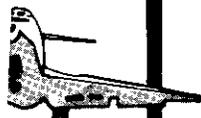


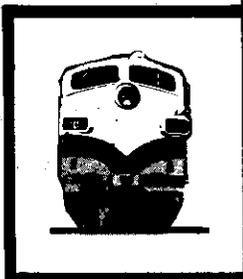
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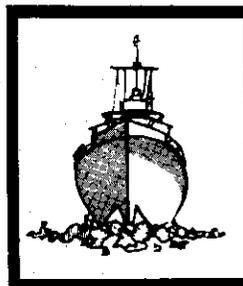


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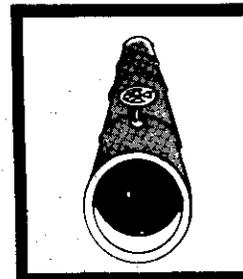
WASHINGTON, D.C. 20594

ANNUAL REVIEW OF AIRCRAFT ACCIDENT DATA



**U.S. GENERAL AVIATION
CALENDAR YEAR 1976**

REPORT NUMBER: NTSB-ARG-78-1



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16. Abstract					
<p>This publication presents the record of aircraft accidents which occurred in U.S. general aviation operations during the calendar year 1976. It includes an analysis of accident data relating to an overview, types of accidents, accident causal factors, kinds of flying, and conclusions; a statistical compilation of accident information presented in the form of accident and rate tables, analytic tables, injury tables and cause/factor tables. These statistical data are divided into sections pertaining to all operations, small fixed-wing aircraft, large fixed-wing aircraft, rotorcraft, gliders, and collisions between aircraft.</p> <p>There were 4,193 total and 695 fatal general aviation accidents that occurred during 1976. Included in the total number of accidents are 48 collisions between aircraft. By coding each aircraft involved in collisions, an additional 48 records were produced, which brought the total number of accident records to 4,241. This figure reflects the actual number of pilots and aircraft involved in the accidents.</p>					
17. Key Words Aircraft Accidents, U.S. General Aviation, accident rates, aviation safety, crash injuries, collisions between aircraft, small fixed-wing aircraft, large fixed-wing aircraft, rotorcraft, helicopters, gyrocopters, gliders, cause/factor calculations.				18. Distribution Statement This document is available to the public through the National Technical Information Service, Springfield, Virginia, 22151	
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Foreword

The Statistical Review of U.S. General Aviation Accidents, published annually by the National Transportation Safety Board, contains statistics compiled from reports of 4,193 general aviation accidents that occurred during calendar year 1976. General aviation comprises one category of U.S. Civil Aviation. The accident records of the only other category, air carriers, are contained in Safety Board publication, "Annual Review of Aircraft Accident Data, U.S. Air Carriers".

Forty-eight collisions are included in the total number of accidents, which brings the total number of records to 4,241. This figure reflects the actual number of pilots and aircraft involved in the 4,193 accidents. All collisions between aircraft included in this publication involve general aviation aircraft in collision with other general aviation aircraft.

One accident involving suicide and three accidents involving sabotage are included in all computations, except rates.

The Safety Board has published numerous special studies, safety bulletins, and accident reports on many of the hazards to aviation covered in this report. All of these publications are available to the public on request.

Also, NTSB Safety Information Bulletins are released concurrently with each issue of the Board's publication, "Aircraft Accident Reports, Brief Format, U.S. Civil Aviation." Each issue of this publication contains a computer-printed synopsis of the pertinent facts and probable cause(s) of about 900 aviation accidents. The 1976 accidents are contained in five issues. Each Safety Information Bulletin highlights a hazardous condition and includes the Safety Board's suggested prevention action.

