	0	4	21.1
Not reported	0	0	0	1	1	5.3
Aircraft						
Number -	4	7	2	6	19	
Percent -	21.1	36.8	10.5	31.6		

Table 7 - AIRCRAFT BY FIRST OCCURRENCE AND DEGREE OF INJURY
14 CFR 121, 125, 127 OPERATIONS
1982

Type of first occurrence	Degree of injury				Aircraft	
	Fatal	Serious	Minor	None	No.	Percent
Decompression	1	0	0	0	1	5.3
Explosion	0	0	0	1	1	5.3
Main gear collapsed	0	0	0	1	1	5.3
Nose gear collapsed	0	0	1	1	2	10.5
In flight collision with object	1	0	0	0	1	5.3
In flight collision with terrain	1	0	0	0	1	5.3
In flight encounter with weather	0	3	0	1	4	21.1
Overrun	1	1	0	0	2	10.5
Loss of power(partial) - mech failure/malfunction	0	1	0	0	1	5.3
Loss of power(partial) - non-mechanical	0	0	1	0	1	5.3
Undershoot	0	1	0	1	2	10.5
Miscellaneous/other	0	1	0	1	2	10.5
Aircraft						
Number -	4	7	2	6	19	
Percent -	21.1	36.8	10.5	31.6		

Table 8 - AIRCRAFT BY FIRST OCCURRENCE AND DAMAGE
14 CFR 121, 125, 127 OPERATIONS
1982

Type of first occurrence	Aircraft damage: Destr	Subst	Minor	None	Not reptd	Aircraft: No.	Percent
Decompression	0	0	0	1	0	1	5.3
Explosion	0	1	0	0	0	1	5.3
Main gear collapsed	0	1	0	0	0	1	5.3
Nose gear collapsed	0	2	0	0	0	2	10.5
In flight collision with object	1	0	0	0	0	1	5.3
In flight collision with terrain	1	0	0	0	0	1	5.3
In flight encounter with weather	0	1	1	2	0	4	21.1
Overrun	1	0	1	0	0	2	10.5
Loss of power(partial) - mech failure/malfunction	0	1	0	0	0	1	5.3
Loss of power(partial) - non-mechanical	0	1	0	0	0	1	5.3
Undershoot	0	2	0	0	0	2	10.5
Miscellaneous/other	0	0	0	1	1	2	10.5
Aircraft							
Number -	3	9	2	4	1	19	
Percent -	15.8	47.4	10.5	21.1	5.3		

Table 9 - AIRCRAFT BY FIRST OCCURRENCE AND BROAD PHASE OF OPERATION
14 CFR 121, 125, 127 OPERATIONS
1982

Type of first occurrence	Phase of operation								Aircraft	
	Stndg	Taxi	Tkoff	Climb	Cruis	Dscnt	Aprch	Landg	No.	Percent
Decompression	0	0	0	1	0	0	0	0	1	5.3
Explosion	1	0	0	0	0	0	0	0	1	5.3
Main gear collapsed	0	0	0	0	0	0	0	1	1	5.3
Nose gear collapsed	1	1	0	0	0	0	0	0	2	10.5
In flight collision with object	0	0	1	0	0	0	0	0	1	5.3
In flight collision with terrain	0	0	1	0	0	0	0	0	1	5.3
In flight encounter with weather	0	0	0	0	2	1	1	0	4	21.1
Overrun	0	0	1	0	0	0	0	1	2	10.5
Loss of power(partial) - mech failure/malfunction	0	0	1	0	0	0	0	0	1	5.3
Loss of power(partial) - non-mechanical	0	0	0	0	0	0	1	0	1	5.3
Undershoot	0	0	0	0	0	0	2	0	2	10.5
Miscellaneous/other	0	1	0	1	0	0	0	0	2	10.5
Aircraft										
Number -	2	2	4	2	2	1	4	2	19	
Percent -	10.5	10.5	21.1	10.5	10.5	5.3	21.1	10.5		

Table 10 - AIRCRAFT BY PHASE OF OPERATION AND DEGREE OF INJURY
14 CFR 121, 125, 127 OPERATIONS
1982

Phase of operation	Degree of injury: Fatal	Serious	Minor	None	Aircraft: No.	Percent
Standing - starting engine(s)	0	0	0	1	1	5.3
Standing - engine(s) not operating	0	0	0	1	1	5.3
Taxi - pushback/tow	0	0	1	0	1	5.3
Taxi - to takeoff	0	0	0	1	1	5.3
Takeoff	0	1	0	0	1	5.3
Takeoff - ground run	0	1	0	0	1	5.3
Takeoff - initial climb	2	0	0	0	2	10.5
Climb	1	0	0	0	1	5.3
Climb - to cruise	0	1	0	0	1	5.3
Cruise - normal	0	2	0	0	2	10.5
Descent - normal	0	1	0	0	1	5.3
Approach	0	0	1	0	1	5.3
Approach - VFR pattern - final approach	0	1	0	1	2	10.5
Approach - FAF/outer marker to threshold (IFR)	0	0	0	1	1	5.3
Landing - roll	1	0	0	1	2	10.5
Aircraft						
Number -	4	7	2	6	19	
Percent -	21.1	36.8	10.5	31.6		

Table 11 - AIRCRAFT BY PHASE OF OPERATION AND AIRCRAFT DAMAGE
14 CFR 121, 125, 127 OPERATIONS
1982

Phase of operation	Aircraft damage					Aircraft	
	Destr	Subst	Minor	None	Not reptd	No.	Percent
Standing - starting engine(s)	0	1	0	0	0	1	5.3
Standing - engine(s) not operating	0	1	0	0	0	1	5.3
Taxi - pushback/tow	0	1	0	0	0	1	5.3
Taxi - to takeoff	0	0	0	0	1	1	5.3
Takeoff	0	0	1	0	0	1	5.3
Takeoff - ground run	0	1	0	0	0	1	5.3
Takeoff - initial climb	2	0	0	0	0	2	10.5
Climb	0	0	0	1	0	1	5.3
Climb - to cruise	0	0	0	1	0	1	5.3
Cruise - normal	0	0	1	1	0	2	10.5
Descent - normal	0	0	0	1	0	1	5.3
Approach	0	1	0	0	0	1	5.3
Approach - VFR pattern - final approach	0	2	0	0	0	2	10.5
Approach - FAF/outer marker to threshold (IFR)	0	1	0	0	0	1	5.3
Landing - roll	1	1	0	0	0	2	10.5
Aircraft							
Number -	3	9	2	4	1	19	
Percent -	15.8	47.4	10.5	21.1	5.3		

Table 12 - AIRCRAFT BY CONDITION OF LIGHT AND TYPE OF WEATHER
14 CFR 121, 125, 127 OPERATIONS
1982

Condition of light	Type of Weather: VMC	Type of Weather: IMC	Aircraft: No.	Aircraft: Percent
Daylight	11	2	13	68.4
Night (dark)	4	2	6	31.6
Aircraft				
Number -	15	4	19	
Percent -	78.9	21.1		

Table 13 - AIRCRAFT BY TYPE OF OPERATION AND DEGREE OF INJURY
14 CFR 121, 125, 127 OPERATIONS
1982

Type of Operation	Degree of Injury: Fatal	Degree of Injury: Serious	Degree of Injury: Minor	Degree of Injury: None	Aircraft: No.	Aircraft: Percent
Scheduled Domestic Passenger	3	6	2	3	14	73.7
Scheduled Domestic Cargo	0	0	0	1	1	5.3
Nonscheduled Domestic Cargo	0	1	0	1	2	10.5
Nonscheduled International Cargo	1	0	0	1	2	10.5
Aircraft - Number	4	7	2	6	19	
- Percent	21.1	36.8	10.5	31.6		

Table 14 - AIRCRAFT BY FIRST OCCURRENCE AND PROXIMITY TO AIRPORT
14 CFR 121, 125, 127 OPERATIONS
1982

Type of first occurrence	Proximity to airport: On airpt	On air-strip	Less than 5 nm from airpt	5 nm or more from airpt	Aircraft: No.	Percent
Decompression	0	0	0	1	1	5.3
Explosion	1	0	0	0	1	5.3
Main gear collapsed	1	0	0	0	1	5.3
Nose gear collapsed	2	0	0	0	2	10.5
In flight collision with object	0	0	1	0	1	5.3
In flight collision with terrain	0	0	1	0	1	5.3
In flight encounter with weather	1	0	0	3	4	21.1
Overrun	1	0	1	0	2	10.5
Loss of power(partial) - mech failure/malfunction	1	0	0	0	1	5.3
Loss of power(partial) - non-mechanical	0	0	1	0	1	5.3
Undershoot	1	1	0	0	2	10.5
Miscellaneous/other	1	0	0	1	2	10.5
Aircraft						
Number -	9	1	4	5	19	
Percent -	47.4	5.3	21.1	26.3		

Table 15 - AIRCRAFT BY FIRE ON GROUND AND AIRCRAFT DAMAGE
14 CFR 121, 125, 127 OPERATIONS
1982

	Aircraft damage					Aircraft	
Fire on ground	Destr	Subst	Minor	None	Not reptd	No.	Percent
Yes	1	3	0	0	0	4	21.1
No	2	6	2	4	0	14	73.7
Other	0	0	0	0	1	5.3	
Aircraft							
Number -	3	9	2	4	1	19	
Percent -	15.8	47.4	10.5	21.1	5.3		

Table 16 - AIRCRAFT BY FIRE ON GROUND AND DEGREE OF INJURY
14 CFR 121, 125, 127 OPERATIONS
1982

	Degree of injury				Aircraft	
Fire on ground	Fatal	Serious	Minor	None	No.	Percent
Yes	1	1	1	1	4	21.1
No	3	6	1	4	14	73.7
Other	0	0	0	1	1	5.3
Aircraft						
Number -	4	7	2	6	19	
Percent -	21.1	36.8	10.5	31.6		

Table 17 - BROAD CAUSE/FACTOR ASSIGNMENTS*
14 CFR 121, 125, 127 OPERATIONS
1982

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
Personnel	1	5	2	7	2	11
Weather	1	4	3	7	3	10
Pilot	1	7	2	4	2	8
Airport/Airways/Facilities	0	1	3	5	3	6
Powerplant	1	3	0	1	1	4
Terrain	0	0	1	3	1	3
Miscellaneous	0	0	1	2	1	2
Landing Gear	0	2	0	0	0	2
Systems	1	1	0	0	1	1
Airframe	1	1	0	0	1	1
Undetermined	0	1	0	0	0	1
Number of Aircraft					4	19

* Multiple causes and factors may be assigned in an accident

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

Year	Accidents	Fatal Accidents	Fatalities	
			Total	Aboard Part 121 Aircraft
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

Year	Hours Flown	Accident Rates per 100,000 Aircraft 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	6,234,626	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

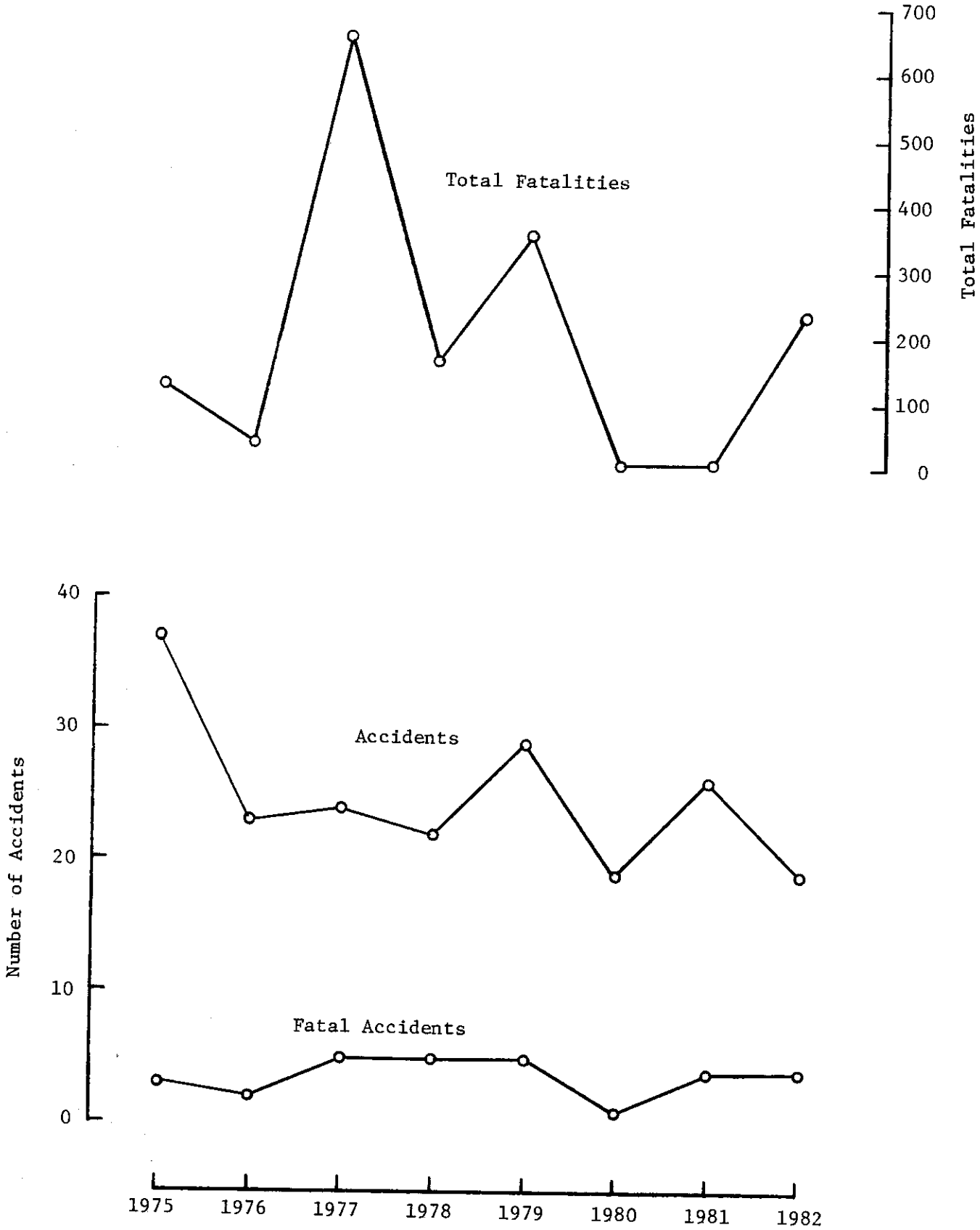

Figure 1 - ACCIDENTS, FATAL ACCIDENTS, AND FATALITIES
14 CFR 121, 125, 127 OPERATIONS

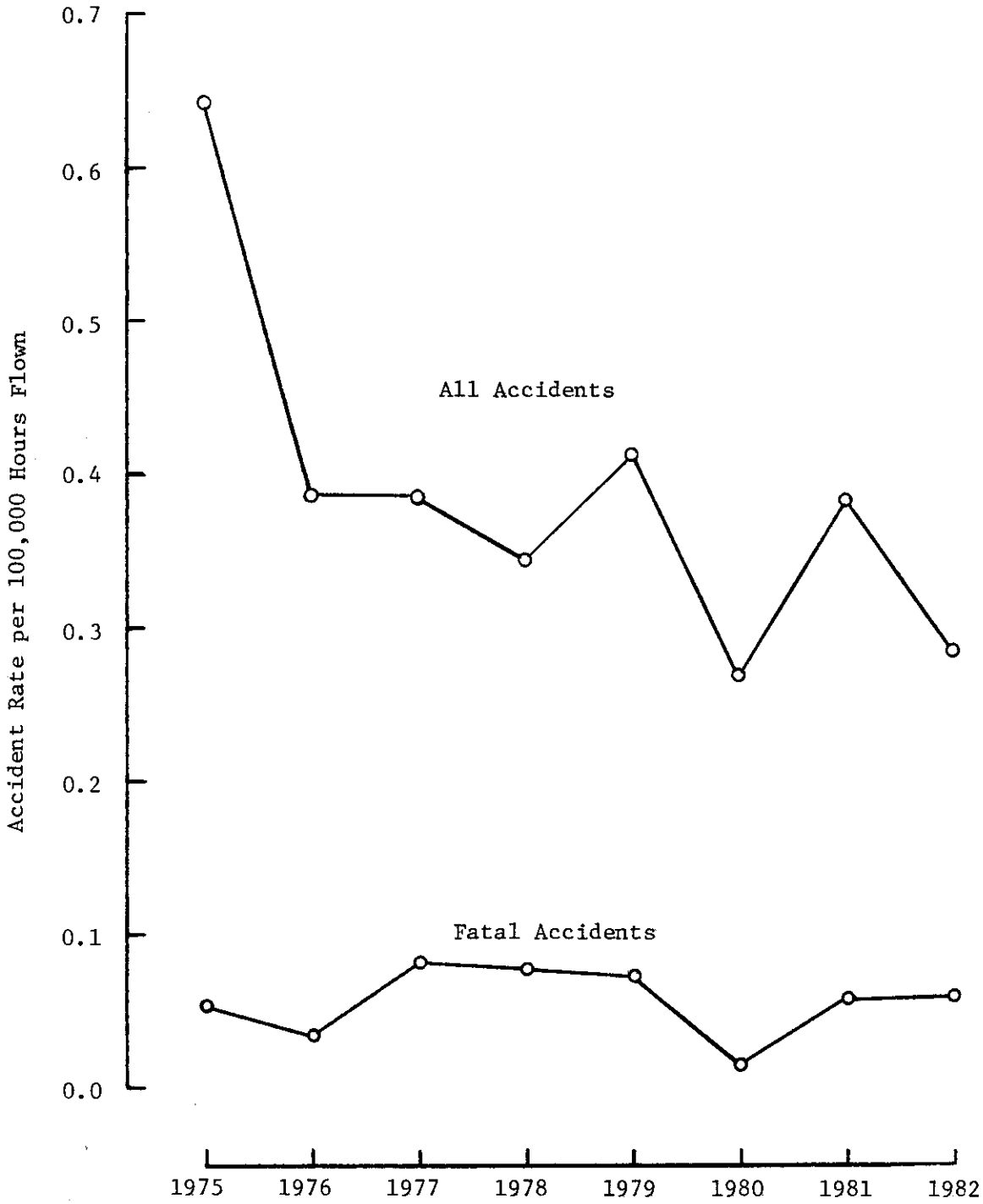

Figure 2 - ACCIDENT RATES
14 CFR 121, 125, 127 OPERATIONS

Table 19 - MOST PREVALENT FIRST OCCURRENCES IN ALL ACCIDENTS
14 CFR 121, 125, 127 OPERATIONS
1982 AND 1977 - 1981

	1982		1977 -1981	
Type of Occurrence *	No.	Percent	Mean	Percent
Encounter with weather/turbulence	4	21.1	6.0	24.6
Collision with object/terrain	2	10.5	4.2	17.2
Miscellaneous	5	26.3	4.0	16.4
Loss of power	2	10.5	1.8	7.4
Airframe/component/system fail/malf	0	.0	1.4	5.7
Gear collapsed/retracted	3	15.8	1.4	5.7
Loss of control - on ground	0	.0	1.4	5.7
Fire/explosion	1	5.3	1.2	4.9
Undershoot	2	10.5	.6	2.5
Altitude deviation, uncontrolled	0	.0	.4	1.6
Engine tearaway	0	.0	.4	1.6
Hard landing	0	.0	.4	1.6
(All other types)	0	.0	1.2	4.9
Total	19	100.0	24.4	100.0

* Type of Occurrence is an accident classification mechanism created to enable comparisons between 1982 Occurrences and pre-1982 Accident Types in this table and in other tables entitled "Most Prevalent First Occurrences ...". For a full explanation of the rationale behind the development of the "historical comparison categories" listed under Type of Occurrence above, see the description of "Occurrences" in Appendix A, Explanatory Notes.