TABLE OF CONTENTS

	Page
Foreword	ii
Analysis of Statistical Information	1
Statistical Information	
All Operations	17
Small Fixed-Wing	105
Large Fixed-Wing	123
Rotorcraft	135
Gliders	149
Collisions	161
Yearly Accident Record	185
Explanatory Notes	187

LIST OF TABLES

	Page
All Operations	
Statistical recapitulation of accidents	17
Accidents, rates and active aircraft	18
Accidents, hours flown, rates, injury index, aircraft damage by kind of flying	19
Type of accident by injury index	20
Type of accident by aircraft damage	22
First by second accident type	25
Phase of operation by injury index	27
Phase of operation by aircraft damage	29
Cause/factor - broad	31
Cause/factor - detailed	32
Cause/factor - instructional (broad)	42
Cause/factor - pleasure (broad)	43
Cause/factor - business (broad)	44
Cause/factor - corporate/executive (broad)	45
Cause/factor - aerial application (broad)	46
Cause/factor - air taxi (broad)	47
Kind of flying by injury index	48
Kind of flying by aircraft damage	50
 Injury Tables (By kind of flying)	
All operations - total of kinds of flying	52
Instructional - dual	53
Instructional - solo	54
Instructional - check	55
Instructional - training	56
Noncommercial - pleasure	57
Noncommercial - practice	58
Noncommercial - business	59
Noncommercial - corporate/executive	60
Noncommercial - aerial survey	61
Noncommercial - other	62
Commercial - aerial application - crop control	63
Commercial - associated crop control	64
Commercial - fire control	65
Commercial - associated fire control	66
Commercial - aerial mapping/photography	67
Commercial - aerial advertizing	68
Commercial - power/pipeline patrol	69
Commercial - fish spotting	70
Commercial - air taxi passenger	71

Injury Tables (By kind of flying) (continued)

	Page
Commercial - air taxi cargo	72
Commercial - construction work (helicopter)	73
Commercial - other	74
Miscellaneous - experimentation	75
Miscellaneous - test	76
Miscellaneous - demonstration	77
Miscellaneous - ferry	78
Miscellaneous - search and rescue	79
Miscellaneous - air show/racing	80
Miscellaneous - parachute jump (sport)	81
Miscellaneous - parachute jump (show)	82
Miscellaneous - towing gliders	83
Miscellaneous - seeding clouds	84
Miscellaneous - hunting	85
Miscellaneous - police patrol	86
Miscellaneous - highway traffic survey	87
Miscellaneous - other	88

Selected Information

Pilot total time	89
Pilot time in type	89
Pilot age by injury index	90
Pilot certificate by injury index	92
Conditions of light by injury index	92
Type of weather conditions by injury index	93
Type of flight plan by injury index	93
Month of occurrence by injury index	94
Month of occurrence by weather conditions	94
Month of occurrence by type of accident	95
State of occurrence by injury index	97
State of occurrence by aircraft damage	99
Type of aircraft by injury index	101
Type of aircraft by aircraft damage	101
Type of power by injury index	102
Type of power by aircraft damage	102
Airport proximity by injury index	103
Fire after impact by injury index	103

	Page
Small Fixed-Wing Aircraft	
Type of Accident and Phase of Operation	
Type of accident by aircraft damage	105
Phase of operation by injury index	107
Cause/Factor Tables	
Cause/factor table - (broad)	109
Cause/factor table - (detailed)	110
Kind of Flying	
Kind of flying by injury index	119
Injury Tables	
Injuries, accidents	121
Large Fixed-Wing Aircraft	
Type of Accident Phase of Operation	
Type of accident by aircraft damage	123
Phase of operation by injury index	125
Cause/Factor Tables	
Cause/factor table - (broad)	127
Cause/factor table - (detailed)	128
Kind of Flying	
Kind of flying by injury index	131
Injury Tables	
Injuries, accidents	133
Rotorcraft	
Type of Accident and Phase of Operation	
Type of accident by aircraft damage	135
Phase of operation by injury index	137

Rotorcraft (continued)

	Page
Cause/Factor Tables	
Cause/factor table - (broad)	139
Cause/factor table - (detailed)	140
Kind of Flying	
Kind of flying by injury index	145
Injuries, Accidents	
Injuries, accidents	147
Gliders	
Type of Accident and Phase of Operation	
Type of accident by aircraft damage	149
Phase of operation by injury index	151
Cause/Factor Tables	
Cause/factor table - (broad)	153
Cause/factor table - (detailed)	154
Kind of Flying	
Kind of flying by injury index	157
Injuries, Accidents	
Injuries, accidents	159
Collisions	
Type of Collisions and Phase of Operation	
Type of collision by injury index	161
Phase of operation by injury index	162
Cause/Factor Tables	
Cause/factor table - (broad)	164
Cause/factor table - (detailed)	165

Collisions (continued)

	Page
Kind of Flying	
Kind of flying by injury index	167
Kind of flying by aircraft damage	169
Selected Collision Information	
Segments of aviation by injury index	171
Pilot age by injury index	172
Pilot certificate by injury index	174
Month of occurrence by injury index	174
State of occurrence by injury index	175
State of occurrence by aircraft damage	176
Type of aircraft by aircraft damage	177
Type of power by injury index	177
Type of flight plan by injury index	178
Type of weather conditions by injury index	178
Airport proximity by injury index	179
Controlled/uncontrolled airport by injury index	179
Conditions of light by injury index	180
Fire after impact by injury index	180
Injuries, Accidents	
Injuries, accidents - all collisions	181
Injuries, accidents - both airborne	182
Injuries, accidents - one airborne	183
Injuries, accidents - both on ground	184
Yearly Accident Record - 1966 - 1976	185
Explanatory Notes	187

ANALYSIS OF STATISTICAL INFORMATION

Analysis of Statistical Information Overview

There were 4,193 accidents in U.S. general aviation operations during 1976. This number of accidents was in line with the downward trend which began in 1968. The accident total in 1976 is the lowest in the last 19 years. Although the number of fatal accidents in 1976 is not a record low in numbers, it is a record low in rates. The rates are the lowest, according to NTSB records, since 1938, the earliest year in which this information was documented.

The 4,193 accidents in U.S. general aviation in 1976 involved 4,241 aircraft. Twenty-six percent of these aircraft were destroyed and 73 percent were damaged substantially. Six hundred and ninety five of the 4,193 accidents resulted in fatal injuries; 3,498 were nonfatal. There were serious injuries in 422 accidents. Minor injuries were incurred in 565 accidents; there were no injuries in 2,511 of these 4,193 accidents.

There were 8,261 persons aboard the 4,241 aircraft involved in general aviation accidents in 1976; 1,320 persons were fatally injured (15.8 percent of those aboard the aircraft involved). Seven hundred and seventy-one persons (9.3 percent) were seriously injured, 1,045 (12.6 percent) were injured slightly, 5,220 (63.1 percent) were not injured, and the injuries to 1 person were unknown. An average of 1.95 persons were aboard each general aviation aircraft involved in an accident in 1976.

Aircraft in U.S. general aviation were flown over 36 million aircraft hours in 1976. This was an increase over 1975 of almost 2 million hours flown and almost double the hours flown in 1966.

Table 1. -- Overview
U.S. General Aviation
1975 Through 1976

	<u>1975</u>	<u>1976</u>	<u>Percentage Change</u>
Aircraft-hours flown <u>1/</u>	34,164,993	36,127,631	+ 5.74
Eligible aircraft <u>1/</u>	168,475	178,304	+ 5.83
Total accidents	4,237	4,193	- 1.04
Aircraft involved <u>2/</u>	4,288	4,241	- 1.10
Aircraft damage <u>2/</u>			
Destroyed	1,094	1,095	+ 0.09
Substantial	3,159	3,112	- 1.49
Minor	20	14	- 30.00
None	15	20	+ 33.33
Unknown/Not Reported	0	0	None
Injury index			
Fatal	675	695	+ 2.96
Serious	419	422	+ 0.72
Minor	648	565	- 12.81
None	2,495	2,511	+ 0.64
Unknown/Not Reported	0	0	None
Injuries <u>3/</u>			
Fatal	1,345	1,320	- 1.86
Serious	769	771	+ 0.26
Minor	1,160	1,045	- 9.91
None	5,269	5,220	- 0.93
Unknown/not reported	2	1	- 50.00
Total aboard	8,517	8,261	- 3.00
Fire after impact <u>2/</u>			
Fatal accidents	224	196	- 12.50
Nonfatal accidents	135	146	+ 8.15

1/ Source: Federal Aviation Administration

2/ Includes all aircraft involved in collisions.