Table 20 - MOST PREVALENT FIRST OCCURRENCES IN FATAL ACCIDENTS
14 CFR 121, 125, 127 OPERATIONS
1982 AND 1977 - 1981

Type of Occurrence	1982 No.	1982 Percent	1977 -1981 Mean	1977 -1981 Percent
Miscellaneous	2	50.0	1.4	35.0
Collision with object/terrain	2	50.0	.8	20.0
Airframe/component/system fail/malf	0	.0	.6	15.0
Loss of power	0	.0	.4	10.0
Engine tearaway	0	.0	.2	5.0
Gear collapsed/retracted	0	.0	.2	5.0
Loss of control - in flight	0	.0	.2	5.0
Midair collision	0	.0	.2	5.0
Total	4	100.0	4.0	100.0

Table 21 - MOST PREVALENT FIRST PHASES OF OPERATION IN ALL ACCIDENTS
14 CFR 121, 125, 127 OPERATIONS
1982 AND 1977 - 1981

	1982		1977 - 1981	
Phase of Operation	No.	Percent	Mean	Percent
Cruise	2	10.5	5.0	20.5
Taxi	2	10.5	3.8	15.6
Landing	2	10.5	3.8	15.6
Standing	2	10.5	2.8	11.5
Takeoff	4	21.1	2.8	11.5
Descent	1	5.3	2.6	10.7
Approach	4	21.1	1.8	7.4
Climb	2	10.5	1.6	6.6
Other	0	.0	.2	.8
Total	19	100.0	24.4	100.0

Table 22 - MOST PREVALENT FIRST PHASES OF OPERATION IN FATAL ACCIDENTS
14 CFR 121, 125, 127 OPERATIONS
1982 AND 1977 - 1981

	1982		1977 - 1981	
Phase of Operation	No.	Percent	Mean	Percent
Takeoff	2	50.0	.8	20.0
Cruise	0	.0	.8	20.0
Standing	0	.0	.6	15.0
Taxi	0	.0	.6	15.0
Approach	0	.0	.6	15.0
Climb	1	25.0	.4	10.0
Descent	0	.0	.2	5.0
(All other types)	1	25.0	.0	.0
Total	4	100.0	4.0	100.0

Table 23 - BROAD CAUSE/FACTOR ASSIGNMENTS IN ALL ACCIDENTS
14 CFR 121, 125, 127 OPERATIONS
1982 AND 1977 - 1981

	1982		1977 -1981	
Broad Cause/Factor	No.	Percent	Mean	Percent
Personnel	11	57.9	14.2	58.2
Pilot	8	42.1	8.4	34.4
Weather	10	52.6	8.2	33.6
Miscellaneous	2	10.5	2.6	10.7
Landing Gear	2	10.5	2.4	9.8
Powerplant	4	21.1	2.4	9.8
Airport/Airways/Facilities	6	31.6	1.8	7.4
Systems	1	5.3	1.0	4.1
Airframe	1	5.3	.6	2.5
Undetermined	1	5.3	.6	2.5
Instruments/Equipment/Accessories	0	.0	.4	1.6
Rotorcraft	0	.0	.2	.8
Terrain	3	15.8	.2	.8
Number of Aircraft	19		24.4	

Table 24 - BROAD CAUSE/FACTOR ASSIGNMENTS IN FATAL ACCIDENTS
14 CFR 121, 125, 127 OPERATIONS
1982 AND 1977 - 1981

	1982		1977 -1981	
Broad Cause/Factor	No.	Percent	Mean	Percent
Personnel	2	50.0	2.8	70.0
Pilot	2	50.0	1.8	45.0
Weather	3	75.0	1.2	30.0
Landing Gear	0	.0	.6	15.0
Systems	1	25.0	.6	15.0
Powerplant	1	25.0	.4	10.0
Airframe	1	25.0	.2	5.0
Instruments/Equipment/Accessories	0	.0	.2	5.0
Rotorcraft	0	.0	.2	5.0
Airport/Airways/Facilities	3	75.0	.2	5.0
Miscellaneous	1	25.0	.2	5.0
(All other types)	1	25.0	.0	.0
Number of Aircraft	4		4.0	

TABLE 25 - ACCIDENTS AND RATES BY AIRCRAFT MODEL *
14 CFR 121, 125, 127 OPERATIONS
1982

Aircraft Model	Hours Flown	Accidents				Accident Rates Per 100,000 Hours Flown			
				With Cause/Factor				With Cause/Factor	
		All	Fatal	Aircraft	Pilot	All	Fatal	Aircraft	Pilot
A-300	215,154	1	1	0	0	0.465	0.465	0.	0.
BAC 1-11	415,082	2	0	0	1	0.482	0.	0.	0.241
B-707	2,307,861	8	1	1	2	0.347	0.043	0.043	0.087
B-727	15,778,963	31	3	7	10	0.196	0.019	0.044	0.063
B-737	2,939,197	11	1	2	5	0.374	0.034	0.068	0.170
B-747	2,803,900	6	1	2	3	0.214	0.036	0.071	0.107
CV #	619,145	7	0	1	3	1.131	0.	0.162	0.485
DC-8	1,777,899	13	2	6	4	0.731	0.112	0.337	0.225
DC-9	6,063,910	12	1	1	4	0.198	0.016	0.016	0.066
DC-10	2,313,558	16	7	7	3	0.692	0.303	0.303	0.130
L-188	76,893	6	2	4	3	7.803	2.601	5.202	3.902
L-1011	1,694,000	7	1	3	0	0.413	0.059	0.177	0.
YS-11	187,686	3	0	0	1	1.598	0.	0.	0.533

CV - 340, 440, 580, 600, 640

* This table presents hours flown, accidents and rates for the aircraft models most commonly used in Part 121 operations for the years 1977-1982. The models listed are those for which at least one accident occurred in the years 1977 through 1982, and for which at least 50,000 flight hours were reported to CAB by U.S. certificated route air carriers in that 6-year period. The table also lists the numbers of accidents and the corresponding accident rates in which the aircraft and the pilot were cited as a cause or factor in the accident. Aircraft-related factors are those in one of the five categories: airframe, powerplant, systems, instruments/equipment and accessories, and rotorcraft.

Table 26 - SUMMARY OF LOSSES
ALL 14 CFR 135 OPERATIONS

Accidents	1982	1981	1980
Fatal	36	49	53
Involved Serious Injury	19	17	19
Involved Minor or No Injury	104	122	136
Total	159	188	208
Fatalities			
Passenger	53	78	89
Crew	33	46	49
Other Persons	0	4	2
Total	86	128	140
Aircraft Damage (14 CFR 135)			
Destroyed	55	63	60
Substantial	100	122	145
Minor	4	3	1
None	0	0	4
Unknown	2	1	0
Total	161	189	210
Aircraft Damage (Other)*			
Destroyed	0	2	2
Substantial	0	2	1
Minor	0	0	0
None	0	0	0
Total	0	4	3

* 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 27 accidents involving Scheduled 14 CFR 135 operations in 1982. Five of them were fatal accidents involving a total of 14 fatalities (eight passengers and six crewmembers). Each of these statistics is the lowest among the years 1975-1982 presented in this section. Averages for the 1975-1981 period were: 44.1 accidents, 10.9 fatal accidents, and 38.9 fatalities. These decreases and a slight increase in aircraft hours flown resulted in a continuation of the downward trend in the rates of accidents and fatal accidents.

"Loss of power," which accounted for a mean of 11.4 accidents per year in the five-year base period 1977-1981, was the first occurrence in only four accidents and no fatal accidents in 1982. The accident sequence began in the landing phase of operation in only two cases compared to a mean of 10.2 in the base period. The percentage of accidents in which the pilot was cited as a cause or related factor dropped to 48.1 from a five-year mean of 64.8, while the percentage of "airframe" citations increased to 22.2 from only 1.8.

Table 27 - SUMMARY OF LOSSES
SCHEDULED 14 CFR 135 OPERATIONS

Accidents	1982	1981	1980
Fatal	5	9	8
Involved Serious Injury	6	4	6
Involved Minor or No Injury	16	18	24
Total	27	31	38
Fatalities			
Passenger	8	21	27
Crew	6	11	10
Other Persons	0	2	0
Total	14	34	37
Aircraft Damage (Scheduled 14 CFR 135)			
Destroyed	8	10	9
Substantial	17	20	27
Minor	1	1	1
None	0	0	2
Unknown	1	0	0
Total	27	31	39
Aircraft Damage (Other)*			
Destroyed	0	1	0
Substantial	0	1	0
Minor	0	0	0
None	0	0	0
Total	0	2	0

* 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.

Table 28 - ACCIDENT RATES
SCHEDULED 14 CFR 135 OPERATIONS

	1982	1981	1980
Aircraft Miles Flown (Thousands)	222,355	193,001	192,200
Aircraft Hours Flown	1,299,748	1,240,764	1,175,588
Departures Flown	2,026,691	1,835,144	1,776,999
Accident Rates			
Per Million Miles Flown	0.1214	0.1606	0.1977
Per Hundred Thousand Hours Flown	2.077	2.498	3.232
Per Hundred Thousand Departures Flown	1.332	1.689	2.138
Fatal Accident Rates			
Per Million Miles Flown	0.0225	0.0466	0.0416
Per Hundred Thousand Hours Flown	0.385	0.725	0.681
Per Hundred Thousand Departures Flown	0.247	0.490	0.450

Table 29 - LIST OF ACCIDENTS
SCHEDULED 14 CFR 135 OPERATIONS
1982

Date	Location	Type of Operation	Aircraft Type	Aircraft Damage	Degree of Injury	First Occurrence
1/05	Ithaca, NY	Cargo	Piper PA-31	Destroyed	Fatal (2)	Airframe/component/system failure/malfunction
1/15	Jamaica, NY	Passenger	Swearingen SA 226-TC	Substantial	Serious	In flight encounter with weather
1/17	Honolulu, HI	Cargo	Convair 440	Destroyed	Minor	Loss of power(total) - mech failure/malfunction
1/28	Los Gatos, CA	Cargo	Piper 28-151	Destroyed	Fatal (1)	In flight encounter with weather
2/01	Groton, CT	Passenger	Beech 99	Destroyed	Serious	In flight encounter with weather
2/21	Providence, RI	Passenger	DeHavilland DHC-6	Destroyed	Fatal (1)	Fire
5/16	Hooper Bay, AK	Passenger	DeHavilland DHC-6-200	Destroyed	Serious	Loss of control - in flight
5/28	Palm Springs, CA	Passenger	Swearingen SA226-TC	Minor	Serious	Propeller/rotor contact
7/02	Nome, AK	Passenger	Britten-Norman BN-2A	Substantial	None	Airframe/component/system failure/malfunction
7/09	Austin, TX	Cargo	Cessna 402B	Substantial	Serious	Midair collision
8/10	Sidney, NY	Passenger	DeHavilland DH-114	Substantial	None	On ground collision with object
8/20	Kansas City, MO	Pax and Cargo	Swearingen SA226TC	Substantial	None	Airframe/component/system failure/malfunction
9/02	Fairbanks, AK	Passenger	Cessna 402	Substantial	None	On ground collision with terrain
9/05	Near Kipnuk, AK	Cargo	Cessna 207A	Substantial	None	Loss of power(partial) - mech failure/malfunction
9/14	Grand Canyon, AZ	Passenger	Cessna 402	Substantial	Serious	Loss of power(total) - non-mechanical
9/17	Indianapolis, IN	Cargo	Beech G18S	Substantial	None	Airframe/component/system failure/malfunction
10/15	Palm Springs, CA	Passenger	Swearingen SA-226TC	Substantial	Minor	Fire/explosion
10/17	Indianapolis, IN	Passenger	Swearingen SA227-AC	Substantial	None	On ground collision with object
11/05	San Francisco, CA	Passenger	Swearingen SA-226TC	Substantial	Minor	Airframe/component/system failure/malfunction
11/22	Richmond, VA	Cargo	Piper PA-31-350	Substantial	None	Loss of power(total) - mech failure/malfunction
11/26	Gustavus, AK	Cargo	Piper PA-32R-300	Substantial	None	Loss of control - on ground
11/30	New Haven, CT	Passenger	Fokker F-27-100	Substantial	None	On ground collision with object
12/01	Miles City, MT	Passenger	Cessna 310R	Substantial	None	Hard landing
12/07	Pueblo, CO	Cargo	Swearingen SA-227AC	Destroyed	Fatal (2)	In flight collision with terrain
12/07	Chantilly, VA	Passenger	Swearingen SA-226TC	Substantial	None	In flight collision with terrain
12/09	Near Klawock, AK	Passenger	DeHavilland DHC-2	Destroyed	Fatal (8)	In flight collision with terrain
12/20	Gillette, WY	Passenger	Swearingen SA-227AC	Substantial	None	Loss of control - on ground

Table 30 - ACCIDENTS AND RATES BY TYPE OF OPERATION
SCHEDULED 14 CFR 135 OPERATIONS
1982

	Type of Operation	
	Passenger/ Cargo	All
Accidents	16	27
Fatal Accidents	2	5
Aircraft Miles Flown (Thousands)	203,455	222,355*
Aircraft Hours Flown	1,187,970	1,299,748
Departures Flown	1,911,170	2,062,691
Accident Rates		
Per Million Miles Flown	0.0786	0.1214
Per Hundred Thousand Hours Flown	1.347	2.077
Per Hundred Thousand Departures Flown	0.837	1.332
Fatal Accident Rates		
Per Million Miles Flown	0.0098	0.0225
Per Hundred Thousand Hours Flown	0.168	0.385
Per Hundred Thousand Departures Flown	0.105	0.247

* In 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 CAB-reported (passenger/cargo) exposure data using the proportion of the totals which had historically been reported for such operations.

Table 31 - PERSONS BY ROLE AND DEGREE OF INJURY
SCHEDULED 14 CFR 135 OPERATIONS
1982

Role of Person	Degree of Injury: Fatal	Serious	Minor	None	Total
Pilot	4	3	1	19	27
Copilot	2	2	2	10	16
Loadmaster	0	0	1	0	1
Other cockpit crew	0	0	0	2	2
Passenger	8	20	12	80	120
Total aboard	14	25	16	111	166
Other aircraft*	0	2	0	0	2
Other ground	0	1	0	0	1
Grand total	14	28	16	111	169
Percent	8.3	16.6	9.5	65.7	

* 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 32 - AIRCRAFT BY DAMAGE AND DEGREE OF INJURY
SCHEDULED 14 CFR 135 OPERATIONS
1982

Aircraft damage	Degree of injury: Fatal	Serious	Minor	None	Aircraft: No.	Percent
Destroyed	5	2	1	0	8	29.6
Substantial	0	3	2	12	17	63.0
Minor	0	1	0	0	1	3.7
Not reported	0	0	0	1	1	3.7
Aircraft						
Number -	5	6	3	13	27	
Percent -	18.5	22.2	11.1	48.1		

Table 33 - AIRCRAFT BY FIRST OCCURRENCE AND DEGREE OF INJURY
SCHEDULED 14 CFR 135 OPERATIONS
1982

Type of first occurrence	Degree of injury				Aircraft	
	Fatal	Serious	Minor	None	No.	Percent
Airframe/component/system failure/malfunction	1	0	1	3	5	18.5
Fire/explosion	0	0	1	0	1	3.7
Fire	1	0	0	0	1	3.7
Hard landing	0	0	0	1	1	3.7
In flight collision with terrain	2	0	0	1	3	11.1
In flight encounter with weather	1	2	0	0	3	11.1
Loss of control - in flight	0	1	0	0	1	3.7
Loss of control - on ground	0	0	0	2	2	7.4
Midair collision	0	1	0	0	1	3.7
On ground collision with object	0	0	0	3	3	11.1
On ground collision with terrain	0	0	0	1	1	3.7
Loss of power(total) - mech failure/malfunction	0	0	1	1	2	7.4
Loss of power(partial) - mech failure/malfunction	0	0	0	1	1	3.7
Loss of power(total) - non-mechanical	0	1	0	0	1	3.7
Propeller/rotor contact	0	1	0	0	1	3.7
Aircraft						
Number -	5	6	3	13	27	
Percent -	18.5	22.2	11.1	48.1		

Table 34 - AIRCRAFT BY FIRST OCCURRENCE AND DAMAGE
SCHEDULED 14 CFR 135 OPERATIONS
1982

Type of first occurrence	Aircraft damage: Destr	Subst	Minor	Not reptd	Aircraft: No.	Percent
Airframe/component/system failure/malfunction	1	4	0	0	5	18.5
Fire/explosion	0	1	0	0	1	3.7
Fire	1	0	0	0	1	3.7
Hard landing	0	1	0	0	1	3.7
In flight collision with terrain	2	1	0	0	3	11.1
In flight encounter with weather	2	1	0	0	3	11.1
Loss of control - in flight	1	0	0	0	1	3.7
Loss of control - on ground	0	2	0	0	2	7.4
Midair collision	0	1	0	0	1	3.7
On ground collision with object	0	3	0	0	3	11.1
On ground collision with terrain	0	1	0	0	1	3.7
Loss of power(total) - mech failure/malfunction	1	0	0	1	2	7.4
Loss of power(partial) - mech failure/malfunction	0	1	0	0	1	3.7
Loss of power(total) - non-mechanical	0	1	0	0	1	3.7
Propeller/rotor contact	0	0	1	0	1	3.7
Aircraft						
Number -	8	17	1	1	27	
Percent -	29.6	63.0	3.7	3.7		

Table 35 - AIRCRAFT BY FIRST OCCURRENCE AND BROAD PHASE OF OPERATION
SCHEDULED 14 CFR 135 OPERATIONS
1982

Type of first occurrence	Phase of operation									Aircraft	
	Stndg	Taxi	Tkoff	Climb	Cruis	Dscnt	Aprch	Landg	Manvr	No.	Percent
Airframe/component/system failure/malfunction	0	0	3	0	0	0	2	0	0	5	18.5
Fire/explosion	1	0	0	0	0	0	0	0	0	1	3.7
Fire	0	0	0	0	1	0	0	0	0	1	3.7
Hard landing	0	0	0	0	0	0	0	1	0	1	3.7
In flight collision with terrain	0	0	0	0	0	1	0	1	1	3	11.1
In flight encounter with weather	0	0	1	0	1	0	1	0	0	3	11.1
Loss of control - in flight	0	0	0	0	0	0	1	0	0	1	3.7
Loss of control - on ground	0	0	2	0	0	0	0	0	0	2	7.4
Midair collision	0	0	0	0	0	0	1	0	0	1	3.7
On ground collision with object	0	3	0	0	0	0	0	0	0	3	11.1
On ground collision with terrain	0	0	1	0	0	0	0	0	0	1	3.7
Loss of power(total) - mech failure/malfunction	0	0	1	1	0	0	0	0	0	2	7.4
Loss of power(partial) - mech failure/malfunction	0	0	0	0	1	0	0	0	0	1	3.7
Loss of power(total) - non-mechanical	0	0	0	0	1	0	0	0	0	1	3.7
Propeller/rotor contact	1	0	0	0	0	0	0	0	0	1	3.7
Aircraft											
Number -	2	3	8	1	4	1	5	2	1	27	
Percent -	7.4	11.1	29.6	3.7	14.8	3.7	18.5	7.4	3.7		

Table 36 - AIRCRAFT BY PHASE OF OPERATION AND DEGREE OF INJURY
SCHEDULED 14 CFR 135 OPERATIONS
1982

Phase of operation	Degree of injury: Fatal	Serious	Minor	None	Aircraft: No.	Percent
Standing - engine(s) operating	0	1	1	0	2	7.4
Taxi - to takeoff	0	0	0	1	1	3.7
Taxi - from landing	0	0	0	2	2	7.4
Takeoff	0	0	0	1	1	3.7
Takeoff - ground run	0	0	0	3	3	11.1
Takeoff - initial climb	0	1	2	1	4	14.8
Climb - to cruise	0	0	0	1	1	3.7
Cruise	1	0	0	0	1	3.7
Cruise - normal	1	1	0	1	3	11.1
Descent	1	0	0	0	1	3.7
Approach	1	1	0	1	3	11.1
Approach - VFR pattern - final approach	0	1	0	0	1	3.7
Approach - FAF/outer marker to threshold (IFR)	0	1	0	0	1	3.7
Landing - flare/touchdown	0	0	0	2	2	7.4
Maneuvering - turn to reverse direction	1	0	0	0	1	3.7
Aircraft						
Number -	5	6	3	13	27	
Percent -	18.5	22.2	11.1	48.1		

Table 37 - AIRCRAFT BY PHASE OF OPERATION AND AIRCRAFT DAMAGE
SCHEDULED 14 CFR 135 OPERATIONS
1982

Phase of operation	Aircraft damage				Aircraft	
	Destr	Subst	Minor	Not reptd	No.	Percent
Standing - engine(s) operating	0	1	1	0	2	7.4
Taxi - to takeoff	0	1	0	0	1	3.7
Taxi - from landing	0	2	0	0	2	7.4
Takeoff	0	1	0	0	1	3.7
Takeoff - ground run	0	3	0	0	3	11.1
Takeoff - initial climb	1	3	0	0	4	14.8
Climb - to cruise	0	0	0	1	1	3.7
Cruise	1	0	0	0	1	3.7
Cruise - normal	1	2	0	0	3	11.1
Descent	1	0	0	0	1	3.7
Approach	1	2	0	0	3	11.1
Approach - VFR pattern - final approach	1	0	0	0	1	3.7
Approach - FAF/outer marker to threshold (IFR)	1	0	0	0	1	3.7
Landing - flare/touchdown	0	2	0	0	2	7.4
Maneuvering - turn to reverse direction	1	0	0	0	1	3.7
Aircraft						
Number -	8	17	1	1	27	
Percent -	29.6	63.0	3.7	3.7		

Table 38 - AIRCRAFT BY CONDITION OF LIGHT AND TYPE OF WEATHER
SCHEDULED 14 CFR 135 OPERATIONS
1982

Condition of light	Type of Weather: VMC	Type of Weather: IMC	Aircraft: No.	Aircraft: Percent
Daylight	14	0	14	51.9
Night (dark)	7	4	11	40.7
Night (bright)	1	0	1	3.7
Dusk	1	0	1	3.7
Aircraft				
Number -	23	4	27	
Percent -	85.2	14.8		

Table 39 - AIRCRAFT BY TYPE OF OPERATION AND DEGREE OF INJURY
SCHEDULED 14 CFR 135 OPERATIONS
1982

Type of Operation	Degree of Injury: Fatal	Serious	Minor	None	Aircraft: No.	Percent
Domestic Passenger	2	5	2	8	17	63.0
Domestic Passenger/Cargo	0	0	0	1	1	3.7
Domestic Cargo	3	1	1	4	9	33.3
Aircraft - Number	5	6	3	13	27	
- Percent	18.5	22.2	11.1	48.1		

Table 40 - AIRCRAFT BY PROXIMITY TO AIRPORT AND FLIGHT PLAN
SCHEDULED 14 CFR 135 OPERATIONS
1982

Proximity to airport	Flight plan			Aircraft	
	None	IFR	VFR	No.	Percent
On airport	2	10	5	17	63.0
Less than 5 nm from airport/strip	1	1	0	2	7.4
5 nm or farther from airport/strip	3	4	1	8	29.6
Aircraft					
Number -	6	15	6	27	
Percent -	22.2	55.6	22.2		

Table 41 - AIRCRAFT BY FIRE ON GROUND AND AIRCRAFT DAMAGE
SCHEDULED 14 CFR 135 OPERATIONS
1982

Fire on ground	Aircraft damage				Aircraft	
	Destr	Subst	Minor	Not reptd	No.	Percent
Yes	2	1	0	0	3	11.1
No	6	16	1	1	24	88.9
Aircraft						
Number -	8	17	1	1	27	
Percent -	29.6	63.0	3.7	3.7		

Table 42 - AIRCRAFT BY FIRE ON GROUND AND DEGREE OF INJURY
SCHEDULED 14 CFR 135 OPERATIONS
1982

	Degree of injury				Aircraft	
Fire on ground	Fatal	Serious	Minor	None	No.	Percent
Yes	2	0	1	0	3	11.1
No	3	6	2	13	24	88.9
Aircraft						
Number -	5	6	3	13	27	
Percent -	18.5	22.2	11.1	48.1		

Table 43 - BROAD CAUSE/FACTOR ASSIGNMENTS*
SCHEDULED 14 CFR 135 OPERATIONS
1982

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	4	13	1	2	4	13
Personnel	2	7	1	3	2	7
Terrain	0	0	2	7	2	7
Weather	0	1	3	6	3	6
Powerplant	0	5	0	2	0	6
Airframe	2	4	1	3	2	6
Landing Gear	0	3	0	1	0	4
Miscellaneous	0	0	2	4	2	4
Systems	1	2	0	0	1	2
Undetermined	0	2	0	0	0	2
Number of Aircraft					5	27

* Multiple causes and factors may be assigned in an accident

Table 44 - ACCIDENTS, FATAL ACCIDENTS, FATALITIES, AND RATES
SCHEDULED 14 CFR 135 OPERATIONS

Year	Accidents	Fatal Accidents	Fatalities	
			Total	Aboard Scheduled Part 135 Aircraft
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	27	5	14	14

Year	Hours Flown	Accident Rates per 100,000 Aircraft 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	4.685	1.075
1979	1,169,921	4.445	1.282
1980	1,175,588	3.232	0.681
1981	1,240,764	2.498	0.725
1982	1,299,748	2.077	0.385

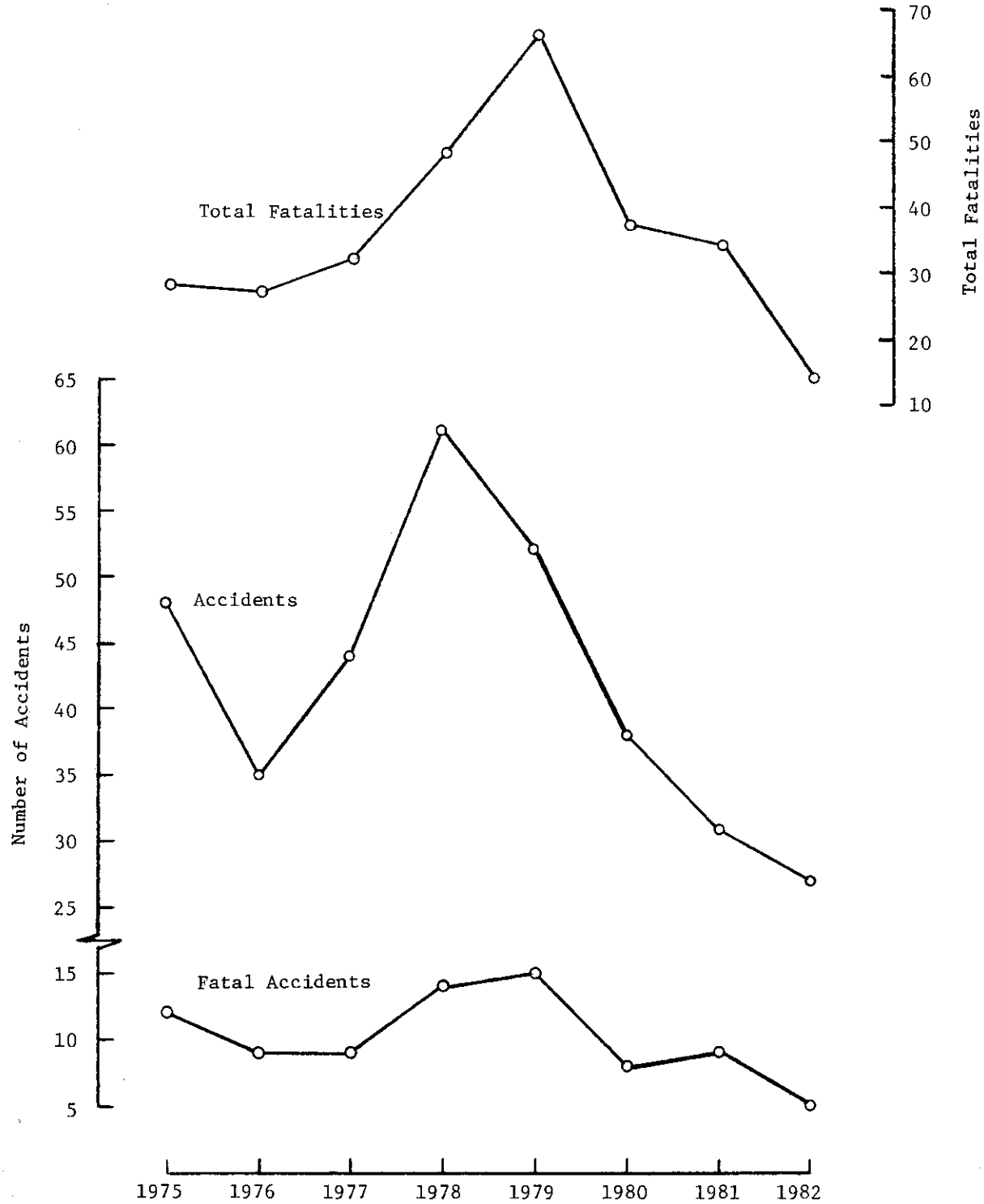

Figure 3 - ACCIDENTS, FATAL ACCIDENTS, AND FATALITIES
SCHEDULED 14 CFR 135 OPERATIONS

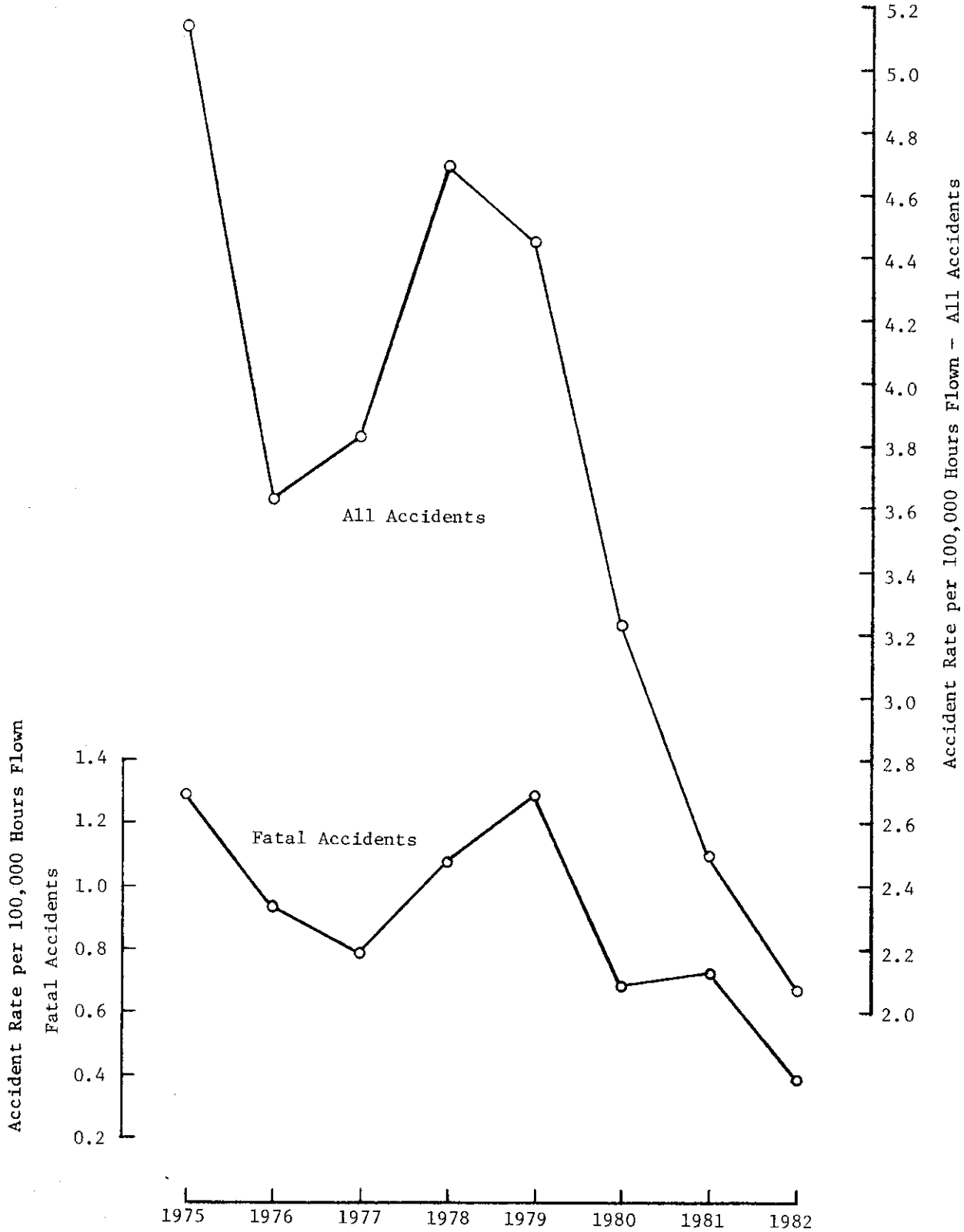

Figure 4 - ACCIDENT RATES
SCHEDULED 14 CFR 135 OPERATIONS

Table 45 - MOST PREVALENT FIRST OCCURRENCES IN ALL ACCIDENTS
SCHEDULED 14 CFR 135 OPERATIONS
1982 AND 1977 - 1981

	1982		1977 - 1981	
Type of Occurrence	No.	Percent	Mean	Percent
Collision with object/terrain	7	25.9	12.8	28.2
Loss of power	4	14.8	11.4	25.1
Loss of control - on ground	2	7.4	4.0	8.8
Loss of control - in flight	1	3.7	3.4	7.5
Gear collapsed/retracted	0	.0	2.6	5.7
Miscellaneous	0	.0	2.4	5.3
Encounter with weather/turbulence	3	11.1	1.6	3.5
Airframe/component/system fail/malf	5	18.5	1.4	3.1
Fire/explosion	2	7.4	1.4	3.1
Hard landing	1	3.7	1.4	3.1
Undershoot	0	.0	.8	1.8
(All other types)	2	7.4	2.2	4.8
Total	27	100.0	45.4	100.0

Table 46 - MOST PREVALENT FIRST OCCURRENCES IN FATAL ACCIDENTS
SCHEDULED 14 CFR 135 OPERATIONS
1982 AND 1977 - 1981

Tabl

Type of Occurrence	1982 No.	1982 Percent	1977 - 1981 Mean	1977 - 1981 Percent
Collision with object/terrain	2	40.0	3.4	30.9
Loss of power	0	.0	2.6	23.6
Loss of control - in flight	0	.0	2.4	21.8
Airframe/component/system fail/malf	1	20.0	.4	3.6
Encounter with weather/turbulence	1	20.0	.4	3.6
Fire/explosion	1	20.0	.4	3.6
Missing aircraft	0	.0	.4	3.6
Undetermined	0	.0	.4	3.6
Loss of control - on ground	0	.0	.2	1.8
Midair collision	0	.0	.2	1.8
Prop/rotor contact	0	.0	.2	1.8
Total	5	100.0	11.0	100.0

Table 47 - MOST PREVALENT FIRST PHASES OF OPERATION IN ALL ACCIDENTS
SCHEDULED 14 CFR 135 OPERATIONS
1982 AND 1977 - 1981

	1982		1977 - 1981	
Phase of Operation	No.	Percent	Mean	Percent
Takeoff	8	29.6	10.4	22.9
Landing	2	7.4	10.2	22.5
Approach	5	18.5	7.4	16.3
Cruise	4	14.8	7.0	15.4
Taxi	3	11.1	5.2	11.5
Standing	2	7.4	1.6	3.5
Climb	1	3.7	1.2	2.6
Descent	1	3.7	1.2	2.6
Maneuvering	1	3.7	1.0	2.2
Other	0	.0	.2	.4
Total	27	100.0	45.4	100.0

Table 48 - MOST PREVALENT FIRST PHASES OF OPERATION IN FATAL ACCIDENTS
SCHEDULED 14 CFR 135 OPERATIONS
1982 AND 1977 - 1981

	1982		1977 - 1981	
Phase of Operation	No.	Percent	Mean	Percent
Cruise	2	40.0	3.2	29.1
Approach	1	20.0	3.2	29.1
Takeoff	0	.0	2.2	20.0
Maneuvering	1	20.0	1.0	9.1
Descent	1	20.0	.6	5.5
Standing	0	.0	.2	1.8
Climb	0	.0	.2	1.8
Landing	0	.0	.2	1.8
Other	0	.0	.2	1.8
Total	5	100.0	11.0	100.0

Table 49 - BROAD CAUSE/FACTOR ASSIGNMENTS IN ALL ACCIDENTS
SCHEDULED 14 CFR 135 OPERATIONS
1982 AND 1977 - 1981

	1982		1977 - 1981	
Broad Cause/Factor	No.	Percent	Mean	Percent
Pilot	13	48.1	29.4	64.8
Weather	6	22.2	13.8	30.4
Personnel	7	25.9	13.6	30.0
Powerplant	6	22.2	9.0	19.8
Airport/Airways/Facilities	0	.0	6.6	14.5
Terrain	7	25.9	4.8	10.6
Landing Gear	4	14.8	4.0	8.8
Miscellaneous	4	14.8	2.0	4.4
Systems	2	7.4	1.8	4.0
Undetermined	2	7.4	1.6	3.5
Airframe	6	22.2	.8	1.8
Instruments/Equipment/Accessories	0	.0	.2	.4
Rotorcraft	0	.0	.2	.4
Number of Aircraft	27		45.4	

Table 50 - BROAD CAUSE/FACTOR ASSIGNMENTS IN FATAL ACCIDENTS
SCHEDULED 14 CFR 135 OPERATIONS
1982 AND 1977 - 1981

	1982		1977 - 1981	
Broad Cause/Factor	No.	Percent	Mean	Percent
Pilot	4	80.0	8.2	74.5
Weather	3	60.0	4.2	38.2
Personnel	2	40.0	3.2	29.1
Powerplant	0	.0	2.2	20.0
Undetermined	0	.0	1.4	12.7
Systems	1	20.0	.8	7.3
Terrain	2	40.0	.8	7.3
Miscellaneous	2	40.0	.8	7.3
Airframe	2	40.0	.2	1.8
Instruments/Equipment/Accessories	0	.0	.2	1.8
Rotorcraft	0	.0	.2	1.8
Airport/Airways/Facilities	0	.0	.2	1.8
Number of Aircraft	5		11.0	

NONSCHEDULED 14 CFR 135 OPERATIONS

The numbers of accidents, fatal accidents, and total fatalities for 1982 Nonscheduled 14 CFR 135 operations were all lower than their 1981 levels. The 132 accidents in such operations is the lowest total among the eight years for which statistics are presented in this section, while the total of 72 fatalities (45 passengers and 27 crew) is the lowest since 1975. Calendar year 1982 saw the lowest overall accident rate (4.053 accidents per 100,000 aircraft hours flown), but only the fourth best fatal accident rate (0.952 fatal accidents per 100,000 aircraft hours flown) in the period 1975-1982.

Table 54 shows that approximately 75 percent of persons aboard accident-involved aircraft in this category (326 of 435 persons) received minor or no injuries. Among passengers, 15.6 percent were fatally injured while 63.5 percent were uninjured. Approximately 62 percent of Nonscheduled Part 135 aircraft were in daylight and visual meterological conditions (VMC) at the time of their accidents (see Table 61). The pilot was cited as a cause or related factor in 72.4 percent of Nonscheduled Part 135 accidents (Table 72), compared to 48.1 percent of Scheduled Part 135 accidents (Table 49).

Table 51 - SUMMARY OF LOSSES
NONSCHEDULED 14 CR 135 OPERATIONS

Accidents	1982	1981	1980
Fatal	31	40	46
Involved Serious Injury	13	13	13
Involved Minor or No Injury	88	104	112
Total	132	157	171
Fatalities			
Passenger	45	57	62
Crew	27	35	41
Other Persons	0	2	2
Total	72	94	105
Aircraft Damage (14 CFR 135)			
Destroyed	47	54	52
Substantial	83	102	118
Minor	3	2	0
None	0	0	2
Unknown	1	0	0
Total	134	158	172
Aircraft Damage (Other)*			
Destroyed	0	1	2
Substantial	0	1	1
Minor	0	0	0
None	0	0	0
Total	0	2	3

* 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.

Table 52 - ACCIDENT RATES
NONSCHEDULED 14 CFR 135 OPERATIONS

	1982	1981	1980
Hours Flown	3,256,763	2,895,827	3,617,724
Accident Rates*			
All Accidents	4.053	5.422	4.727
Fatal Accidents	0.952	1.381	1.272

*Per Hundred Thousand Hours Flown

Table 53 - LIST OF ACCIDENTS
NONSCHEDULED 14 CFR 135 OPERATIONS
1982

Date	Location	Type of Operation	Aircraft Type	Aircraft Damage	Degree of Injury	First Occurrence
1/02	Chamblee, GA	Passenger	Bell 206L-1	Substantial	None	Loss of power(partial) - mech failure/malfunction
1/04	Near Las Vegas, NV	Cargo	Piper PA-34-200T	Destroyed	Fatal (2)	In flight collision with terrain
1/05	Bethel, AK	Passenger	Cessna A185F	Substantial	Serious	Loss of power(partial) - mech failure/malfunction
1/05	Springerville, AZ	Cargo	Cessna TR182	Substantial	None	Nose over
1/07	Helena, MT	Passenger	Cessna 210	Destroyed	Fatal (2)	In flight collision with terrain
1/10	Quinhagak, AK	Pax and Cargo	Cessna U206	Substantial	Minor	In flight encounter with weather
1/13	Spokane, WA	Cargo	Piper PA-31-350	Substantial	None	In flight encounter with weather
1/15	Near Nuiqsut, AK	Passenger	DeHavilland DHC-2-MK3	Substantial	None	On ground collision with terrain
1/16	Houma, LA	Passenger	Bell 206L-1	Destroyed	Fatal (1)	In flight encounter with weather
1/19	Tuntutuliak, AK	Passenger	Piper PA-32	Substantial	None	Loss of control - on ground
1/21	Port Graham, AK	Cargo	Cessna 207	Destroyed	Minor	In flight collision with terrain
1/21	North Kansas City, MO	Cargo	Cessna 402A	Destroyed	Fatal (1)	In flight encounter with weather
1/26	10 mi NW Walsenburg, CO	Passenger	Hughes 369D	Substantial	Minor	Loss of control - in flight
1/30	Sinclair Island, WA	Passenger	Cessna 172P	Substantial	None	Overrun
2/01	Rock Springs, WY	Cargo	Piper PA-32	Substantial	Serious	In flight collision with terrain
2/02	Newburgh, NY	Cargo	Piper PA-23-250	Destroyed	Fatal (1)	In flight collision with terrain
2/05	Lambsburg, VA	Passenger	Piper PA-32R-300	Destroyed	Fatal (4)	In flight encounter with weather
2/09	Fort Yukon, AK	Passenger	Cessna 185	Substantial	None	On ground collision with terrain
2/15	East Saint Louis, IL	Cargo	Piper PA-31-310	Substantial	None	Loss of control - on ground
2/17	Mitchell, SD	Passenger	Piper PA-23	Substantial	None	In flight encounter with weather
2/19	Oshkosh, WI	Passenger	Cessna 404	Substantial	None	Main gear collapsed
2/22	Cleveland, OH	Cargo	Piper PA-60	Substantial	None	Loss of control - on ground
2/25	Dallas, TX	Cargo	Beech D18S	Substantial	None	In flight collision with object
3/02	High Island Blk 334, Gulf of Mexico	Passenger	Bell 206B	Destroyed	Fatal (2)	Undershoot
3/03	Crownpoint, NM	Passenger	Piper PA-32-300	Substantial	None	Loss of control - on ground
3/04	Elyria, OH	Cargo	Smith Aerostar 600	Substantial	None	Loss of control - on ground
3/08	Captinteria, CA	Cargo	Piper PA-28R-180	Destroyed	Serious	In flight collision with terrain
3/08	Grand Marais, MN	Passenger	Piper PA-23 250	Substantial	None	Undershoot
3/11	Nashville, TN	Cargo	Cessna 310	Substantial	None	On ground collision with object
3/11	Nashville, TN	Cargo	Beech 95-55	Minor	None	On ground collision with object
3/12	Syracuse, NY	Passenger	Piper PA-32	Substantial	Minor	Loss of power(total) - non-mechanical
3/15	Paxson, AK	Passenger	Cessna 185	Substantial	None	On ground collision with terrain
3/16	Marble, CO	Passenger	Bell 206B	Substantial	None	In flight encounter with weather
3/18	Sunflower, AZ	Passenger	Cessna 401	Destroyed	Fatal (5)	In flight encounter with weather
3/22	Near Brideport, CA	Passenger	Aerospatiale SA316B	Destroyed	Serious	Airframe/component/system failure/malfunction
3/26	Yuba City, CA	Passenger	Cessna 310Q	Substantial	None	In flight collision with terrain
4/09	Near Nightmute, AK	Cargo	Cessna 206	Substantial	Minor	In flight encounter with weather
4/11	Montague Island, AK	Passenger	Piper PA-32	Substantial	None	In flight collision with terrain
4/11	Near Tanana, AK	Passenger	Hughes 369D	Destroyed	Fatal (3)	In flight encounter with weather

Table 53 - LIST OF ACCIDENTS (Continued)
NONSCHEDULED 14 CFR 135 OPERATIONS
1982

Date	Location	Type of Operation	Aircraft Type	Aircraft Damage	Degree of Injury	First Occurrence
4/19	Darrington, WA	Passenger	Hughes 500C	Substantial	None	In flight collision with terrain
4/22	Intracoastal City, LA	Passenger	Bell 212	Destroyed	Fatal (2)	Airframe/component/system failure/malfunction
4/24	Gold Strike, NV	Passenger	S.N.I.A.S. AS350	Minor	Fatal (1)	Propeller/rotor contact
4/28	Hakalau, HI	Cargo	Beech E18S	Destroyed	Fatal (2)	Loss of power
4/29	New Stuyahok, AK	Passenger	Cessna 207	Substantial	Minor	In flight collision with object
5/06	Bismarck, ND	Passenger	Cessna 402A	Substantial	None	In flight collision with terrain
5/08	Medicine Bow, WY	Passenger	Piper PA-28R-200	Substantial	None	Loss of control - in flight
5/12	Sanford, ME	Passenger	Cessna 172P	Substantial	Serious	Midair collision
5/13	6 nm SSE Wrangell, AK	Passenger	Hughes 369D	Substantial	Minor	Loss of power
5/13	Pineville, LA	Passenger	Piper PA-32RT-300	Substantial	None	On ground collision with terrain
5/15	Cameron, LA	Passenger	Bell 206L-1	Substantial	None	Loss of power(partial) - mech failure/malfunction
5/25	Holland, MI	Passenger	Cessna 310R	Substantial	None	Loss of control - on ground
5/27	Ouzinkie, AK	Cargo	Cessna U206	Substantial	None	Undershoot
5/29	High Island 389, Gulf of Mexico	Passenger	Bell 206L-1	Destroyed	None	Loss of power(total) - mech failure/malfunction
6/04	Wichita, KS	Passenger	Beech 65-90	Substantial	None	Loss of power(partial) - mech failure/malfunction
6/11	Hazard, KY	Passenger	Aerospatiale AS350D	Destroyed	Serious	In flight collision with object
6/15	Myrtle Beach, SC	Cargo	Beech A36	Destroyed	Minor	Loss of power(total) - non-mechanical
6/17	Near Ekwok, AK	Passenger	Piper PA-32-300	Substantial	None	Loss of power(total) - mech failure/malfunction
6/18	Near Chinitna Bay, AK	Passenger	Cessna 185F	Destroyed	Fatal (1)	On ground collision with terrain
6/18	Fresno, CA	Cargo	Beech H-18	Destroyed	None	Loss of control - in flight
6/21	Dillon, MT	Passenger	Aerospatiale SA-315B	Destroyed	Serious	In flight collision with terrain
6/23	Dardanelle, CA	Passenger	Aerospatiale SA-316B	Destroyed	Fatal (3)	In flight collision with object
6/23	Hyannis, MA	Passenger	S.N.I.A.S. SA-330J	Substantial	None	Airframe/component/system failure/malfunction
6/29	Glacier Bay, AK	Passenger	Piper PA-32-300	Substantial	None	Loss of power(total) - mech failure/malfunction
6/30	Las Animas, CO	Passenger	Cessna 340	Substantial	None	Undershoot
6/30	Lubbock, TX	Cargo	Beech E18S	Substantial	Minor	Loss of control - on ground
7/03	Grand Canyon, AZ	Passenger	Bell 206B	Substantial	None	Airframe/component/system failure/malfunction
7/07	Meeteetse, WY	Passenger	Aerospatiale SA316B	Destroyed	Serious	In flight collision with object
7/08	51 nm ESE Yakutat, AK	Passenger	Piper PA-32-300	Destroyed	Minor	Loss of power
7/09	Elim, AK	Passenger	Cessna 310	Substantial	None	Loss of power(partial) - non-mechanical
7/10	38 nm SE Barrow, AK	Passenger	Bell 212	Substantial	Minor	Airframe/component/system failure/malfunction
7/14	Oxbow, OR	Passenger	Cessna 172F	Destroyed	Fatal (4)	Loss of control - in flight
7/14	Sabine, TX	Passenger	Bell 206B	Substantial	None	Loss of power(total) - mech failure/malfunction