3/ Includes persons aboard aircraft involved in collisions with general aviation aircraft along with persons injured on the ground.

ACCIDENTS, FATALITIES U.S. GENERAL AVIATION 1967-1976

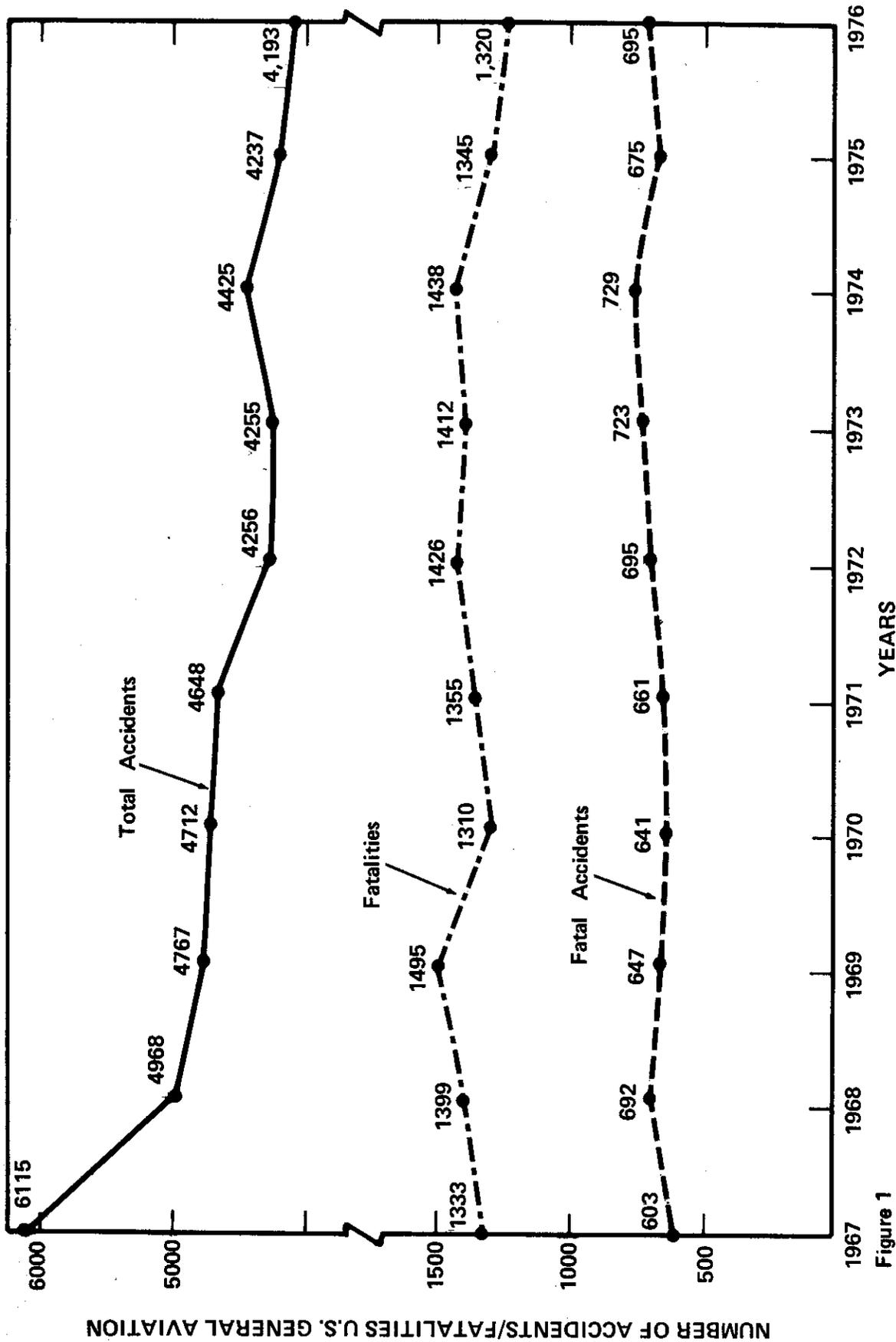


Figure 1

ACCIDENT RATES PER 100,000 AIRCRAFT - HOURS FLOWN U.S. GENERAL AVIATION
1967 - 1976

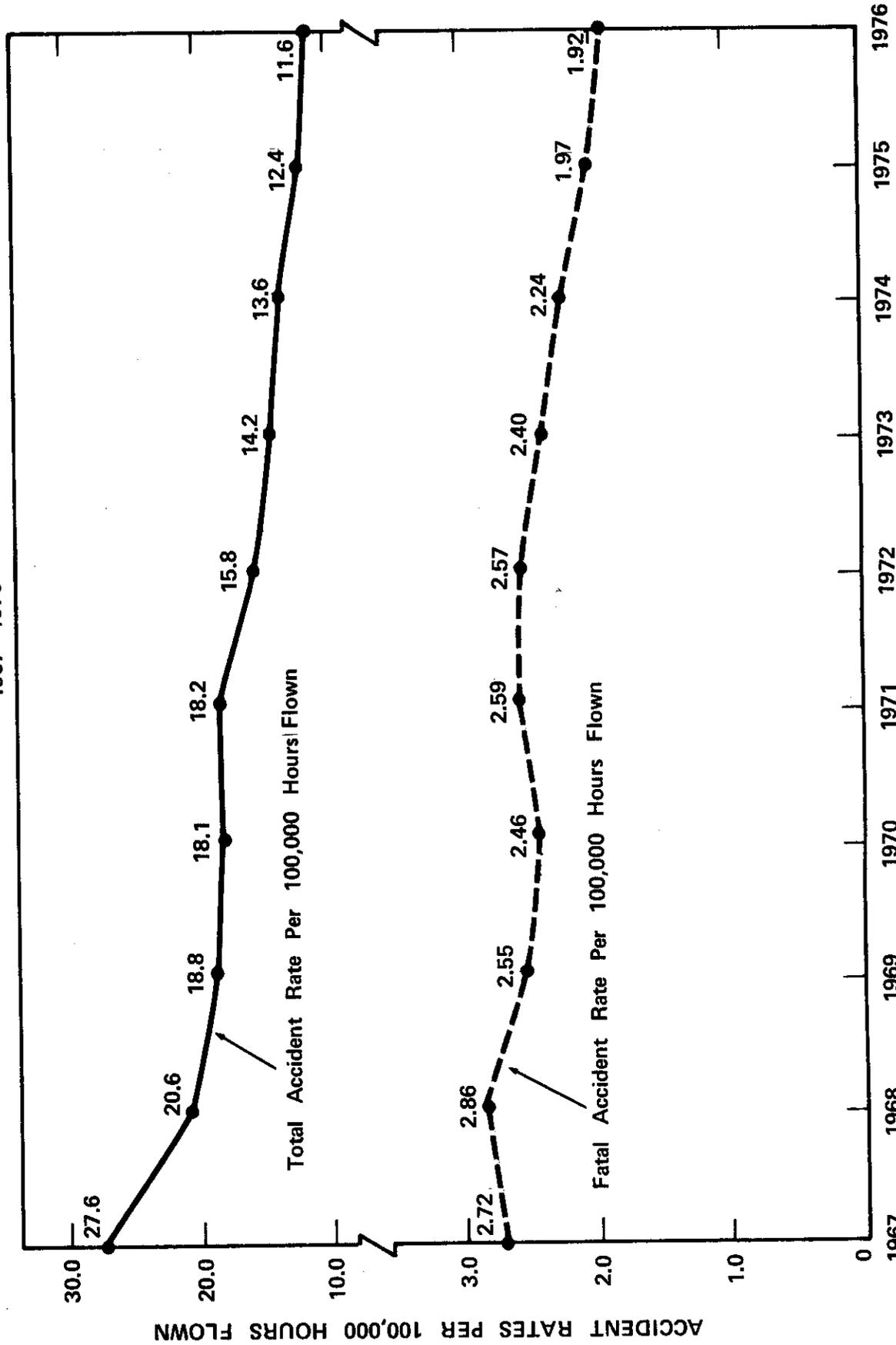


Figure 2

Types of Accidents

Engine failure or malfunction is cited as the first accident type in almost 25 percent of general aviation accidents. Because of the nature of this accident classification, it is usually followed by a second type of accident where the actual damage or injury occurred. The primary second types of accidents associated with 1,025 engine failures in order of frequency of occurrence are: collision with trees (174); gear collapse (142); nose over/down (129); collision with ground/water, controlled (78); and collided with fence, fenceposts (52). While engine failure/malfunction accounts for nearly 25 percent of the total general aviation accidents, this accident type accounts for 12.7 percent of all fatal accidents and 10.9 percent of total general aviation fatalities.

Groundloop, as a first type of accident, was cited 535 times, 483 times in conjunction with a second type of accident. The principal second types in order of frequency of occurrence are: gear collapse (126); nose over/down (78); collided with ditches (60); collided with snowbank (48); and collided with trees (45).