Table 53 - LIST OF ACCIDENTS (Continued)
NONSCHEDULED 14 CFR 135 OPERATIONS
1982

Date	Location	Type of Operation	Aircraft Type	Aircraft Damage	Degree of Injury	First Occurrence
7/19	Near Inyokern, CA	Passenger	Cessna T337H	Destroyed	Serious	In flight collision with terrain
7/19	Gulf Of Mexico	Passenger	Aerospatiale AS-350D	Substantial	None	Loss of power(total) - mech failure/malfunction
7/24	11nm East Of Sitka, AK	Passenger	Cessna A185F	Destroyed	Fatal (4)	Loss of control - in flight
7/24	Jamaica, NY	Passenger	Cessna 172N	Substantial	Minor	On ground collision with object
7/28	McKinley Nat'l. Park, AK	Passenger	Piper PA-32-300	Substantial	Minor	In flight collision with terrain
7/28	Bryce Canyon, UT	Cargo	Bell UH1B	Substantial	None	Loss of control - in flight
7/30	El Paso, TX	Cargo	Douglas DC-3C	Substantial	Minor	Loss of power
8/04	Raleigh, NC	Cargo	Piper PA-32-260	Destroyed	Serious	Fire
8/04	Concord, NH	Passenger	Piper PA-28-161	Destroyed	Fatal (2)	In flight encounter with weather
8/08	Grand Isle, LA	Cargo	Bell 206B	Destroyed	Serious	Airframe/component/system failure/malfunction
8/23	Charlotte Amalie, VI	Cargo	Douglas C-47	Substantial	None	Airframe/component/system failure/malfunction
8/25	Near Dillingham, AK	Passenger	Piper PA-32	Substantial	None	In flight collision with object
8/27	Boise, ID	Passenger	Cessna T207A	Destroyed	Minor	Loss of power(total) - mech failure/malfunction
8/30	Egegik, AK	Passenger	Piper PA-32-300	Destroyed	None	Loss of control - in flight
8/30	Chicago, IL	Cargo	Beech G18S	Substantial	None	Loss of control - on ground
9/02	Lihue, HI	Passenger	Bell 206-L	Destroyed	Serious	In flight encounter with weather
9/02	Darlington, SC	Passenger	Grumman AA5B	Substantial	None	Overrun
9/08	Holland, MI	Passenger	Piper PA-23-250	Substantial	None	On ground collision with object
9/09	Riverside, CA	Cargo	Cessna T207A	Substantial	Minor	In flight collision with object
9/10	Tomball, TX	Passenger	Cessna 310R	Substantial	None	Gear collapsed
9/14	Mahoney Creek, ID	Pax and Cargo	Dehavilland DHC-II	Destroyed	Fatal (2)	Loss of control - in flight
9/15	Kemmerer, WY	Cargo	Cessna U206F	Substantial	None	Loss of power(total) - mech failure/malfunction
9/17	Near Nondalton, AK	Pax and Cargo	Robertson C-U206F	Destroyed	Fatal (4)	Loss of control - in flight
9/18	42 nm ESE Of Yakutat, AK	Passenger	Cessna U206A	Substantial	None	Loss of control - in flight
9/21	Near Kotzebue, AK	Passenger	Cessna U206 G	Substantial	Fatal (1)	Loss of power(total) - mech failure/malfunction
9/21	Langdon, ND	Passenger	Piper PA-34	Substantial	None	Miscellaneous/other
9/22	New York, NY	Passenger	Bell 222	Minor	Fatal (1)	Propeller/rotor contact
9/23	Nenana, AK	Passenger	Cessna U206	Substantial	None	Airframe/component/system failure/malfunction
9/26	Bedford Park, IL	Cargo	Cessna 207	Substantial	None	Loss of power(partial) - mech failure/malfunction
9/29	Big Sur, CA	Passenger	Beech 76	Substantial	None	In flight collision with object
10/04	Dyersburg, TN	Passenger	Piper PA-31-310	Substantial	Minor	Airframe/component/system failure/malfunction
10/07	Rock Springs, WY	Passenger	Cessna TU206G	Substantial	None	In flight collision with terrain
10/08	40 nm WNW Salmon, ID	Passenger	Cessna 206	Substantial	None	Loss of control - on ground

Table 53 - LIST OF ACCIDENTS (Continued)
NONSCHEDULED 14 CFR 135 OPERATIONS
1982

Date	Location	Type of Operation	Aircraft Type	Aircraft Damage	Degree of Injury	First Occurrence
10/08	Allendale, SC	Passenger	Beech 58	Substantial	None	Airframe/component/system failure/malfunction
10/18	Gulf Of Mexico	Passenger	Bell 206B	Destroyed	Fatal (3)	Midair collision
10/18	Gulf Of Mexico	Cargo	Bell 206B	Destroyed	Fatal (3)	Midair collision
10/20	Atlantic Ocean	Passenger	Piper PA-31	Destroyed	Fatal (8)	Missing aircraft
10/28	Columbus, OH	Cargo	Piper PA-30	Substantial	None	On ground collision with terrain
10/29	Stony River, AK	Pax and Cargo	Cessna 185	Substantial	None	Nose over
11/01	Meadville, PA	Passenger	Cessna 402B	Substantial	None	Overrun
11/08	Norfolk, NE	Passenger	Grumman American GA-7	Destroyed	Fatal (1)	In flight collision with object
11/10	Coaling, CA	Cargo	Piper PA-28R-201T	Destroyed	None	Loss of power(total) - mech failure/malfunction
11/11	Near Seward, AK	Passenger	Piper PA-32-300	Substantial	None	On ground collision with terrain
11/12	Brevard, NC	Cargo	Piper PA-31-350	Destroyed	Fatal (1)	In flight collision with terrain
11/13	West Mifflin, PA	Passenger	Aerospatiale SA316B	Substantial	None	Airframe/component/system failure/malfunction
11/19	Port O'Connor, TX	Passenger	Bell 206B	Substantial	None	In flight encounter with weather
11/20	Atlanta, GA	Cargo	Aero Commander 680W	Destroyed	Serious	Loss of power(total) - non-mechanical
11/20	Near Kalispell, MT	Passenger	Bell 206B	Substantial	None	In flight encounter with weather
11/23	Cullman, AL	Passenger	Beech 95-B55	Destroyed	Fatal (2)	Loss of control - in flight
12/01	Douglassville, PA	Passenger	Piper PA-32-260	Destroyed	Fatal (3)	Loss of power
12/02	Venice, LA	Cargo	Cessna 185	Substantial	None	On ground collision with object
12/03	Gulf Of Mexico	Passenger	Bell 206L1	Destroyed	Fatal (2)	In flight collision with terrain
12/15	Defiance, OH	Passenger	Cessna T210	Destroyed	Fatal (2)	In flight collision with terrain
12/16	Dewitt, NE	Passenger	Piper PA-32R-300	Substantial	None	Airframe/component/system failure/malfunction
12/18	Near Port Alsworth, AK	Passenger	DeHavilland DHC-2	Substantial	None	Nose over
12/20	Gasport, NY	Cargo	Beech 56TC	Substantial	None	Loss of control - on ground
12/20	Columbia, SC	Cargo	Piper PA-34-200	Substantial	None	Main gear collapsed
12/27	Aspen, CO	Passenger	Cessna 404	Destroyed	Fatal (1)	Loss of control - in flight
12/30	Ft. Lauderdale, FL	Passenger	Cessna 310R	Destroyed	Fatal (1)	In flight collision with terrain
12/31	Nunapitchuk, AK	Passenger	Piper PA-32	Substantial	None	On ground collision with terrain
12/31	11 mi S of Telluride, CO	Passenger	Bell 206B	Substantial	Minor	Miscellaneous/other
12/31	Houston, TX	Cargo	Cessna 210N	Substantial	None	Airframe/component/system failure/malfunction

Table 54 - PERSONS BY ROLE AND DEGREE OF INJURY
NONSCHEDULED 14 CFR 135 OPERATIONS
1982

Role of Person	Degree of Injury				Total
	Fatal	Serious	Minor	None	
Pilot	24	13	17	80	134
Copilot	1	0	1	5	7
Loadmaster	1	0	0	2	3
Other cockpit crew	0	1	0	1	2
Cabin crew	1	0	0	0	1
Passenger	45	23	37	183	288
Total aboard	72	37	55	271	435
Other aircraft*	0	2	0	0	2
Other ground	0	0	2	0	2
Grand total	72	39	57	271	439
Percent	16.4	8.9	13.0	61.7	

* 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 55 - AIRCRAFT BY DAMAGE AND DEGREE OF INJURY
NONSCHEDULED 14 CFR 135 OPERATIONS
1982

Aircraft damage	Degree of injury: Fatal	Serious	Minor	None	Aircraft: No.	Percent
Destroyed	29	10	4	4	47	35.1
Substantial	0	3	14	66	83	61.9
Minor	2	0	0	1	3	2.2
Not reported	1	0	0	0	1	0.7
Aircraft						
Number -	32	13	18	71	134	
Percent -	23.9	9.7	13.4	53.0		

Table 56 - AIRCRAFT BY FIRST OCCURRENCE AND DEGREE OF INJURY
NONSCHEDULED 14 CFR 135 OPERATIONS
1982

Type of first occurrence	Degree of injury: Fatal	Serious	Minor	None	Aircraft: No.	Percent
Airframe/component/system failure/malfunction	1	2	2	8	13	9.7
Fire	0	1	0	0	1	0.7
Gear collapsed	0	0	0	1	1	0.7
Main gear collapsed	0	0	0	2	2	1.5
In flight collision with object	2	2	2	3	9	6.7
In flight collision with terrain	7	4	2	5	18	13.4
In flight encounter with weather	6	1	2	5	14	10.4
Loss of control - in flight	6	0	1	5	12	9.0
Loss of control - on ground	0	0	1	9	10	7.5
Midair collision	2	1	0	0	3	2.2
Nose over	0	0	0	3	3	2.2
On ground collision with object	0	0	1	4	5	3.7
On ground collision with terrain	1	0	0	7	8	6.0
Overrun	0	0	0	3	3	2.2
Loss of power	2	0	3	0	5	3.7
Loss of power(total) - mech failure/malfunction	1	0	1	7	9	6.7
Loss of power(partial) - mech failure/malfunction	0	1	0	4	5	3.7
Loss of power(total) - non-mechanical	0	1	2	0	3	2.2
Loss of power(partial) - non-mechanical	0	0	0	1	1	0.7
Propeller/rotor contact	2	0	0	0	2	1.5
Undershoot	1	0	0	3	4	3.0
Missing aircraft	1	0	0	0	1	0.7
Miscellaneous/other	0	0	1	1	2	1.5
Aircraft						
Number -	32	13	18	71	134	
Percent -	23.9	9.7	13.4	53.0		

Table 57 - AIRCRAFT BY FIRST OCCURRENCE AND DAMAGE
NONSCHEDULED 14 CFR 135 OPERATIONS
1982

Type of first occurrence	Aircraft damage				Aircraft	
	Destr	Subst	Minor	Not reptd	No.	Percent
Airframe/component/system failure/malfunction	3	10	0	0	13	9.7
Fire	1	0	0	0	1	0.7
Gear collapsed	0	1	0	0	1	0.7
Main gear collapsed	0	2	0	0	2	1.5
In flight collision with object	4	5	0	0	9	6.7
In flight collision with terrain	11	7	0	0	18	13.4
In flight encounter with weather	7	7	0	0	14	10.4
Loss of control - in flight	8	4	0	0	12	9.0
Loss of control - on ground	0	10	0	0	10	7.5
Midair collision	2	1	0	0	3	2.2
Nose over	0	3	0	0	3	2.2
On ground collision with object	0	4	1	0	5	3.7
On ground collision with terrain	1	7	0	0	8	6.0
Overrun	0	3	0	0	3	2.2
Loss of power	3	2	0	0	5	3.7
Loss of power(total) - mech failure/malfunction	3	5	0	1	9	6.7
Loss of power(partial) - mech failure/malfunction	0	5	0	0	5	3.7
Loss of power(total) - non-mechanical	2	1	0	0	3	2.2
Loss of power(partial) - non-mechanical	0	1	0	0	1	0.7
Propeller/rotor contact	0	0	2	0	2	1.5
Undershoot	1	3	0	0	4	3.0
Missing aircraft	1	0	0	0	1	0.7
Miscellaneous/other	0	2	0	0	2	1.5
Aircraft						
Number -	47	83	3	1	134	
Percent -	35.1	61.9	2.2	0.7		

Table 58 - AIRCRAFT BY FIRST OCCURRENCE AND BROAD PHASE OF OPERATION
NONSCHEDULED 14 CFR 135 OPERATIONS
1982

Type of first occurrence	Phase of operation										Aircraft	
	Stndg	Taxi	Tkoff	Climb	Cruis	Dscnt	Aprch	Landg	Manvr	Unk	No.	Percent
Airframe/component/system failure/malfunction	0	1	0	2	6	1	0	2	1	0	13	9.7
Fire	0	0	1	0	0	0	0	0	0	0	1	0.7
Gear collapsed	0	0	0	0	0	0	0	1	0	0	1	0.7
Main gear collapsed	0	0	0	0	0	0	0	2	0	0	2	1.5
In flight collision with object	0	0	2	0	1	0	4	0	2	0	9	6.7
In flight collision with terrain	0	0	2	1	3	1	3	5	3	0	18	13.4
In flight encounter with weather	0	0	0	1	5	0	6	0	2	0	14	10.4
Loss of control - in flight	0	0	7	0	2	0	3	0	0	0	12	9.0
Loss of control - on ground	0	0	6	0	0	0	0	4	0	0	10	7.5
Midair collision	0	0	0	0	2	0	1	0	0	0	3	2.2
Nose over	0	1	0	0	0	0	0	2	0	0	3	2.2
On ground collision with object	0	4	1	0	0	0	0	0	0	0	5	3.7
On ground collision with terrain	1	4	1	0	0	0	0	2	0	0	8	6.0
Overrun	0	0	0	0	0	0	0	3	0	0	3	2.2
Loss of power	0	0	1	1	1	0	1	0	1	0	5	3.7
Loss of power(total) - mech failure/malfunction	0	0	2	0	6	0	0	1	0	0	9	6.7
Loss of power(partial) - mech failure/malfunction	0	0	2	0	2	0	1	0	0	0	5	3.7
Loss of power(total) - non-mechanical	0	0	0	0	1	1	1	0	0	0	3	2.2
Loss of power(partial) - non-mechanical	0	0	1	0	0	0	0	0	0	0	1	0.7
Propeller/rotor contact	2	0	0	0	0	0	0	0	0	0	2	1.5
Undershoot	0	0	0	0	0	0	4	0	0	0	4	3.0
Missing aircraft	0	0	0	0	0	0	0	0	0	1	1	0.7
Miscellaneous/other	0	0	1	0	0	0	0	1	0	0	2	1.5
Aircraft												
Number -	3	10	27	5	29	3	24	23	9	1	134	
Percent -	2.2	7.5	20.1	3.7	21.6	2.2	17.9	17.2	6.7	0.7		

Table 59 - AIRCRAFT BY PHASE OF OPERATION AND DEGREE OF INJURY
NONSCHEDULED 14 CFR 135 OPERATIONS
1982

Phase of operation	Degree of injury				Aircraft	
	Fatal	Serious	Minor	None	No.	Percent
Standing	1	0	0	0	1	0.7
Standing - idling rotors	2	0	0	0	2	1.5
Taxi - to takeoff	0	0	1	5	6	4.5
Taxi - from landing	0	0	0	4	4	3.0
Takeoff	1	0	0	1	2	1.5
Takeoff - ground run	0	0	0	10	10	7.5
Takeoff - initial climb	3	2	3	7	15	11.2
Climb	0	2	0	1	3	2.2
Climb - to cruise	2	0	0	0	2	1.5
Cruise	2	0	0	0	2	1.5
Cruise - normal	8	2	5	12	27	20.1
Descent - normal	1	0	2	0	3	2.2
Approach	3	0	0	1	4	3.0
Approach - VFR pattern - base turn	1	0	0	0	1	0.7
Approach - VFR pattern - final approach	1	2	0	7	10	7.5
Approach - go-around (VFR)	1	0	0	0	1	0.7
Approach - FAF/outer marker to threshold (IFR)	3	0	1	2	6	4.5
Approach - missed approach (IFR)	1	0	1	0	2	1.5
Landing	0	0	0	1	1	0.7
Landing - flare/touchdown	0	1	2	6	9	6.7
Landing - roll	0	0	1	12	13	9.7
Maneuvering	1	3	1	1	6	4.5
Maneuvering - turn to reverse direction	0	1	1	0	2	1.5
Hover	0	0	0	1	1	0.7
Unknown	1	0	0	0	1	0.7
Aircraft						
Number -	32	13	18	71	134	
Percent -	23.9	9.7	13.4	53.0		

Table 60 - AIRCRAFT BY PHASE OF OPERATION AND AIRCRAFT DAMAGE
NONSCHEDULED 14 CFR 135 OPERATIONS
1982

Phase of operation	Aircraft damage: Destr	Subst	Minor	Not reptd	Aircraft: No.	Percent
Standing	1	0	0	0	1	0.7
Standing - idling rotors	0	0	2	0	2	1.5
Taxi - to takeoff	0	5	1	0	6	4.5
Taxi - from landing	0	4	0	0	4	3.0
Takeoff	1	1	0	0	2	1.5
Takeoff - ground run	0	10	0	0	10	7.5
Takeoff - initial climb	7	8	0	0	15	11.2
Climb	2	1	0	0	3	2.2
Climb - to cruise	2	0	0	0	2	1.5
Cruise	2	0	0	0	2	1.5
Cruise - normal	9	17	0	1	27	20.1
Descent - normal	2	1	0	0	3	2.2
Approach	3	1	0	0	4	3.0
Approach - VFR pattern - base turn	1	0	0	0	1	0.7
Approach - VFR pattern - final approach	2	8	0	0	10	7.5
Approach - go-around (VFR)	1	0	0	0	1	0.7
Approach - FAF/outer marker to threshold (IFR)	3	3	0	0	6	4.5
Approach - missed approach (IFR)	1	1	0	0	2	1.5
Landing	0	1	0	0	1	0.7
Landing - flare/touchdown	3	6	0	0	9	6.7
Landing - roll	0	13	0	0	13	9.7
Maneuvering	4	2	0	0	6	4.5
Maneuvering - turn to reverse direction	2	0	0	0	2	1.5
Hover	0	1	0	0	1	0.7
Unknown	1	0	0	0	1	0.7
Aircraft						
Number -	47	83	3	1	134	
Percent -	35.1	61.9	2.2	0.7		

Table 61 - AIRCRAFT BY CONDITION OF LIGHT AND TYPE OF WEATHER
NONSCHEDULED 14 CFR 135 OPERATIONS
1982

Condition of light	Type of Weather: VMC	IMC	Not reptd	Aircraft: No.	Percent
Daylight	83	11	1	95	70.9
Night (dark)	17	15	0	32	23.9
Night (bright)	1	0	0	1	0.7
Dusk	5	1	0	6	4.5
Aircraft					
Number -	106	27	1	134	
Percent -	79.1	20.1	0.7		

Table 62 - AIRCRAFT BY TYPE OF OPERATION AND DEGREE OF INJURY
NONSCHEDULED 14 CFR 135 OPERATIONS
1982

Type of Operation	Degree of Injury: Fatal	Serious	Minor	None	Aircraft: No.	Percent
Domestic Passenger	23	8	11	49	91	67.9
Domestic Passenger/Cargo	2	0	1	1	4	3.0
Domestic Cargo	6	5	6	20	37	27.6
International Passenger	1	0	0	0	1	0.7
International Cargo	0	0	0	1	1	0.7
Aircraft - Number	32	13	18	71	134	
- Percent	23.9	9.7	13.4	53.0		

Table 63 - AIRCRAFT BY PROXIMITY TO AIRPORT AND FLIGHT PLAN
NONSCHEDULED 14 CFR 135 OPERATIONS
1982

Proximity to airport	Flight plan				Aircraft	
	None	IFR	VFR	Not reptd	No.	Percent
On airport	10	18	14	2	44	32.8
On airstrip	1	1	5	1	8	6.0
Less than 5 nm from airport/strip	8	10	6	2	26	19.4
5 nm or farther from airport/strip	13	10	20	10	53	39.6
Off airport/strip - distance not reported	0	0	2	1	3	2.2
Aircraft						
Number -	32	39	47	16	134	
Percent -	23.9	29.1	35.1	11.9		

Table 64 - AIRCRAFT BY FIRE ON GROUND AND AIRCRAFT DAMAGE
NONSCHEDULED 14 CFR 135 OPERATIONS
1982

Fire on ground	Aircraft damage: Destr	Subst	Minor	Not reptd	Aircraft: No.	Percent
Yes	14	0	0	0	14	10.4
No	32	83	3	1	119	88.8
Not reported	1	0	0	0	1	0.7
Aircraft						
Number -	47	83	3	1	134	
Percent -	35.1	61.9	2.2	0.7		

Table 65 - AIRCRAFT BY FIRE ON GROUND AND DEGREE OF INJURY
NONSCHEDULED 14 CFR 135 OPERATIONS
1982

Fire on ground	Degree of injury: Fatal	Serious	Minor	None	Aircraft: No.	Percent
Yes	11	1	0	2	14	10.4
No	20	12	18	69	119	88.8
Not reported	1	0	0	0	1	0.7
Aircraft						
Number -	32	13	18	71	134	
Percent -	23.9	9.7	13.4	53.0		

Table 66 - BROAD CAUSE/FACTOR ASSIGNMENTS*
NONSCHEDULED 14 CFR 135 OPERATIONS
1982

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	24	93	8	22	25	97
Terrain	0	1	12	64	12	65
Weather	0	1	18	59	18	59
Miscellaneous	0	1	12	39	12	40
Powerplant	0	21	0	4	0	24
Personnel	4	14	2	7	6	20
Landing Gear	0	10	1	5	1	15
Airport/Airway/Facilities	0	1	0	13	0	14
Rotorcraft	2	7	0	1	2	8
Undetermined	6	8	0	0	6	8
Airframe	1	1	1	5	2	6
Inst./Equip./Accessories	0	0	1	5	1	5
Systems	0	2	0	2	0	3
Number of Aircraft					32	134

* Multiple causes and factors may be assigned in an accident

Table 67 - ACCIDENTS, FATAL ACCIDENTS, FATALITIES, AND RATES
NONSCHEDULED 14 CFR 135 OPERATIONS

Year	Accidents	Fatal Accidents	Fatalities	
			Total	Aboard Nonscheduled Part 135 Aircraft
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	103
1981	157	40	94	92
1982	132	31	72	72

Year	Hours Flown	Accident Rates per 100,000 Aircraft Hours Flown	
		Total	Fatal
1975	2,526,271	6.017	0.950
1976	2,703,203	5.068	1.147
1977	3,304,220	4.782	0.938
1978	3,545,753	5.584	1.523
1979	3,684,321	4.343	0.814
1980	3,617,724	4.727	1.272
1981	2,895,827	5.422	1.381
1982	3,256,763	4.053	0.952

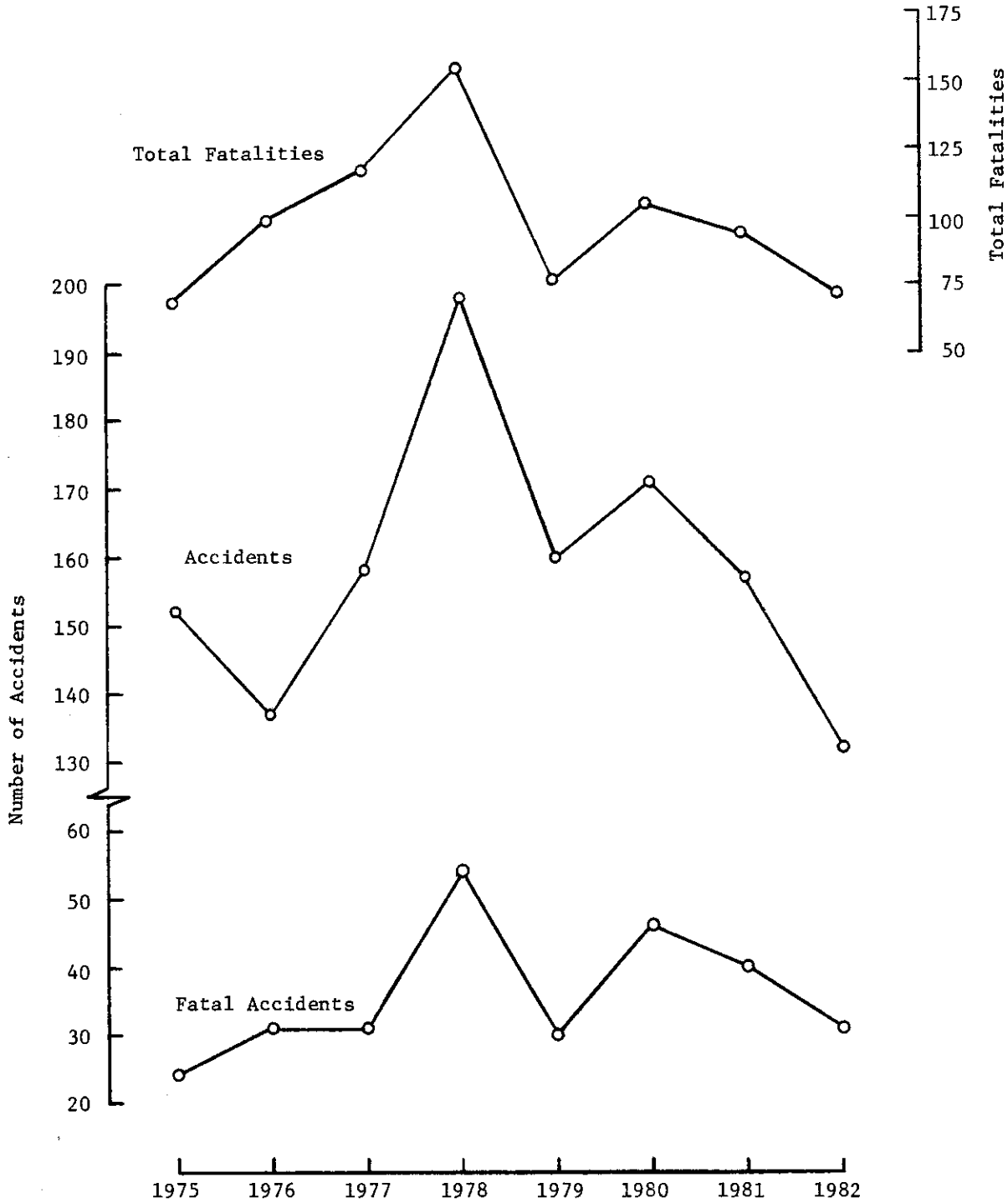

Figure 5 - ACCIDENTS, FATAL ACCIDENTS, AND FATALITIES
NONSCHEDULED 14 CFR 135 OPERATIONS

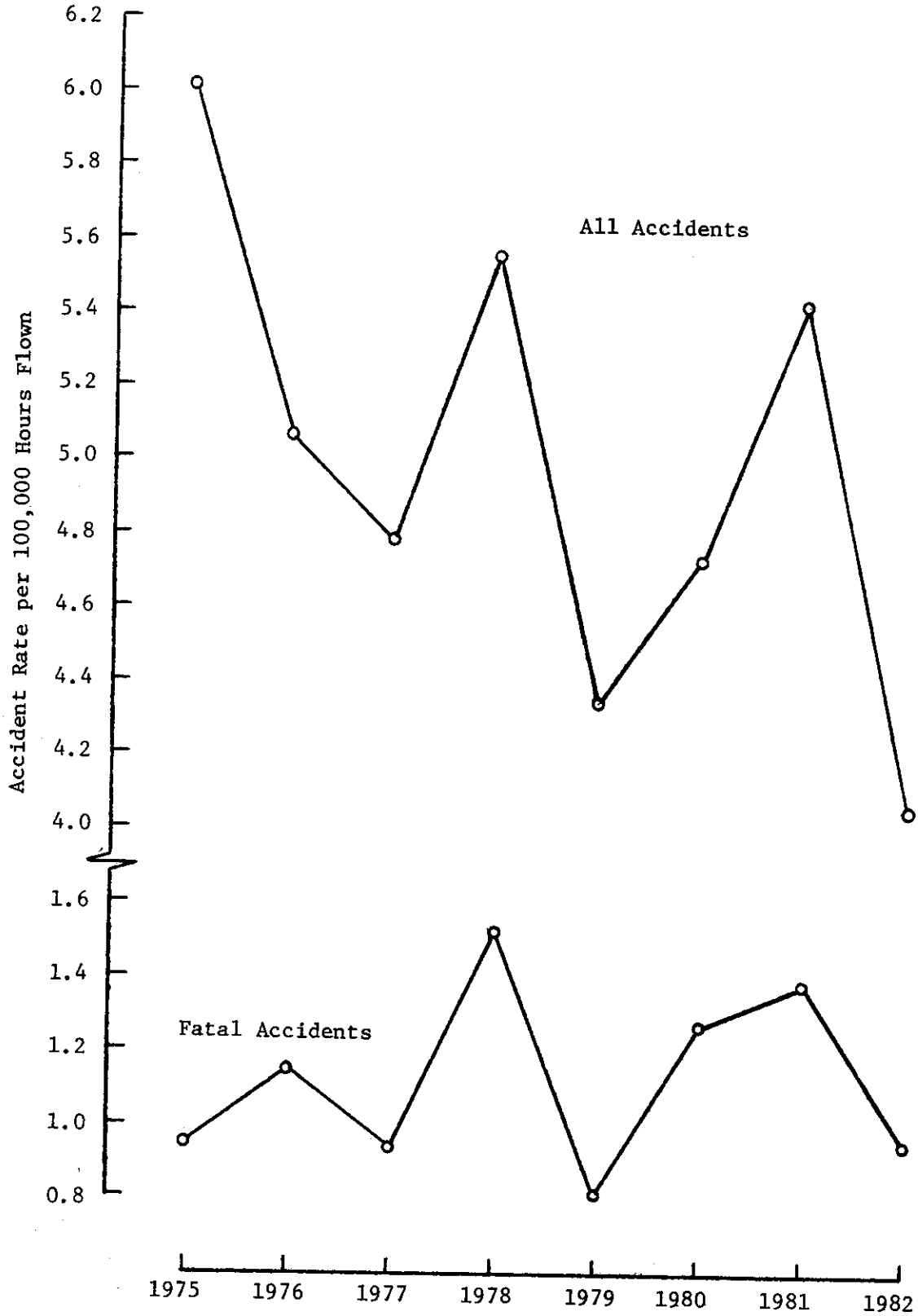

Figure 6 - ACCIDENT RATES
NONSCHEDULED 14 CFR 135 OPERATIONS

Table 68 - MOST PREVALENT FIRST OCCURRENCES IN ALL ACCIDENTS
NONSCHEDULED 14 CFR 135 OPERATIONS
1982 AND 1977 - 1981

	1982		1977 - 1981	
Type of Occurrence	No.	Percent	Mean	Percent
Collision with object/terrain	40	29.9	53.6	31.6
Loss of power	23	17.2	36.6	21.6
Loss of control - in flight	12	9.0	15.6	9.2
Loss of control - on ground	10	7.5	14.0	8.2
Airframe/component/system fail/malf	13	9.7	8.2	4.8
Gear collapsed/retracted	3	2.2	7.8	4.6
Hard landing	0	.0	6.8	4.0
Miscellaneous	5	3.7	6.0	3.5
Nose over/down	3	2.2	4.4	2.6
Roll over	0	.0	3.8	2.2
Midair collision	3	2.2	2.8	1.6
Undershoot	4	3.0	2.6	1.5
Prop/rotor contact	2	1.5	2.0	1.2
Encounter with weather/turbulence	14	10.4	1.8	1.1
(All other types)	2	1.5	3.8	2.2
Total	134	100.0	169.8	100.0

Table 69 - MOST PREVALENT FIRST OCCURRENCES IN FATAL ACCIDENTS
NONSCHEDULED 14 CFR 135 OPERATIONS
1982 AND 1977 - 1981

Type of Occurrence	1982		1977 - 1981	
	No.	Percent	Mean	Percent
Collision with object/terrain	10	31.3	18.0	44.3
Loss of control - in flight	6	18.8	7.8	19.2
Loss of power	3	9.4	6.4	15.8
Airframe/component/system fail/malf	1	3.1	2.2	5.4
Midair collision	2	6.3	2.0	4.9
Undetermined	0	.0	1.0	2.5
Prop/rotor contact	2	6.3	.8	2.0
Encounter with weather/turbulence	6	18.8	.6	1.5
Missing aircraft	1	3.1	.6	1.5
Roll over	0	.0	.6	1.5
(All other types)	1	3.1	.6	1.5
Total	32	100.0	40.6	100.0

Table 70 - MOST PREVALENT FIRST PHASES OF OPERATION IN ALL ACCIDENTS
NONSCHEDULED 14 CFR 135 OPERATIONS
1982 AND 1977 - 1981

	1982		1977 - 1981	
Phase of Operation	No.	Percent	Mean	Percent
Landing	23	17.2	42.0	24.7
Takeoff	27	20.1	36.4	21.4
Cruise	29	21.6	31.2	18.4
Approach	24	17.9	23.4	13.8
Taxi	10	7.5	9.8	5.8
Descent	3	2.2	9.4	5.5
Maneuvering	9	6.7	6.8	4.0
Climb	5	3.7	6.2	3.7
Standing	3	2.2	3.2	1.9
Other	1	.7	1.4	.8
Total	134	100.0	169.8	100.0

Table 71 - MOST PREVALENT FIRST PHASES OF OPERATION IN FATAL ACCIDENTS
NONSCHEDULED 14 CFR 135 OPERATIONS
1982 AND 1977 - 1981

	1982		1977 - 1981	
Phase of Operation	No.	Percent	Mean	Percent
Cruise	10	31.3	10.0	24.6
Approach	10	31.3	9.0	22.2
Takeoff	4	12.5	7.6	18.7
Descent	1	3.1	4.4	10.8
Maneuvering	1	3.1	3.6	8.9
Climb	2	6.3	2.4	5.9
Other	1	3.1	1.4	3.4
Landing	0	.0	1.2	3.0
Standing	3	9.4	.6	1.5
Taxi	0	.0	.4	1.0
Total	32	100.0	40.6	100.0

Table 72 - BROAD CAUSE/FACTOR ASSIGNMENTS IN ALL ACCIDENTS
NONSCHEDULED 14 CFR 135 OPERATIONS
1982 AND 1977 - 1981

	1982		1977 - 1981	
Broad Cause/Factor	No.	Percent	Mean	Percent
Pilot	97	72.4	125.6	74.0
Weather	59	44.0	55.4	32.6
Personnel	20	14.9	33.2	19.6
Terrain	65	48.5	30.4	17.9
Powerplant	24	17.9	27.8	16.4
Airport/Airways/Facilities	14	10.4	19.0	11.2
Landing Gear	15	11.2	11.2	6.6
Miscellaneous	40	29.9	7.4	4.4
Rotorcraft	8	6.0	5.8	3.4
Systems	3	2.2	5.0	2.9
Undetermined	8	6.0	3.8	2.2
Airframe	6	4.5	1.8	1.1
Instruments/Equipment/Accessories	5	3.7	1.4	.8
Number of Aircraft	134		169.8	

Table 73 - BROAD CAUSE/FACTOR ASSIGNMENTS IN FATAL ACCIDENTS
NONSCHEDULED 14 CFR 135 OPERATIONS
1982 AND 1977 - 1981

	1982		1977 - 1981	
Broad Cause/Factor	No.	Percent	Mean	Percent
Pilot	25	78.1	33.6	82.8
Weather	18	56.3	20.4	50.2
Personnel	6	18.8	8.4	20.7
Terrain	12	37.5	5.2	12.8
Powerplant	0	.0	5.0	12.3
Undetermined	6	18.8	2.4	5.9
Miscellaneous	12	37.5	2.0	4.9
Rotorcraft	2	6.3	1.4	3.4
Instruments/Equipment/Accessories	1	3.1	1.0	2.5
Systems	0	.0	.8	2.0
Airframe	2	6.3	.6	1.5
Landing Gear	1	3.1	.4	1.0
Airport/Airways/Facilities	0	.0	.2	.5
Number of Aircraft	32		40.6	

BY THE NATIONAL TRANSPORTATION SAFETY BOARD

/s/ JIM BURNETT
Chairman

/s/ PATRICIA A. GOLDMAN
Vice Chairman

/s/ JOHN K. LAUBER
Member

/s/ JOSEPH T. 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 light multiplied by the number of passengers carried on the flight.

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

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

PHASE OF OPERATION: The 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/stall) 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 five 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 in 1982 (and in the future) to describe the probable cause of, and related factors in an accident. Appendices B, C and D contain cause/factor tables for 1982 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	(OLD) ACCIDENT TYPES	(NEW) 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
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	(OLD) ACCIDENT TYPES	(NEW) 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 Stall - Spin - Spiral - Mush	Loss of control - in flight
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	(OLD) ACCIDENT TYPES	(NEW) OCCURRENCES
Miscellaneous	Miscellaneous/Other Overshoot	Cargo shift Decompression Forced landing Harzardous 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 OPERATIONS
1982

	FATAL ACCIDENTS CAUSE	FATAL ACCIDENTS FACTOR	FATAL ACCIDENTS TOTAL	ALL ACCIDE CAUSE	ALL ACCIDE FACTOR
AIRCRAFT, ENVIRONMENT, HUMAN PERFORMANCE	(12)	(25)	(37)	(42)	(49)
AIRCRAFT	(3)	(1)	(4)	(14)	(4)
STRUCTURE	(1)	(0)	(1)	(6)	(0)
WING	(1)	(0)	(1)	(1)	(0)
WING	(1)	(0)	(1)	(1)	(0)
ICE	1	0	1	1	0
LANDING GEAR	(0)	(0)	(0)	(5)	(0)
LANDING GEAR,MAIN GEAR STRUT	(0)	(0)	(0)	(4)	(0)
CRACKED	0	0	0	1	0
FAILURE,TOTAL	0	0	0	1	0
PREVIOUS DAMAGE	0	0	0	1	0
STRESS CORROSION	0	0	0	1	0
LANDING GEAR,GEAR LEVER	(0)	(0)	(0)	(1)	(0)
DEPLOYED INADVERTENTLY	0	0	0	1	0
SYSTEMS	(1)	(0)	(1)	(1)	(0)
AIR COND/HEATING/PRESSURIZATION	(1)	(0)	(1)	(1)	(0)
AIR COND/HEATING/PRESSURIZATION	(1)	(0)	(1)	(1)	(0)
FLUCTUATING	1	0	1	1	0
POWERPLANT	(1)	(0)	(1)	(7)	(1)
COMPRESSOR ASSEMBLY	(0)	(0)	(0)	(2)	(0)
COMPRESSOR ASSEMBLY	(0)	(0)	(0)	(2)	(0)
FAILURE,TOTAL	0	0	0	1	0
FATIGUE	0	0	0	1	0
FUEL SYSTEM	(0)	(0)	(0)	(4)	(1)
FUEL SYSTEM,TANK	(0)	(0)	(0)	(4)	(0)
CORRODED	0	0	0	1	0
CRACKED	0	0	0	1	0
LEAK	0	0	0	1	0
LOOSE	0	0	0	1	0
FUEL SYSTEM,FILTER	(0)	(0)	(0)	(0)	(1)
BLOCKED(TOTAL)	0	0	0	0	1
MISCELLANEOUS	(1)	(0)	(1)	(1)	(0)
MISCELLANEOUS	(1)	(0)	(1)	(1)	(0)
ICE	1	0	1	1	0
MISCELLANEOUS	(0)	(1)	(1)	(0)	(3)
FLUID	(0)	(0)	(0)	(0)	(2)
FLUID,FUEL	(0)	(0)	(0)	(0)	(2)
ICE	0	0	0	0	1
STARVATION	0	0	0	0	1
AIRCRAFT PERFORMANCE	(0)	(1)	(1)	(0)	(1)
AIRCRAFT PERFORMANCE	(0)	(1)	(1)	(0)	(1)
OTHER	0	1	1	0	1
AIRCRAFT ENVIRONMENT	(0)	(7)	(7)	(1)	(12)
ATC SYSTEMS	(0)	(1)	(1)	(0)	(1)
METEOROLOGICAL SERVICES	(0)	(1)	(1)	(0)	(1)
METEOROLOGICAL SERVICES	(0)	(1)	(1)	(0)	(1)
INADEQUATE	0	1	1	0	1
AIRPORT	(0)	(3)	(3)	(1)	(6)
AIRPORT FACILITIES	(0)	(3)	(3)	(1)	(6)
AIRPORT FACILITIES,RUNWAY/LANDING AREA CONDITION	(0)	(1)	(1)	(0)	(4)
ICY	0	1	1	0	1
SNOWBANK	0	0	0	0	1
SNOW COVERED	0	0	0	0	1
WET	0	0	0	0	1
AIRPORT FACILITIES,RAMP FACILITIES	(0)	(1)	(1)	(1)	(1)
FAILURE,TOTAL	0	0	0	1	0
FOREIGN SUBSTANCE COVERED	0	1	1	0	1
AIRPORT FACILITIES,RUNWAY REMAINING DIST MARKERS	(0)	(1)	(1)	(0)	(1)
INADEQUATE	0	1	1	0	1
TERRAIN/RUNWAY	(0)	(3)	(3)	(0)	(5)
TERRAIN/RUNWAY CONDITION	0	0	0	0	1
DOWNHILL	0	1	1	0	1
SNOW COVERED	0	1	1	0	1