Overshoot was recorded as a first accident type 211 times. The second accident types most frequently cited following an overshoot were: collided with ditches (43); collided with fence, fenceposts (41); collided with trees (27); gear collapsed (27); and nose over/down (17).

Of the 276 accidents involving hard landing as first type of accident, 147 accidents had gear collapse cited as a second accident type.

Engine failures or malfunctions, groundloops, hard landings and overshoots account for nearly 50 percent of all accident type citations. The remaining six leading accident types - collision with ground/water controlled, collided with wires and poles, collided with trees, stall/mush, collision with ground/water uncontrolled, and nose over/down - accounted for less than 25 percent of the total accidents. However, these six types involved 326 fatal accidents (46.9 percent) and 567 fatalities (43 percent).

Types of Accidents

Total Accidents -- 4,193

<u>Type of Accident</u>	<u>Frequency</u>	<u>Percent of Total</u>
Engine failure or malfunction	1,025	24.45
Ground - water loop-swerve	535	12.76
Hard landing	276	6.58
Overshoot	211	5.03
Collision with ground/water controlled	181	4.32
Collided with wires/poles	181	4.32
Collided with trees	177	4.22
Stall/mush	175	4.17
Collision with ground/water uncontrolled	158	3.77
Nose over/down	145	3.46

Accident Causes/Factors

In 1976, the probable cause(s) was determined for 670 fatal accidents and 3,470 nonfatal accidents. The 10 most frequently cited causes or related factors of fatal and nonfatal accidents are listed by percentage and frequency of occurrence in Tables 3 and 4, respectively.

In accidents where fatalities occurred, 7 out of the 10 leading causal citations involved some type of human failure/error while the remaining 3 involved environmental conditions. No mechanical difficulty or aircraft malfunction citations were included in the top 10.

The specific causal citation "Pilot - Failed to Obtain/Maintain Flying Speed" has increased in fatal accidents from 24.69 percent in 1974 to 27.61 percent in 1976. This pilot causal factor was involved in 185 fatal accidents which resulted in 341 fatalities or 25.8 percent of the fatalities during 1976.

In nonfatal accidents, 6 of the 10 most frequently cited causal factors involve the pilot, while the remaining involve terrain (2), weather (1), and an overload failure (1) of an aircraft component. The highest pilot citation was, "inadequate preflight preparation or planning," recorded on 488 nonfatal accidents or 14.06 percent of the total.