CAUSE/FACTOR TABLE
14 CFR 121 OPERATIONS
1982

	FATAL ACCIDENTS CAUSE	FATAL ACCIDENTS FACTOR	FATAL ACCIDENTS TOTAL	ALL ACCIDE CAUSE	ALL ACCIDE FACTOR
AIRCRAFT, ENVIRONMENT, HUMAN PERFORMANCE (Continued)					
AIRCRAFT ENVIRONMENT (Continued)					
TERRAIN/RUNWAY (Continued)					
SOFT	0	0	0	0	1
WATER,ROUGH	0	1	1	0	1
ENVIRONMENTAL CONDITIONS	(4)	(7)	(11)	(7)	(16)
WEATHER CONDITION	(4)	(6)	(10)	(7)	(14)
WEATHER CONDITION	1	0	1	1	0
DOWNDRAFT	1	0	1	1	0
FOG	0	0	0	0	2
ICING CONDITIONS	0	1	1	0	1
LOW CEILING	0	0	0	0	1
MOUNTAIN WAVE	0	0	0	0	1
RAIN	0	2	2	0	3
SNOW	0	1	1	0	1
TEMPERATURE EXTREMES	0	1	1	0	2
TURBULENCE,CLEAR AIR	0	0	0	1	1
TURBULENCE IN CLOUDS	0	0	0	2	0
WINDSHEAR	1	0	1	1	1
UNFAVORABLE WIND	1	1	2	1	1
LIGHT CONDITION	(0)	(0)	(0)	(0)	(1)
DARK NIGHT	0	0	0	0	1
OBJECT	(0)	(1)	(1)	(0)	(1)
VEHICLE	0	1	1	0	1
HUMAN PERFORMANCE	(5)	(10)	(15)	(20)	(17)
AIRCRAFT	(1)	(2)	(3)	(8)	(2)
LANDING GEAR	(0)	(0)	(0)	(1)	(0)
BRAKES(NORMAL)	(0)	(0)	(0)	(1)	(0)
IMPROPER USE OF	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
FLIGHT CONTROLS	(0)	(0)	(0)	(1)	(0)
RAISING OF FLAPS	(0)	(0)	(0)	(1)	(0)
IMPROPER	(0)	(0)	(0)	(1)	(0)
COPILOT	0	0	0	1	0
POWERPLANT CONTROLS	(0)	(2)	(2)	(0)	(2)
THROTTLE/POWER CONTROL	(0)	(1)	(1)	(0)	(1)
DELAYED	(0)	(1)	(1)	(0)	(1)
NO PERSON SPECIFIED	0	1	1	0	1
REVERSERS	(0)	(1)	(1)	(0)	(1)
IMPROPER USE OF	(0)	(1)	(1)	(0)	(1)
PILOT IN COMMAND	0	1	1	0	1
ANTI-ICE/DE-ICE SYSTEM	(1)	(0)	(1)	(1)	(0)
ANTI-ICE/DE-ICE SYSTEM	(1)	(0)	(1)	(1)	(0)
NOT USED	(1)	(0)	(1)	(1)	(0)
PILOT IN COMMAND	1	0	1	1	0
MISCELLANEOUS EQUIPMENT	(0)	(0)	(0)	(5)	(0)
SEAT BELT	(0)	(0)	(0)	(5)	(0)
NOT USED	(0)	(0)	(0)	(5)	(0)
FLIGHT ATTENDANT	0	0	0	3	0
PASSENGER	0	0	0	2	0
OPERATIONS	(4)	(8)	(12)	(12)	(15)
PLANNING-DECISION	(1)	(2)	(3)	(3)	(2)
PLANNING-DECISION	(1)	(0)	(1)	(1)	(0)
IMPROPER	(1)	(0)	(1)	(1)	(0)
PILOT IN COMMAND	1	0	1	1	0
AIRCRAFT PREFLIGHT	(0)	(0)	(0)	(1)	(0)
INADEQUATE	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
ICE/FROST REMOVAL FROM AIRCRAFT	(0)	(2)	(2)	(0)	(2)
IMPROPER	(0)	(2)	(2)	(0)	(2)
COMPANY MAINTENANCE PSNL	0	1	1	0	1
OTHER MAINTENANCE PSNL	0	1	1	0	1
PROCEDURES/DIRECTIVES	(0)	(0)	(0)	(1)	(0)

CAUSE/FACTOR TABLE
14 CFR 121 OPERATIONS
1982

	FATAL ACCIDENTS CAUSE	FATAL ACCIDENTS FACTOR	FATAL ACCIDENTS TOTAL	ALL ACCIDE CAUSE	ALL ACCIDE FACTOR
AIRCRAFT, ENVIRONMENT, HUMAN PERFORMANCE (Continued)					
HUMAN PERFORMANCE (Continued)					
OPERATIONS (Continued)					
PLANNING-DECISION (Continued)					
PROCEDURES/DIRECTIVES (Continued)					
NOT FOLLOWED	(0)	(0)	(0)	(1)	(0)
COMPANY MAINTENANCE PSNL	0	0	0	1	0
MAINTENANCE	(0)	(0)	(0)	(0)	(1)
MAINTENANCE	(0)	(0)	(0)	(0)	(1)
POOR	(0)	(0)	(0)	(0)	(1)
COMPANY MAINTENANCE PSNL	0	0	0	0	1
AIRCRAFT HANDLING	(1)	(3)	(4)	(6)	(4)
AIRCRAFT HANDLING	(0)	(1)	(1)	(0)	(1)
REDUCED	(0)	(1)	(1)	(0)	(1)
NO PERSON SPECIFIED	0	1	1	0	1
ABORT ABOVE V1	(0)	(0)	(0)	(1)	(0)
PERFORMED	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
ABORTED TAKEOFF	(1)	(0)	(1)	(1)	(0)
NOT PERFORMED	(1)	(0)	(1)	(1)	(0)
PILOT IN COMMAND	1	0	1	1	0
AIRSPEED	(0)	(2)	(2)	(0)	(2)
EXCESSIVE	(0)	(1)	(1)	(0)	(1)
PILOT IN COMMAND	0	1	1	0	1
INADEQUATE	(0)	(1)	(1)	(0)	(1)
NO PERSON SPECIFIED	0	1	1	0	1
ALTITUDE	(0)	(0)	(0)	(2)	(0)
MISJUDGED	(0)	(0)	(0)	(2)	(0)
PILOT IN COMMAND	0	0	0	2	0
DISTANCE	(0)	(0)	(0)	(2)	(0)
MISJUDGED	(0)	(0)	(0)	(2)	(0)
PILOT IN COMMAND	0	0	0	2	0
PROPER ALIGNMENT	(0)	(0)	(0)	(0)	(1)
NOT MAINTAINED	(0)	(0)	(0)	(0)	(1)
PILOT IN COMMAND	0	0	0	0	1
COMMUNICATIONS/INFORMATION/ATC	(2)	(3)	(5)	(3)	(8)
COMMUNICATIONS/INFORMATION/ATC	(0)	(0)	(0)	(0)	(1)
NOT UNDERSTOOD	(0)	(0)	(0)	(0)	(1)
PILOT IN COMMAND	0	0	0	0	1
INTERPRETATION OF INSTRUCTIONS	(0)	(0)	(0)	(0)	(1)
INADEQUATE	(0)	(0)	(0)	(0)	(1)
PASSENGER	0	0	0	0	1
INSTRUCTIONS,WRITTEN/VERBAL	(0)	(0)	(0)	(0)	(1)
INADEQUATE	(0)	(0)	(0)	(0)	(1)
COMPANY/OPERATOR MGMT	0	0	0	0	1
MONITORING	(0)	(1)	(1)	(0)	(1)
INADEQUATE	(0)	(1)	(1)	(0)	(1)
ATC PSNL(LCL/GND/CLNC)	0	1	1	0	1
SAFETY ADVISORY	(1)	(1)	(2)	(1)	(3)
IMPROPER	(0)	(0)	(0)	(0)	(2)
GROUND PERSONNEL	0	0	0	0	1
PILOT OF OTHER AIRCRAFT	0	0	0	0	1
NOT ISSUED	(1)	(1)	(2)	(1)	(1)
ATC PSNL(LCL/GND/CLNC)	1	0	1	1	0
PILOT OF OTHER AIRCRAFT	0	1	1	0	1
ATC CLEARANCE	(0)	(1)	(1)	(0)	(1)
DELAYED	(0)	(1)	(1)	(0)	(1)
NO PERSON SPECIFIED	0	1	1	0	1
SUPERVISION	(0)	(0)	(0)	(1)	(0)
INADEQUATE	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0

CAUSE/FACTOR TABLE
14 CFR 121 OPERATIONS
1982

	FATAL ACCIDENTS CAUSE	FACTOR	TOTAL	ALL ACCIDE CAUSE	FACTOR
AIRCRAFT, ENVIRONMENT, HUMAN PERFORMANCE (Continued)					
HUMAN PERFORMANCE (Continued)					
OPERATIONS (Continued)					
COMMUNICATIONS/INFORMATION/ATC (Continued)					
UNSAFE/HAZARDOUS CONDITION	(1)	(0)	(1)	(1)	(0)
NOT IDENTIFIED	(1)	(0)	(1)	(1)	(0)
AIRPORT PERSONNEL	1	0	1	1	0
UNDETERMINED	0	0	0	1	0
DIRECT UNDERLYING CAUSE FACTORS:	(0)	(1)	(1)	(0)	(3)
IMPROPER DECISION	(0)	(1)	(1)	(0)	(1)
EXPERIENCE	(0)	(1)	(1)	(0)	(1)
PILOT IN COMMAND	0	1	1	0	1
AIRCRAFT/EQUIPMENT INADEQUATE	(0)	(0)	(0)	(0)	(1)
AIRCRAFT MANUALS	(0)	(0)	(0)	(0)	(1)
MANUFACTURER	0	0	0	0	1
MATERIAL INADEQUATE	(0)	(0)	(0)	(0)	(1)
MATERIAL DEFECT(INADEQUATE QUALITY CONTROL)	(0)	(0)	(0)	(0)	(1)
MANUFACTURER	0	0	0	0	1
INDIRECT UNDERLYING CAUSE FACTORS:	(1)	(0)	(1)	(1)	(0)
INSUFFICIENT STANDARDS/REQUIREMENTS	(1)	(0)	(1)	(1)	(0)
OPERATION/OPERATOR	(1)	(0)	(1)	(1)	(0)
FAA(ORGANIZATION)	1	0	1	1	0

APPENDIX C

CAUSE/FACTOR TABLE
SCHEDULED 14 CFR 135 ACCIDENTS

CAUSE/FACTOR TABLE
SCHEDULED 14 CFR 135 OPERATIONS
1982

	FATAL ACCIDENTS			ALL ACCIDE	
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR
AIRCRAFT, ENVIRONMENT, HUMAN PERFORMANCE	(12)	(16)	(28)	(63)	(41)
AIRCRAFT	(6)	(6)	(12)	(37)	(18)
STRUCTURE	(4)	(2)	(6)	(13)	(5)
FUSELAGE	(1)	(2)	(3)	(2)	(2)
FUSELAGE,CREW COMPARTMENT	(1)	(1)	(2)	(1)	(1)
FIRE	1	0	1	1	0
SMOKE	0	1	1	0	1
FUSELAGE,CABIN	(0)	(1)	(1)	(0)	(1)
SMOKE	0	1	1	0	1
FUSELAGE,INSTRUMENT/ELECTRICAL PANEL	(0)	(0)	(0)	(1)	(0)
BURNED	0	0	0	1	0
WING	(0)	(0)	(0)	(0)	(1)
WING	(0)	(0)	(0)	(0)	(1)
ICE	0	0	0	0	1
FLIGHT CONTROL SURFACES/ATTACHMENTS	(1)	(0)	(1)	(1)	(0)
FLIGHT CONTROL,FLAP	(1)	(0)	(1)	(1)	(0)
ASYMMETRICAL	1	0	1	1	0
LANDING GEAR	(0)	(0)	(0)	(5)	(1)
LANDING GEAR,MAIN GEAR	(0)	(0)	(0)	(1)	(0)
MOVEMENT RESTRICTED	0	0	0	1	0
LANDING GEAR,GEAR WARNING SYSTEM	(0)	(0)	(0)	(0)	(1)
DISABLED	0	0	0	0	1
LANDING GEAR,NORMAL BRAKE SYSTEM	(0)	(0)	(0)	(3)	(0)
ASYMMETRICAL	0	0	0	1	0
FAILURE,TOTAL	0	0	0	1	0
INCORRECT	0	0	0	1	0
LANDING GEAR,NORMAL RETRACTION/EXTENSION ASSEMBLY	(0)	(0)	(0)	(1)	(0)
JAMMED	0	0	0	1	0
DOOR	(0)	(0)	(0)	(3)	(0)
DOOR,LANDING GEAR	(0)	(0)	(0)	(3)	(0)
ASSEMBLY	0	0	0	1	0
DISCONNECTED	0	0	0	1	0
LOOSE	0	0	0	1	0
WINDOW	(0)	(0)	(0)	(0)	(1)
WINDOW,FLIGHT COMPARTMENT WINDOW/WINDSHIELD	(0)	(0)	(0)	(0)	(1)
DIRTY(FOGGY)	0	0	0	0	1
FLIGHT CONTROL SYSTEM	(2)	(0)	(2)	(2)	(0)
FLT CONTROL SYST,WING FLAP CONTROL	(2)	(0)	(2)	(2)	(0)
INADEQUATE	1	0	1	1	0
WORN	1	0	1	1	0
SYSTEMS	(2)	(0)	(2)	(8)	(0)
HYDRAULIC SYSTEM	(0)	(0)	(0)	(5)	(0)
HYDRAULIC SYSTEM,LINE	(0)	(0)	(0)	(5)	(0)
BURNED	0	0	0	1	0
CONTAMINATION	0	0	0	1	0
DUMPED	0	0	0	1	0
FAILURE,PARTIAL	0	0	0	1	0
LEAK	0	0	0	1	0
ANTI-ICE/DE-ICE SYSTEM	(2)	(0)	(2)	(2)	(0)
ANTI-ICE/DE-ICE SYSTEM,WINDSHIELD	(2)	(0)	(2)	(2)	(0)
BRITTLE FRACTURE	1	0	1	1	0
LEAK	1	0	1	1	0
OXYGEN SYSTEM	(0)	(0)	(0)	(1)	(0)
OXYGEN SYSTEM,CREW	(0)	(0)	(0)	(1)	(0)
EXPLODED	0	0	0	1	0
POWERPLANT	(0)	(0)	(0)	(11)	(2)
ENGINE ASSEMBLY	(0)	(0)	(0)	(6)	(1)
ENGINE ASSEMBLY,CRANKCASE	(0)	(0)	(0)	(2)	(0)
CRACKED	0	0	0	2	0
ENGINE ASSEMBLY,CONNECTING ROD	(0)	(0)	(0)	(1)	(0)
FAILURE,PARTIAL	0	0	0	1	0

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	FATAL ACCIDENTS CAUSE	FATAL ACCIDENTS FACTOR	FATAL ACCIDENTS TOTAL	ALL ACCIDE CAUSE	ALL ACCIDE FACTOR
AIRCRAFT, ENVIRONMENT, HUMAN PERFORMANCE (Continued)					
AIRCRAFT (Continued)					
POWERPLANT (Continued)					
ENGINE ASSEMBLY (Continued)					
ENGINE ASSEMBLY,CYLINDER	(0)	(0)	(0)	(1)	(0)
SEPARATION	0	0	0	1	0
ENGINE ASSEMBLY,PISTON	(0)	(0)	(0)	(1)	(0)
FAILURE,PARTIAL	0	0	0	1	0
ENGINE ASSEMBLY,RING	(0)	(0)	(0)	(1)	(0)
FAILURE,PARTIAL	0	0	0	1	0
ENGINE ASSEMBLY,OTHER	(0)	(0)	(0)	(0)	(1)
WORN	0	0	0	0	1
PROPELLER SYSTEM/ACCESSORIES	(0)	(0)	(0)	(3)	(0)
PROPELLER SYSTEM/ACCESSORIES,BLADE	(0)	(0)	(0)	(3)	(0)
FATIGUE	0	0	0	1	0
FOREIGN OBJECT DAMAGE	0	0	0	1	0
SEPARATION	0	0	0	1	0
FUEL SYSTEM	(0)	(0)	(0)	(2)	(0)
FUEL SYSTEM,LINE	(0)	(0)	(0)	(2)	(0)
DISCONNECTED	0	0	0	1	0
FIRE	0	0	0	1	0
ENGINE INSTRUMENTS	(0)	(0)	(0)	(0)	(1)
ENGINE INSTRUMENTS,EGT GAGE	(0)	(0)	(0)	(0)	(1)
FALSE INDICATION	0	0	0	0	1
MISCELLANEOUS	(0)	(0)	(0)	(5)	(0)
FLUID	(0)	(0)	(0)	(3)	(0)
FLUID,FUEL	(0)	(0)	(0)	(1)	(0)
STARVATION	0	0	0	1	0
FLUID,OIL	(0)	(0)	(0)	(2)	(0)
EXHAUSTION	0	0	0	1	0
LEAK	0	0	0	1	0
LIGHTS	(0)	(0)	(0)	(2)	(0)
INSTRUMENT LIGHTS	(0)	(0)	(0)	(2)	(0)
ARCING	0	0	0	1	0
CONTAMINATION	0	0	0	1	0
TERRAIN/RUNWAY	(0)	(4)	(4)	(0)	(11)
DIRT BANK	0	0	0	0	1
MOUNTAINOUS/HILLY	0	2	2	0	2
RISING	0	2	2	0	2
ROUGH/UNEVEN	0	0	0	0	2
SLUSH COVERED	0	0	0	0	1
SNOW COVERED	0	0	0	0	1
SOFT	0	0	0	0	1
WET	0	0	0	0	1
ENVIRONMENTAL CONDITIONS	(0)	(3)	(3)	(1)	(18)
WEATHER CONDITION	(0)	(6)	(6)	(1)	(14)
CLOUDS	0	1	1	0	1
DOWNDRAFT	0	0	0	0	1
FOG	0	2	2	0	3
ICING CONDITIONS	0	0	0	0	1
LOW CEILING	0	1	1	0	3
SNOW	0	0	0	0	1
TURBULENCE	0	1	1	0	1
TURBULENCE IN CLOUDS	0	0	0	0	1
WHITEOUT	0	0	0	0	1
WINDSHEAR	0	1	1	1	1
LIGHT CONDITION	(0)	(2)	(2)	(0)	(3)
DARK NIGHT	0	2	2	0	3
OBJECT	(0)	(0)	(0)	(0)	(1)
BUILDING(NONRESIDENTIAL)	0	0	0	0	1
HUMAN PERFORMANCE	(6)	(2)	(8)	(25)	(5)

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	FATAL ACCIDENTS CAUSE	FATAL ACCIDENTS FACTOR	FATAL ACCIDENTS TOTAL	ALL ACCIDE CAUSE	ALL ACCIDE FACTOR
AIRCRAFT, ENVIRONMENT, HUMAN PERFORMANCE (Continued)					
HUMAN PERFORMANCE (Continued)					
AIRCRAFT	(0)	(1)	(1)	(3)	(1)
LANDING GEAR	(0)	(0)	(0)	(1)	(0)
GEAR EXTENSION	(0)	(0)	(0)	(1)	(0)
NOT PERFORMED	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
FUEL SYSTEM	(0)	(0)	(0)	(2)	(0)
FUEL TANK SELECTOR POSITION	(0)	(0)	(0)	(1)	(0)
IMPROPER	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
FUEL SUPPLY	(0)	(0)	(0)	(1)	(0)
INATTENTIVE	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
FIRE EXTINGUISHING EQUIPMENT	(0)	(1)	(1)	(0)	(1)
FIRE EXTINGUISHING EQUIPMENT	(0)	(1)	(1)	(0)	(1)
NOT IDENTIFIED	(0)	(1)	(1)	(0)	(1)
PASSENGER	0	1	1	0	1
OPERATIONS	(6)	(1)	(7)	(22)	(4)
PLANNING-DECISION	(2)	(0)	(2)	(11)	(0)
PLANNING-DECISION	(0)	(0)	(0)	(1)	(0)
INADEQUATE	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
PREFLIGHT PLANNING/PREPARATION	(0)	(0)	(0)	(2)	(0)
INADEQUATE	(0)	(0)	(0)	(2)	(0)
PILOT IN COMMAND	0	0	0	2	0
AIRCRAFT PREFLIGHT	(0)	(0)	(0)	(1)	(0)
INADEQUATE	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
AIRCRAFT WEIGHT AND BALANCE	(0)	(0)	(0)	(1)	(0)
EXCEEDED	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
PROPER ASSISTANCE	(0)	(0)	(0)	(1)	(0)
INADEQUATE	(0)	(0)	(0)	(1)	(0)
GROUND PERSONNEL	0	0	0	1	0
IN-FLIGHT PLANNING/DECISION	(1)	(0)	(1)	(1)	(0)
IMPROPER	(1)	(0)	(1)	(1)	(0)
PILOT IN COMMAND	1	0	1	1	0
VFR FLIGHT INTO IMC	(1)	(0)	(1)	(1)	(0)
CONTINUED	(1)	(0)	(1)	(1)	(0)
PILOT IN COMMAND	1	0	1	1	0
VISUAL LOOKOUT	(0)	(0)	(0)	(3)	(0)
INADEQUATE	(0)	(0)	(0)	(3)	(0)
PILOT IN COMMAND	0	0	0	2	0
PILOT OF OTHER AIRCRAFT	0	0	0	1	0
MAINTENANCE	(1)	(0)	(1)	(3)	(0)
MAINTENANCE	(1)	(0)	(1)	(1)	(0)
INADEQUATE	(1)	(0)	(1)	(1)	(0)
COMPANY MAINTENANCE PSNL	1	0	1	1	0
MAINTENANCE,REPLACEMENT	(0)	(0)	(0)	(2)	(0)
IMPROPER	(0)	(0)	(0)	(1)	(0)
COMPANY MAINTENANCE PSNL	0	0	0	1	0
NOT PERFORMED	(0)	(0)	(0)	(1)	(0)
COMPANY MAINTENANCE PSNL	0	0	0	1	0
AIRCRAFT HANDLING	(2)	(0)	(2)	(6)	(1)
AIRCRAFT HANDLING	(1)	(0)	(1)	(1)	(0)
NOT POSSIBLE	(1)	(0)	(1)	(1)	(0)
PILOT IN COMMAND	1	0	1	1	0
ABORTED TAKEOFF	(0)	(0)	(0)	(1)	(0)
DELAYED	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
AIRSPEED	(0)	(0)	(0)	(1)	(0)

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	FATAL ACCIDENTS CAUSE FACTOR		TOTAL	ALL ACCIDE CAUSE FACTOR	
AIRCRAFT, ENVIRONMENT, HUMAN PERFORMANCE (Continued)					
HUMAN PERFORMANCE (Continued)					
OPERATIONS (Continued)					
AIRCRAFT HANDLING (Continued)					
AIRSPEED (Continued)					
NOT MAINTAINED	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
AIRSPEED(VLOF)	(0)	(0)	(0)	(0)	(1)
NOT OBTAINED	(0)	(0)	(0)	(0)	(1)
PILOT IN COMMAND	0	0	0	0	1
ALTITUDE	(1)	(0)	(1)	(1)	(0)
INATTENTIVE	(1)	(0)	(1)	(1)	(0)
PILOT IN COMMAND	1	0	1	1	0
PROPER CLIMB RATE	(0)	(0)	(0)	(1)	(0)
NOT PERFORMED	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
PROPER ALIGNMENT	(0)	(0)	(0)	(1)	(0)
NOT ATTAINED	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
COMMUNICATIONS/INFORMATION/ATC	(1)	(1)	(2)	(2)	(3)
INSTRUCTIONS,WRITTEN/VERBAL	(0)	(1)	(1)	(0)	(1)
INADEQUATE	(0)	(1)	(1)	(0)	(1)
NO PERSON SPECIFIED	0	1	1	0	1
TRAFFIC ADVISORY	(0)	(0)	(0)	(0)	(1)
DELAYED	(0)	(0)	(0)	(0)	(1)
ATC PERSONNEL(DEP/APCH)	0	0	0	0	1
RADAR SEPARATION	(0)	(0)	(0)	(0)	(1)
NOT MAINTAINED	(0)	(0)	(0)	(0)	(1)
ATC PERSONNEL(DEP/APCH)	0	0	0	0	1
SUPERVISION	(1)	(0)	(1)	(1)	(0)
INADEQUATE	(1)	(0)	(1)	(1)	(0)
COMPANY/OPERATOR MGMT	1	0	1	1	0
UNSAFE/HAZARDOUS CONDITION	(0)	(0)	(0)	(1)	(0)
INATTENTIVE	(0)	(0)	(0)	(1)	(0)
GROUND PERSONNEL	0	0	0	1	0
UNDETERMINED	0	0	0	2	0
DIRECT UNDERLYING CAUSE FACTORS:	(2)	(2)	(4)	(2)	(4)
IMPROPER USE OF PROCEDURE	(0)	(2)	(2)	(0)	(2)
DIVERTED ATTENTION	(0)	(1)	(1)	(0)	(1)
PILOT IN COMMAND	0	1	1	0	1
PHYSICAL IMPAIRMENT	(0)	(1)	(1)	(0)	(1)
COPILOT	0	1	1	0	1
IMPROPER USE OF EQUIPMENT/AIRCRAFT	(0)	(0)	(0)	(0)	(1)
INFORMATION INSUFFICIENT	(0)	(0)	(0)	(0)	(1)
MANUFACTURER	0	0	0	0	1
AIRCRAFT/EQUIPMENT INADEQUATE	(2)	(0)	(2)	(2)	(1)
ACFT HANDLING/PERF CAPABILITIES	(1)	(0)	(1)	(1)	(0)
MANUFACTURER	1	0	1	1	0
AIRFRAME	(0)	(0)	(0)	(0)	(1)
MANUFACTURER	0	0	0	0	1
AIRCRAFT COMPONENT	(1)	(0)	(1)	(1)	(0)
MANUFACTURER	1	0	1	1	0

APPENDIX D

CAUSE/FACTOR TABLE
NONSCHEDULED 14 CFR 135 ACCIDENTS

CAUSE/FACTOR TABLE
NONSCHEDULED 14 CFR 135 OPERATIONS
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	FATAL ACCIDENTS CAUSE	FATAL ACCIDENTS FACTOR	FATAL ACCIDENTS TOTAL	ALL ACCIDE CAUSE	ALL ACCIDE FACTOR
AIRCRAFT, ENVIRONMENT, HUMAN PERFORMANCE	(52)	(99)	(151)	(248)	(353)
AIRCRAFT	(6)	(5)	(11)	(69)	(35)
STRUCTURE	(5)	(4)	(9)	(27)	(16)
WING	(1)	(1)	(2)	(1)	(2)
WING	(1)	(1)	(2)	(1)	(2)
ICE	1	1	2	1	2
NACELLE/PYLON	(0)	(0)	(0)	(0)	(3)
NACELLE/PYLON,SKIN	(0)	(0)	(0)	(0)	(3)
LOOSE	0	0	0	0	1
UNLOCKED	0	0	0	0	1
VIBRATION	0	0	0	0	1
LANDING GEAR	(0)	(3)	(3)	(14)	(8)
LANDING GEAR	(0)	(0)	(0)	(0)	(1)
OVERLOAD	0	0	0	0	1
LANDING GEAR,MAIN GEAR	(0)	(0)	(0)	(4)	(1)
ASYMMETRICAL	0	0	0	1	0
DISCONNECTED	0	0	0	1	0
FAILURE,PARTIAL	0	0	0	1	0
IMPROPER	0	0	0	1	0
OVERLOAD	0	0	0	0	1
LANDING GEAR,MAIN GEAR ATTACHMENT	(0)	(0)	(0)	(0)	(1)
OVERLOAD	0	0	0	0	1
LANDING GEAR,NOSE GEAR	(0)	(0)	(0)	(1)	(1)
OVERLOAD	0	0	0	0	1
UNLOCKED	0	0	0	1	0
LANDING GEAR,EMERGENCY EXTENSION ASSEMBLY	(0)	(0)	(0)	(1)	(0)
JAMMED	0	0	0	1	0
LANDING GEAR,TIRE	(0)	(0)	(0)	(1)	(0)
FAILURE,PARTIAL	0	0	0	1	0
LANDING GEAR,SKI ASSEMBLY	(0)	(0)	(0)	(0)	(1)
OVERLOAD	0	0	0	0	1
LANDING GEAR,FLOAT ASSEMBLY	(0)	(3)	(3)	(0)	(3)
FOREIGN OBJECT DAMAGE	0	1	1	0	1
LEAK	0	1	1	0	1
PENETRATED	0	1	1	0	1
LANDING GEAR,GEAR INDICATING SYSTEM	(0)	(0)	(0)	(1)	(0)
UNDETERMINED	0	0	0	1	0
LANDING GEAR,NORMAL BRAKE SYSTEM	(0)	(0)	(0)	(3)	(0)
FAILURE,TOTAL	0	0	0	1	0
INADEQUATE	0	0	0	1	0
UNDETERMINED	0	0	0	1	0
LANDING GEAR,NOSEWHEEL STEERING	(0)	(0)	(0)	(2)	(0)
FAILURE,TOTAL	0	0	0	1	0
OVERLOAD	0	0	0	1	0
LANDING GEAR,NORMAL RETRACTION/EXTENSION ASSEMBLY	(0)	(0)	(0)	(1)	(0)
FAILURE,TOTAL	0	0	0	1	0
DOOR	(0)	(0)	(0)	(0)	(1)
DOOR,PASSENGER	(0)	(0)	(0)	(0)	(1)
OPEN	0	0	0	0	1
WINDOW	(0)	(0)	(0)	(0)	(1)
WINDOW,FLIGHT COMPARTMENT WINDOW/WINDSHIELD	(0)	(0)	(0)	(0)	(1)
ICE	0	0	0	0	1
ROTORCRAFT FLIGHT CONTROL	(0)	(0)	(0)	(1)	(0)
ROTORCRAFT FLIGHT CONTROL,CYCLIC CONTROL	(0)	(0)	(0)	(1)	(0)
UNDETERMINED	0	0	0	1	0
ROTOR DRIVE SYSTEM	(4)	(0)	(4)	(8)	(0)
ROTOR DRIVE SYSTEM,FREEWHEELING UNIT(OTHER)	(0)	(0)	(0)	(1)	(0)
FAILURE,TOTAL	0	0	0	1	0
ROTOR DRIVE SYSTEM,MAIN GEAR BOX/TRANSMISSION	(0)	(0)	(0)	(1)	(0)

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	FATAL ACCIDENTS CAUSE	FATAL ACCIDENTS FACTOR	FATAL ACCIDENTS TOTAL	ALL ACCIDE CAUSE	ALL ACCIDE FACTOR
AIRCRAFT, ENVIRONMENT, HUMAN PERFORMANCE (Continued)					
AIRCRAFT (Continued)					
STRUCTURE (Continued)					
ROTOR DRIVE SYSTEM (Continued)					
ROTOR DRIVE SYSTEM,MAIN GEAR BOX/TRANSMISSION	(0)	(0)	(Continued)		
FAILURE,TOTAL	0	0	0	1	0
ROTOR DRIVE SYSTEM,TAIL ROTOR DRIVE SHAFT	(4)	(0)	(4)	(6)	(0)
DISCONNECTED	1	0	1	1	0
FAILURE,TOTAL	0	0	0	1	0
OTHER	1	0	1	1	0
OVERTEMPERATURE	1	0	1	2	0
WORN	1	0	1	1	0
ROTOR SYSTEM	(0)	(0)	(0)	(3)	(1)
ROTOR SYSTEM	(0)	(0)	(0)	(0)	(1)
DISTORTED	0	0	0	0	1
ROTOR SYSTEM,MAIN ROTOR HUB YOKE(SPINDLE)	(0)	(0)	(0)	(3)	(0)
CHAFED	0	0	0	1	0
FATIGUE	0	0	0	1	0
UNDERTORQUED	0	0	0	1	0
SYSTEMS	(1)	(1)	(2)	(6)	(13)
ELECTRICAL SYSTEM	(0)	(0)	(0)	(5)	(9)
ELECTRICAL SYSTEM	(0)	(0)	(0)	(2)	(2)
FAILURE,TOTAL	0	0	0	2	1
OUTPUT LOW	0	0	0	0	1
ELECTRICAL SYSTEM,BATTERY	(0)	(0)	(0)	(0)	(2)
DETERIORATED	0	0	0	0	1
INADEQUATE	0	0	0	0	1
ELECTRICAL SYSTEM,ALTERNATOR	(0)	(0)	(0)	(3)	(3)
CONTAMINATION	0	0	0	1	0
FAILURE,PARTIAL	0	0	0	0	1
INOPERATIVE	0	0	0	0	1
SEPARATION	0	0	0	0	1
SHORTED	0	0	0	1	0
WORN	0	0	0	1	0
ELECTRICAL SYSTEM,ELECTRIC WIRING	(0)	(0)	(0)	(0)	(2)
DISCONNECTED	0	0	0	0	1
VIBRATION	0	0	0	0	1
FLIGHT/NAV INSTRUMENTS	(0)	(0)	(0)	(0)	(1)
FLIGHT/NAV INSTRUMENTS,ALTIMETER	(0)	(0)	(0)	(0)	(1)
UNDETERMINED	0	0	0	0	1
COMM/NAV EQUIPMENT	(0)	(1)	(1)	(0)	(3)
COMM/NAV EQUIPMENT	(0)	(1)	(1)	(0)	(2)
INOPERATIVE	0	1	1	0	2
COMM/NAV EQUIPMENT,ILS RECEIVER	(0)	(0)	(0)	(0)	(1)
INOPERATIVE	0	0	0	0	1
MISC ROTORCRAFT	(1)	(0)	(1)	(1)	(0)
MISC ROTORCRAFT,EMERGENCY FLOATATION GEAR	(1)	(0)	(1)	(1)	(0)
NOT ENGAGED	1	0	1	1	0
POWERPLANT	(0)	(0)	(0)	(26)	(3)
ENGINE ASSEMBLY	(0)	(0)	(0)	(2)	(0)
ENGINE ASSEMBLY	(0)	(0)	(0)	(1)	(0)
FIRE	0	0	0	1	0
ENGINE ASSEMBLY,CRANKSHAFT	(0)	(0)	(0)	(1)	(0)
FATIGUE	0	0	0	1	0
TURBINE ASSEMBLY	(0)	(0)	(0)	(1)	(0)
TURBINE ASSEMBLY,TURBINE WHEEL	(0)	(0)	(0)	(1)	(0)
FATIGUE	0	0	0	1	0
EXHAUST SYSTEM	(0)	(0)	(0)	(4)	(0)
EXHAUST SYSTEM,STACK	(0)	(0)	(0)	(4)	(0)
FATIGUE	0	0	0	1	0
LOOSE	0	0	0	1	0
SEPARATION	0	0	0	1	0

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	FATAL ACCIDENTS CAUSE	FATAL ACCIDENTS FACTOR	FATAL ACCIDENTS TOTAL	ALL ACCIDE CAUSE	ALL ACCIDE FACTOR
AIRCRAFT, ENVIRONMENT, HUMAN PERFORMANCE (Continued)					
AIRCRAFT (Continued)					
POWERPLANT (Continued)					
EXHAUST SYSTEM (Continued)					
EXHAUST SYSTEM,STACK (Continued)					
UNDERTORQUED	0	0	0	1	0
PROPELLER SYSTEM/ACCESSORIES	(0)	(0)	(0)	(1)	(0)
PROPELLER SYSTEM/ACCESSORIES	(0)	(0)	(0)	(1)	(0)
ERRATIC	0	0	0	1	0
ACCESSORY DRIVE ASSY	(0)	(0)	(0)	(1)	(0)
ACCESSORY DRIVE ASSY,DRIVE GEAR	(0)	(0)	(0)	(1)	(0)
DISCONNECTED	0	0	0	1	0
FUEL SYSTEM	(0)	(0)	(0)	(13)	(1)
FUEL SYSTEM,LINE	(0)	(0)	(0)	(1)	(0)
LOOSE	0	0	0	1	0
FUEL SYSTEM,PUMP	(0)	(0)	(0)	(5)	(0)
FAILURE,PARTIAL	0	0	0	1	0
FAILURE,TOTAL	0	0	0	1	0
PRESSURE TOO LOW	0	0	0	1	0
WORN	0	0	0	2	0
FUEL SYSTEM,CAP	(0)	(0)	(0)	(2)	(0)
SEPARATION	0	0	0	1	0
WORN	0	0	0	1	0
FUEL SYSTEM,RAM AIR	(0)	(0)	(0)	(1)	(0)
FAILURE,PARTIAL	0	0	0	1	0
FUEL SYSTEM,FUEL CONTROL	(0)	(0)	(0)	(4)	(1)
ERRATIC	0	0	0	0	1
OPEN	0	0	0	1	0
PRESSURE EXCESSIVE	0	0	0	1	0
UNDETERMINED	0	0	0	2	0
LUBRICATING SYSTEM	(0)	(0)	(0)	(2)	(0)
LUBRICATING SYSTEM	(0)	(0)	(0)	(2)	(0)
NO PRESSURE	0	0	0	1	0
OVERLOAD	0	0	0	1	0
ENGINE INSTRUMENTS	(0)	(0)	(0)	(0)	(1)
ENGINE INSTRUMENTS,FUEL QUANTITY GAGE	(0)	(0)	(0)	(0)	(1)
INCORRECT	0	0	0	0	1
REDUCTION GEAR ASSY	(0)	(0)	(0)	(1)	(0)
REDUCTION GEAR ASSY,REDUCTION GEAR	(0)	(0)	(0)	(1)	(0)
FAILURE,TOTAL	0	0	0	1	0
MISCELLANEOUS	(0)	(0)	(0)	(1)	(1)
MISCELLANEOUS	(0)	(0)	(0)	(1)	(1)
FOREIGN OBJECT DAMAGE	0	0	0	0	1
UNDETERMINED	0	0	0	1	0
MISCELLANEOUS	(0)	(0)	(0)	(10)	(3)
FLUID	(0)	(0)	(0)	(10)	(1)
FLUID,FUEL	(0)	(0)	(0)	(3)	(1)
BLOCKED(PARTIAL)	0	0	0	1	0
INADEQUATE	0	0	0	0	1
LOSS,PARTIAL	0	0	0	1	0
STARVATION	0	0	0	6	0
FLUID,OIL	(0)	(0)	(0)	(2)	(0)
EXHAUSTION	0	0	0	1	0
TOO COLD	0	0	0	1	0
AIRCRAFT PERFORMANCE	(0)	(0)	(0)	(0)	(1)
AIRCRAFT PERFORMANCE,HYDROPLANING CONDITION	(0)	(0)	(0)	(0)	(1)
WATER	0	0	0	0	1
TOWING/ADVERTISING EQUIPMENT	(0)	(0)	(0)	(0)	(1)
PICK-UP EQUIPMENT	(0)	(0)	(0)	(0)	(1)
NOT REMOVED	0	0	0	0	1
AIRCRAFT ENVIRONMENT	(0)	(21)	(21)	(3)	(131)
AIRPORT	(0)	(0)	(0)	(2)	(18)

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	FATAL ACCIDENTS CAUSE	FATAL ACCIDENTS FACTOR	FATAL ACCIDENTS TOTAL	ALL ACCIDE CAUSE	ALL ACCIDE FACTOR
AIRCRAFT, ENVIRONMENT, HUMAN PERFORMANCE (Continued)					
AIRCRAFT ENVIRONMENT (Continued)					
AIRPORT (Continued)					
AIRPORT FACILITIES	(0)	(0)	(0)	(2)	(17)
AIRPORT FACILITIES,RUNWAY/LANDING AREA CONDITION	(0)	(0)	(0)	(0)	(15)
INADEQUATE	0	0	0	0	1
DOWNHILL	0	0	0	0	1
ICY	0	0	0	0	1
ROUGH/UNEVEN	0	0	0	0	1
SLUSH COVERED	0	0	0	0	1
SNOWBANK	0	0	0	0	3
SNOW COVERED	0	0	0	0	3
SOFT	0	0	0	0	1
WET	0	0	0	0	3
AIRPORT FACILITIES,TAXIWAY CONDITION	(0)	(0)	(0)	(1)	(0)
INADEQUATE	0	0	0	1	0
AIRPORT FACILITIES,TAXIWAY LIGHTING	(0)	(0)	(0)	(0)	(1)
INADEQUATE	0	0	0	0	1
AIRPORT FACILITIES,TAXIWAY MARKING	(0)	(0)	(0)	(1)	(1)
INADEQUATE	0	0	0	0	1
INACCURATE	0	0	0	1	0
AIRPORT FIRE/RESCUE SERVICE	(0)	(0)	(0)	(0)	(0)
AIRPORT FIRE/RESCUE SERVICE	(0)	(0)	(0)	(0)	(1)
AIRPORT FIRE/RESCUE SERVICE	(0)	(0)	(0)	(0)	(1)
ROUGH/UNEVEN	0	0	0	0	1
MISCELLANEOUS	(0)	(0)	(0)	(0)	(1)
CHARTS	(0)	(0)	(0)	(0)	(1)
CHARTS	(0)	(0)	(0)	(0)	(1)
CHARTS	(0)	(0)	(0)	(0)	(1)
INADEQUATE	0	0	0	0	1
TERRAIN/RUNWAY	(0)	(21)	(21)	(1)	(112)
TERRAIN/RUNWAY CONDITION	0	0	0	0	2
DIRT BANK	0	0	0	0	3
DITCH	0	0	0	0	6
DOWNHILL	0	0	0	0	4
GROUND	0	1	1	0	1
HIGH TERRAIN	0	4	4	0	8
HIGH VEGETATION	0	0	0	0	5
HIGH OBSTRUCTION(S)	0	0	0	0	5
HIDDEN OBSTRUCTION(S)	0	1	1	1	5
ICY	0	0	0	0	3
LOOSE GRAVEL/SANDY	0	0	0	0	1
MOUNTAINOUS/HILLY	0	6	6	0	15
OPEN FIELD	0	0	0	0	4
RISING	0	3	3	0	5
ROUGH/UNEVEN	0	0	0	0	7
SNOWBANK	0	0	0	0	5
SNOW COVERED	0	1	1	0	12
SOFT	0	0	0	0	3
UPHILL	0	1	1	0	2
WATER,ROUGH	0	4	4	0	6
WET	0	0	0	0	5
ENVIRONMENTAL CONDITIONS	(0)	(63)	(63)	(3)	(159)
WEATHER CONDITION	(0)	(49)	(49)	(2)	(116)
BELOW APPROACH MINIMUMS	0	2	2	0	2
CROSSWIND	0	1	1	0	6
CLOUDS	0	1	1	0	3
DOWNDRAFT	0	1	1	0	6
FOG	0	8	8	0	15
GUSTS	0	4	4	0	7
HIGH WIND	0	3	3	0	9
HIGH DENSITY ALTITUDE	0	1	1	0	12
ICING CONDITIONS	0	2	2	0	4
LOW CEILING	0	10	10	0	14
OBSCURATION	0	0	0	0	1

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	FATAL ACCIDENTS CAUSE	FATAL ACCIDENTS FACTOR	FATAL ACCIDENTS TOTAL	ALL ACCIDE CAUSE	ALL ACCIDE FACTOR
AIRCRAFT, ENVIRONMENT, HUMAN PERFORMANCE (Continued)					
ENVIRONMENTAL CONDITIONS (Continued)					
WEATHER CONDITION (Continued)					
RAIN	0	7	7	0	9
SNOW	0	2	2	0	5
TAILWIND	0	0	0	1	4
TEMPERATURE EXTREMES	0	0	0	0	1
TURBULENCE	0	2	2	0	4
TURBULENCE IN CLOUDS	0	1	1	0	1
THUNDERSTORM	0	0	0	0	1
WHITEOUT	0	1	1	0	2
WINDSHEAR	0	1	1	0	2
UNFAVORABLE WIND	0	2	2	1	8
LIGHT CONDITION	(0)	(11)	(11)	(0)	(22)
DUSK	0	1	1	0	1
NIGHT	0	3	3	0	4
DARK NIGHT	0	7	7	0	17
OBJECT	(0)	(3)	(3)	(1)	(21)
CROSSWIND	0	0	0	0	1
AIRCRAFT PARKED	0	0	0	0	1
APPROACH LIGHT/NAVAID	0	0	0	0	1
BIRD(S)	0	0	0	1	0
FENCE	0	1	1	0	5
RESIDENCE	0	0	0	0	1
TREE(S)	0	2	2	0	7
UTILITY POLE	0	0	0	0	1
VEHICLE	0	0	0	0	2
WIRE, TRANSMISSION	0	0	0	0	2
HUMAN PERFORMANCE	(46)	(10)	(56)	(173)	(28)
AIRCRAFT	(4)	(1)	(5)	(17)	(3)
LANDING GEAR	(1)	(0)	(1)	(7)	(0)
LANDING GEAR	(1)	(0)	(1)	(1)	(0)
NOT SELECTED	(1)	(0)	(1)	(1)	(0)
PILOT IN COMMAND	1	0	1	1	0
GEAR RETRACTION	(0)	(0)	(0)	(1)	(0)
DELAYED	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
GEAR EXTENSION	(0)	(0)	(0)	(1)	(0)
NOT PERFORMED	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
GEAR DOWN AND LOCKED	(0)	(0)	(0)	(4)	(0)
NOT ATTAINED	(0)	(0)	(0)	(3)	(0)
PILOT IN COMMAND	0	0	0	3	0
NOT IDENTIFIED	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
FLIGHT CONTROLS	(1)	(0)	(1)	(1)	(0)
FLIGHT CONTROLS	(1)	(0)	(1)	(1)	(0)
IMPROPER USE OF	(1)	(0)	(1)	(1)	(0)
PILOT IN COMMAND	1	0	1	1	0
FUEL SYSTEM	(0)	(0)	(0)	(3)	(0)
FUEL TANK SELECTOR POSITION	(0)	(0)	(0)	(2)	(0)
NOT CORRECTED	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
NOT SELECTED	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
FUEL SUPPLY	(0)	(0)	(0)	(1)	(0)
IMPROPER USE OF	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
POWERPLANT CONTROLS	(0)	(0)	(0)	(3)	(1)
THROTTLE/POWER CONTROL	(0)	(0)	(0)	(2)	(0)
IMPROPER USE OF	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0

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	FATAL ACCIDENTS CAUSE FACTOR		TOTAL	ALL ACCIDEI CAUSE FACTOR	
AIRCRAFT, ENVIRONMENT, HUMAN PERFORMANCE (Continued)					
HUMAN PERFORMANCE (Continued)					
AIRCRAFT (Continued)					
POWERPLANT CONTROLS (Continued)					
THROTTLE/POWER CONTROL (Continued)					
INADEQUATE	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
PROPELLER FEATHERING	(0)	(0)	(0)	(0)	(1)
INTENTIONAL	(0)	(0)	(0)	(0)	(1)
PILOT IN COMMAND	0	0	0	0	1
ADEQUATE ROTOR RPM	(0)	(0)	(0)	(1)	(0)
NOT MAINTAINED	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
ELECTRICAL SYSTEM	(0)	(0)	(0)	(1)	(0)
ELECTRICAL SYSTEM	(0)	(0)	(0)	(1)	(0)
IMPROPER USE OF	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
EMERGENCY EQUIPMENT	(0)	(1)	(1)	(0)	(1)
EMERGENCY EQUIPMENT	(0)	(1)	(1)	(0)	(1)
NOT USED	(0)	(1)	(1)	(0)	(1)
PASSENGER	0	1	1	0	1
FLIGHT AND NAVIGATION INSTRUMENTS	(1)	(0)	(1)	(1)	(0)
FLIGHT AND NAVIGATION INSTRUMENTS	(1)	(0)	(1)	(1)	(0)
IMPROPER USE OF	(1)	(0)	(1)	(1)	(0)
PILOT IN COMMAND	1	0	1	1	0
ROTORCRAFT FLIGHT CONTROLS	(1)	(0)	(1)	(1)	(0)
ROTORCRAFT FLIGHT CONTROLS	(1)	(0)	(1)	(1)	(0)
IMPROPER USE OF	(1)	(0)	(1)	(1)	(0)
PILOT IN COMMAND	1	0	1	1	0
MISCELLANEOUS EQUIPMENT	(0)	(0)	(0)	(0)	(1)
SEAT BELT	(0)	(0)	(0)	(0)	(1)
NOT USED	(0)	(0)	(0)	(0)	(1)
PASSENGER	0	0	0	0	1
OPERATIONS	(42)	(9)	(51)	(156)	(25)
PLANNING-DECISION	(26)	(4)	(30)	(78)	(10)
PREFLIGHT PLANNING/PREPARATION	(0)	(0)	(0)	(1)	(0)
INADEQUATE	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
AIRCRAFT PREFLIGHT	(0)	(0)	(0)	(2)	(0)
INADEQUATE	(0)	(0)	(0)	(2)	(0)
PILOT IN COMMAND	0	0	0	2	0
AIRCRAFT WEIGHT AND BALANCE	(0)	(1)	(1)	(0)	(2)
EXCEEDED	(0)	(1)	(1)	(0)	(2)
PILOT IN COMMAND	0	1	1	0	2
OPERATION WITH KNOWN DEFICIENCIES IN EQUIPMENT	(2)	(1)	(3)	(2)	(2)
ATTEMPTED	(1)	(1)	(2)	(1)	(1)
PILOT IN COMMAND	1	1	2	1	1
INITIATED	(1)	(0)	(1)	(1)	(0)
PILOT IN COMMAND	1	0	1	1	0
PERFORMED	(0)	(0)	(0)	(0)	(1)
PILOT IN COMMAND	0	0	0	0	1
TIE DOWN/SECURITY OF CARGO	(0)	(0)	(0)	(1)	(0)
NOT PERFORMED	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
PROPER ASSISTANCE	(1)	(0)	(1)	(2)	(0)
NOT ATTAINED	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
NOT OBTAINED	(1)	(0)	(1)	(1)	(0)
PASSENGER	1	0	1	1	0
IN-FLIGHT PLANNING/DECISION	(2)	(1)	(3)	(13)	(1)

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	FATAL ACCIDENTS CAUSE FACTOR		TOTAL	ALL ACCIDE CAUSE FACTOR	
AIRCRAFT, ENVIRONMENT, HUMAN PERFORMANCE (Continued)					
HUMAN PERFORMANCE (Continued)					
OPERATIONS (Continued)					
PLANNING-DECISION (Continued)					
IN-FLIGHT PLANNING/DECISION (Continued)					
IMPROPER	(2)	(1)	(3)	(12)	(1)
PILOT IN COMMAND	2	1	3	12	1
POOR	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
NOTAMS	(0)	(0)	(0)	(0)	(1)
NOT ISSUED	(0)	(0)	(0)	(0)	(1)
AIRPORT PERSONNEL	0	0	0	0	1
BECAME LOST/DISORIENTED	(0)	(0)	(0)	(1)	(0)
INADVERTENT	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
VFR FLIGHT INTO IMC	(4)	(1)	(5)	(6)	(2)
CONTINUED	(4)	(0)	(4)	(4)	(0)
PILOT IN COMMAND	4	0	4	4	0
INADVERTENT	(0)	(0)	(0)	(2)	(1)
PILOT IN COMMAND	0	0	0	2	1
PERFORMED	(0)	(1)	(1)	(0)	(1)
PILOT IN COMMAND	0	1	1	0	1
VISUAL LOOKOUT	(4)	(0)	(4)	(14)	(0)
INADEQUATE	(4)	(0)	(4)	(13)	(0)
PILOT IN COMMAND	2	0	2	8	0
PILOT OF OTHER AIRCRAFT	2	0	2	4	0
DRIVER OF VEHICLE	0	0	0	1	0
NOT POSSIBLE	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
WEATHER EVALUATION	(0)	(0)	(0)	(0)	(1)
INACCURATE	(0)	(0)	(0)	(0)	(1)
PILOT IN COMMAND	0	0	0	0	1
FLIGHT INTO KNOWN ADVERSE WEATHER	(3)	(0)	(3)	(4)	(0)
CONTINUED	(2)	(0)	(2)	(2)	(0)
PILOT IN COMMAND	2	0	2	2	0
INITIATED	(1)	(0)	(1)	(1)	(0)
PILOT IN COMMAND	1	0	1	1	0
PERFORMED	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
IFR PROCEDURE	(3)	(0)	(3)	(3)	(0)
IMPROPER	(3)	(0)	(3)	(3)	(0)
PILOT IN COMMAND	3	0	3	3	0
COMPENSATION FOR WIND CONDITIONS	(1)	(0)	(1)	(6)	(0)
IMPROPER	(1)	(0)	(1)	(3)	(0)
PILOT IN COMMAND	1	0	1	3	0
INADEQUATE	(0)	(0)	(0)	(3)	(0)
PILOT IN COMMAND	0	0	0	3	0
WRONG RUNWAY	(0)	(0)	(0)	(0)	(1)
SELECTED	(0)	(0)	(0)	(0)	(1)
PILOT IN COMMAND	0	0	0	0	1
UNSUITABLE TERRAIN	(1)	(0)	(1)	(12)	(0)
SELECTED	(1)	(0)	(1)	(12)	(0)
PILOT IN COMMAND	1	0	1	12	0
JUDGEMENT	(2)	(0)	(2)	(5)	(0)
IMPROPER	(1)	(0)	(1)	(2)	(0)
PILOT IN COMMAND	1	0	1	2	0
POOR	(1)	(0)	(1)	(3)	(0)
PILOT IN COMMAND	1	0	1	2	0
DRIVER OF VEHICLE	0	0	0	1	0

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	FATAL ACCIDENTS CAUSE	FATAL ACCIDENTS FACTOR	FATAL ACCIDENTS TOTAL	ALL ACCIDE CAUSE	ALL ACCIDE FACTOR
AIRCRAFT, ENVIRONMENT, HUMAN PERFORMANCE (Continued)					
HUMAN PERFORMANCE (Continued)					
OPERATIONS (Continued)					
PLANNING-DECISION (Continued)					
PROCEDURES/DIRECTIVES	(1)	(0)	(1)	(4)	(0)
DISREGARDED	(1)	(0)	(1)	(1)	(0)
PILOT IN COMMAND	1	0	1	1	0
IMPROPER	(0)	(0)	(0)	(1)	(0)
DRIVER OF VEHICLE	0	0	0	1	0
NOT FOLLOWED	(0)	(0)	(0)	(2)	(0)
PILOT IN COMMAND	0	0	0	2	0
PLANNED APPROACH	(2)	(0)	(2)	(2)	(0)
IMPROPER	(1)	(0)	(1)	(1)	(0)
PILOT IN COMMAND	1	0	1	1	0
MISJUDGED	(1)	(0)	(1)	(1)	(0)
PILOT IN COMMAND	1	0	1	1	0
MAINTENANCE	(0)	(1)	(1)	(5)	(2)
MAINTENANCE	(0)	(1)	(1)	(1)	(1)
IMPROPER	(0)	(0)	(0)	(1)	(0)
COMPANY MAINTENANCE PSNL	0	0	0	1	0
NOT PERFORMED	(0)	(1)	(1)	(0)	(1)
COMPANY MAINTENANCE PSNL	0	1	1	0	1
MAINTENANCE,INSPECTION OF AIRCRAFT	(0)	(0)	(0)	(0)	(1)
INADEQUATE	(0)	(0)	(0)	(0)	(1)
COMPANY MAINTENANCE PSNL	0	0	0	0	1
MAINTENANCE,ANNUAL INSPECTION	(0)	(0)	(0)	(1)	(0)
INADEQUATE	(0)	(0)	(0)	(1)	(0)
OTHER MAINTENANCE PSNL	0	0	0	1	0
MAINTENANCE,ADJUSTMENT	(0)	(0)	(0)	(1)	(0)
IMPROPER	(0)	(0)	(0)	(1)	(0)
COMPANY MAINTENANCE PSNL	0	0	0	1	0
MAINTENANCE,INSTALLATION	(0)	(0)	(0)	(1)	(0)
IMPROPER	(0)	(0)	(0)	(1)	(0)
NO PERSON SPECIFIED	0	0	0	1	0
MAINTENANCE,SERVICE BULLETINS	(0)	(0)	(0)	(1)	(0)
NOT RECEIVED	(0)	(0)	(0)	(1)	(0)
COMPANY MAINTENANCE PSNL	0	0	0	1	0
AIRPORT	(0)	(0)	(0)	(1)	(1)
AIRPORT SNOW REMOVAL	(0)	(0)	(0)	(1)	(1)
INADEQUATE	(0)	(0)	(0)	(1)	(0)
AIRPORT PERSONNEL	0	0	0	1	0
NOT POSSIBLE	(0)	(0)	(0)	(0)	(1)
AIRPORT PERSONNEL	0	0	0	0	1
AIRCRAFT HANDLING	(14)	(2)	(16)	(69)	(10)
AIRCRAFT HANDLING	(2)	(0)	(2)	(3)	(0)
INADEQUATE	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
NOT MAINTAINED	(1)	(0)	(1)	(1)	(0)
PILOT IN COMMAND	1	0	1	1	0
UNCONTROLLED	(1)	(0)	(1)	(1)	(0)
PILOT IN COMMAND	1	0	1	1	0
ABORTED LANDING	(0)	(0)	(0)	(1)	(0)
NOT PERFORMED	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
ABORTED TAKEOFF	(0)	(0)	(0)	(2)	(3)
NOT PERFORMED	(0)	(0)	(0)	(2)	(1)
PILOT IN COMMAND	0	0	0	2	1
PERFORMED	(0)	(0)	(0)	(0)	(2)

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	FATAL ACCIDENTS CAUSE FACTOR		TOTAL	ALL ACCIDE CAUSE FACTOR	
AIRCRAFT, ENVIRONMENT, HUMAN PERFORMANCE (Continued)					
HUMAN PERFORMANCE (Continued)					
OPERATIONS (Continued)					
AIRCRAFT HANDLING (Continued)					
ABORTED TAKEOFF (Continued)					
PILOT IN COMMAND	0	0	0	0	2
AIRSPEED	(0)	(0)	(0)	(11)	(0)
INADEQUATE	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
MISJUDGED	(0)	(0)	(0)	(5)	(0)
PILOT IN COMMAND	0	0	0	5	0
NOT ATTAINED	(0)	(0)	(0)	(2)	(0)
PILOT IN COMMAND	0	0	0	2	0
NOT MAINTAINED	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
NOT OBTAINED	(0)	(0)	(0)	(2)	(0)
PILOT IN COMMAND	0	0	0	2	0
AIRSPEED(VLOF)	(1)	(0)	(1)	(1)	(0)
NOT ATTAINED	(1)	(0)	(1)	(1)	(0)
PILOT IN COMMAND	1	0	1	1	0
AIRSPEED(VMC)	(1)	(0)	(1)	(1)	(0)
NOT MAINTAINED	(1)	(0)	(1)	(1)	(0)
PILOT IN COMMAND	1	0	1	1	0
ALTITUDE	(0)	(0)	(0)	(7)	(0)
INATTENTIVE	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
INADEQUATE	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
MISJUDGED	(0)	(0)	(0)	(4)	(0)
PILOT IN COMMAND	0	0	0	4	0
NOT MAINTAINED	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
PROPER ALTITUDE	(4)	(0)	(4)	(4)	(0)
NOT MAINTAINED	(4)	(0)	(4)	(4)	(0)
PILOT IN COMMAND	4	0	4	4	0
AUTOROTATION	(0)	(1)	(1)	(1)	(2)
MISJUDGED	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
PERFORMED	(0)	(1)	(1)	(0)	(2)
PILOT IN COMMAND	0	1	1	0	2
BUZZING	(0)	(0)	(0)	(1)	(0)
CONTINUED	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
DECISION HEIGHT	(2)	(0)	(2)	(2)	(0)
BELOW	(1)	(0)	(1)	(1)	(0)
PILOT IN COMMAND	1	0	1	1	0
NOT MAINTAINED	(1)	(0)	(1)	(1)	(0)
PILOT IN COMMAND	1	0	1	1	0
DISTANCE	(0)	(0)	(0)	(6)	(0)
MISJUDGED	(0)	(0)	(0)	(6)	(0)
PILOT IN COMMAND	0	0	0	6	0
CLEARANCE	(1)	(0)	(1)	(4)	(0)
INADEQUATE	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
MISJUDGED	(1)	(0)	(1)	(2)	(0)
PILOT IN COMMAND	1	0	1	2	0
NOT MAINTAINED	(0)	(0)	(0)	(1)	(0)

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	FATAL ACCIDENTS CAUSE	FATAL ACCIDENTS FACTOR	FATAL ACCIDENTS TOTAL	ALL ACCIDEN CAUSE	ALL ACCIDEN FACTOR
AIRCRAFT, ENVIRONMENT, HUMAN PERFORMANCE (Continued)					
HUMAN PERFORMANCE (Continued)					
OPERATIONS (Continued)					
AIRCRAFT HANDLING (Continued)					
CLEARANCE (Continued)					
PILOT IN COMMAND	0	0	0	1	0
MINIMUM DESCENT ALTITUDE	(1)	(0)	(1)	(1)	(0)
NOT MAINTAINED	(1)	(0)	(1)	(1)	(0)
PILOT IN COMMAND	1	0	1	1	0
PROPER ALIGNMENT	(0)	(0)	(0)	(1)	(0)
NOT MAINTAINED	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
PROPER TOUCHDOWN POINT	(0)	(0)	(0)	(1)	(0)
NOT ATTAINED	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
LIFT-OFF	(1)	(0)	(1)	(3)	(0)
INADVERTENT	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
PREMATURE	(1)	(0)	(1)	(2)	(0)
PILOT IN COMMAND	1	0	1	2	0
GO-AROUND	(0)	(0)	(0)	(3)	(0)
DELAYED	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
NOT PERFORMED	(0)	(0)	(0)	(2)	(0)
PILOT IN COMMAND	0	0	0	2	0
GROUND LOOP/SWERVE	(0)	(0)	(0)	(1)	(2)
INADVERTENT	(0)	(0)	(0)	(1)	(1)
PILOT IN COMMAND	0	0	0	1	1
UNCONTROLLED	(0)	(0)	(0)	(0)	(1)
PILOT IN COMMAND	0	0	0	0	1
DIRECTIONAL CONTROL	(0)	(0)	(0)	(5)	(1)
NOT MAINTAINED	(0)	(0)	(0)	(5)	(0)
PILOT IN COMMAND	0	0	0	5	0
NOT POSSIBLE	(0)	(0)	(0)	(0)	(1)
PILOT IN COMMAND	0	0	0	0	1
LOAD JETTISON	(0)	(0)	(0)	(1)	(0)
NOT PERFORMED	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
MISSED APPROACH	(0)	(1)	(1)	(1)	(1)
DELAYED	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
PERFORMED	(0)	(1)	(1)	(0)	(1)
PILOT IN COMMAND	0	1	1	0	1
EMERGENCY PROCEDURE	(0)	(0)	(0)	(4)	(0)
IMPROPER	(0)	(0)	(0)	(2)	(0)
PILOT IN COMMAND	0	0	0	2	0
NOT FOLLOWED	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
PERFORMED	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
PRECAUTIONARY LANDING	(0)	(0)	(0)	(0)	(1)
PERFORMED	(0)	(0)	(0)	(0)	(1)
PILOT IN COMMAND	0	0	0	0	1
STARTING PROCEDURE	(0)	(0)	(0)	(1)	(0)
NOT FOLLOWED	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
STALL	(1)	(0)	(1)	(1)	(0)
INADVERTENT	(1)	(0)	(1)	(1)	(0)

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	FATAL ACCIDENTS CAUSE	FATAL ACCIDENTS FACTOR	FATAL ACCIDENTS TOTAL	ALL ACCIDEN CAUSE	ALL ACCIDEN FACTOR
AIRCRAFT, ENVIRONMENT, HUMAN PERFORMANCE (Continued)					
HUMAN PERFORMANCE (Continued)					
OPERATIONS (Continued)					
AIRCRAFT HANDLING (Continued)					
STALL (Continued)					
PILOT IN COMMAND	1	0	1	1	0
STALL/MUSH	(0)	(0)	(0)	(2)	(0)
INADVERTENT	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
NOT CORRECTED	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
COMMUNICATIONS/INFORMATION/ATC	(2)	(2)	(4)	(3)	(2)
INSTRUCTIONS,WRITTEN/VERBAL	(0)	(1)	(1)	(0)	(1)
NOT FOLLOWED	(0)	(1)	(1)	(0)	(1)
PILOT IN COMMAND	0	1	1	0	1
MONITORING	(1)	(0)	(1)	(1)	(0)
INADEQUATE	(1)	(0)	(1)	(1)	(0)
GROUND PERSONNEL	1	0	1	1	0
PASSENGER BRIEFING	(0)	(1)	(1)	(0)	(1)
NOT PERFORMED	(0)	(1)	(1)	(0)	(1)
PILOT IN COMMAND	0	1	1	0	1
UNSAFE/HAZARDOUS CONDITION	(1)	(0)	(1)	(1)	(0)
PERFORMED	(1)	(0)	(1)	(1)	(0)
COMPANY/OPERATOR MGMT	1	0	1	1	0
UNSAFE/HAZARDOUS CONDITION WARNING	(0)	(0)	(0)	(1)	(0)
ISSUED	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
UNDETERMINED	6	0	6	8	0
DIRECT UNDERLYING CAUSE FACTORS:	(1)	(9)	(10)	(7)	(11)
IMPROPER USE OF PROCEDURE	(0)	(1)	(1)	(3)	(1)
DIVERTED ATTENTION	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
VISUAL/AURAL DETECTION	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
INADEQUATE TRAINING	(0)	(1)	(1)	(0)	(1)
PILOT IN COMMAND	0	1	1	0	1
INADEQUATE TRAINING(EMERGENCY PROCEDURE(S))	(0)	(0)	(0)	(1)	(0)
PILOT IN COMMAND	0	0	0	1	0
IMPROPER USE OF EQUIPMENT/AIRCRAFT	(1)	(2)	(3)	(3)	(2)
DIVERTED ATTENTION	(0)	(0)	(0)	(2)	(0)
PILOT IN COMMAND	0	0	0	2	0
COMPANY-INDUCED PRESSURE	(0)	(1)	(1)	(0)	(1)
COMPANY/OPERATOR MGMT	0	1	1	0	1
EXCESSIVE WORKLOAD (TASK OVERLOAD)	(0)	(1)	(1)	(0)	(1)
PILOT IN COMMAND	0	1	1	0	1
INCAPACITATION(OTHER CARDIOVASCULAR)	(1)	(0)	(1)	(1)	(0)
PILOT IN COMMAND	1	0	1	1	0
IMPROPER DECISION	(0)	(6)	(6)	(0)	(7)
OVER CONFIDENCE IN PERSONAL ABILITY	(0)	(2)	(2)	(0)	(3)
PILOT IN COMMAND	0	2	2	0	3
OVER CONFIDENCE IN AIRCRAFT'S ABILITY	(0)	(1)	(1)	(0)	(1)
PILOT IN COMMAND	0	1	1	0	1
SELF-INDUCED PRESSURE	(0)	(1)	(1)	(0)	(1)
PILOT IN COMMAND	0	1	1	0	1
COMPANY-INDUCED PRESSURE	(0)	(1)	(1)	(0)	(1)
COMPANY/OPERATOR MGMT	0	1	1	0	1
LACK OF TOTAL EXPERIENCE IN TYPE OPERATION	(0)	(1)	(1)	(0)	(1)
PILOT IN COMMAND	0	1	1	0	1

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	FATAL ACCIDENTS CAUSE	FACTOR	TOTAL	ALL ACCIDEN CAUSE	FACTOR
DIRECT UNDERLYING CAUSE FACTORS: (Continued)					
AIRCRAFT/EQUIPMENT INADEQUATE	(0)	(0)	(0)	(1)	(1)
AIRCRAFT/EQUIPMENT INADEQUATE	(0)	(0)	(0)	(1)	(0)
MANUFACTURER	0	0	0	1	0
AIRCRAFT COMPONENT	(0)	(0)	(0)	(0)	(1)
MANUFACTURER	0	0	0	0	1

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