Table 3. -- Ten Most Frequently Cited Causes/Factors of
670 Fatal Accidents.
- All Operations -

<u>10 Most Frequently Cited Causes/Factors</u>	<u>Frequency</u>	<u>Percent</u>
Pilot - Failed to Obtain/Maintain Flying Speed	185	27.61
Terrain - High Obstructions	143	21.34
Weather - Low Ceiling	137	20.45
Pilot - Continued VFR Flight into Adverse Weather Conditions	100	14.93
Weather - Fog	95	14.18
Pilot - Improper Inflight Decisions or Planning	93	13.88
Pilot - Inadequate Preflight Preparation or Planning	82	12.24
Pilot - Spatial Disorientation	80	11.94
Miscellaneous - Unwarranted Low Flying	66	9.85
Pilot - Improper Operation of Flight Controls	53	7.91

Table 4. -- Ten Most Frequently Cited Causes/Factors of
 3,470 Nonfatal Accidents
 - All Operations -

<u>10 Most Frequently Cited Causes/Factors</u>	<u>Frequency</u>	<u>Perce</u>
Miscellaneous Acts, Conditions - Overload Failure	542	15.62
Pilot - Inadequate Preflight Preparation or Planning	488	14.06
Terrain - High Obstructions	476	13.72
Pilot - Failed to Maintain Directional Control	385	9.94
Pilot - Failed to Obtain/Maintain Flying Speed	330	9.51
Terrain - Rough/Uneven	313	9.02
Weather - Unfavorable Wind Conditions	303	8.73
Pilot - Improper Level Off	302	8.70
Pilot - Mismanagement of Fuel	240	6.92
Pilot - Misjudged Distance and Speed	229	6.60

Kinds of Flying

Total and fatal accident rates for pleasure, aerial application, instructional, air taxi, business and corporate/executive kinds of flying are displayed in tables 5 and 6, respectively. The trends in the total accident rates per 100,000 aircraft-hours flown were generally decreasing, especially for the past 3 years, 1974 through 1976. The pleasure flying accident rate has decreased from 26.69 in 1973 to 20.37 in 1976; however, pleasure flying consistently had the highest accident rate each year compared to the remaining kinds of flying. Corporate/executive kind of flying consistently had the lowest total accident rate each year. The pleasure flying accident rate was approximately 11 times larger than the corporate/executive rate each year.

As in total accidents, the fatal accident rates per 100,000 aircraft hours flown have had a decreasing trend during the 1973 through 1976 period. Pleasure flying consistently had the highest fatal rate each year while corporate/executive flying had the lowest rate each year. On the average pleasure flying rates were larger than corporate/executive flying by a factor of 9.

Table 5. -- Kind of Flying
Total Accident Rates Per
100,000 Aircraft-hours Flown

	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>
Pleasure	26.69	23.82	21.05	20.38
Aerial Application	20.54	23.11	19.74	17.33
Instructional	10.62	11.71	10.51	9.59
Air Taxi	5.32	5.25	5.42	4.76
Business	5.11	4.95	4.79	4.09
Corporate/Executive	2.76	2.15	1.65	1.43

Table 6. -- Kind of Flying
Fatal Accident Rates Per
100,000 Aircraft-hours Flown

	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>
Pleasure	4.90	4.49	3.99	3.88
Aerial Application	2.38	1.77	1.56	1.56
Air Taxi	1.37	1.10	0.95	1.17
Business	1.21	1.02	0.96	0.85
Instructional	0.89	1.11	0.77	1.01
Corporate/Executive	0.71	0.41	0.45	0.33

KIND OF FLYING—TOTAL ACCIDENT RATES PER 100,000 AIRCRAFT—HOURS FLOWN
1973 - 1976

TOTAL ACCIDENT RATE
PER 100,000
AIRCRAFT — HOURS FLOWN

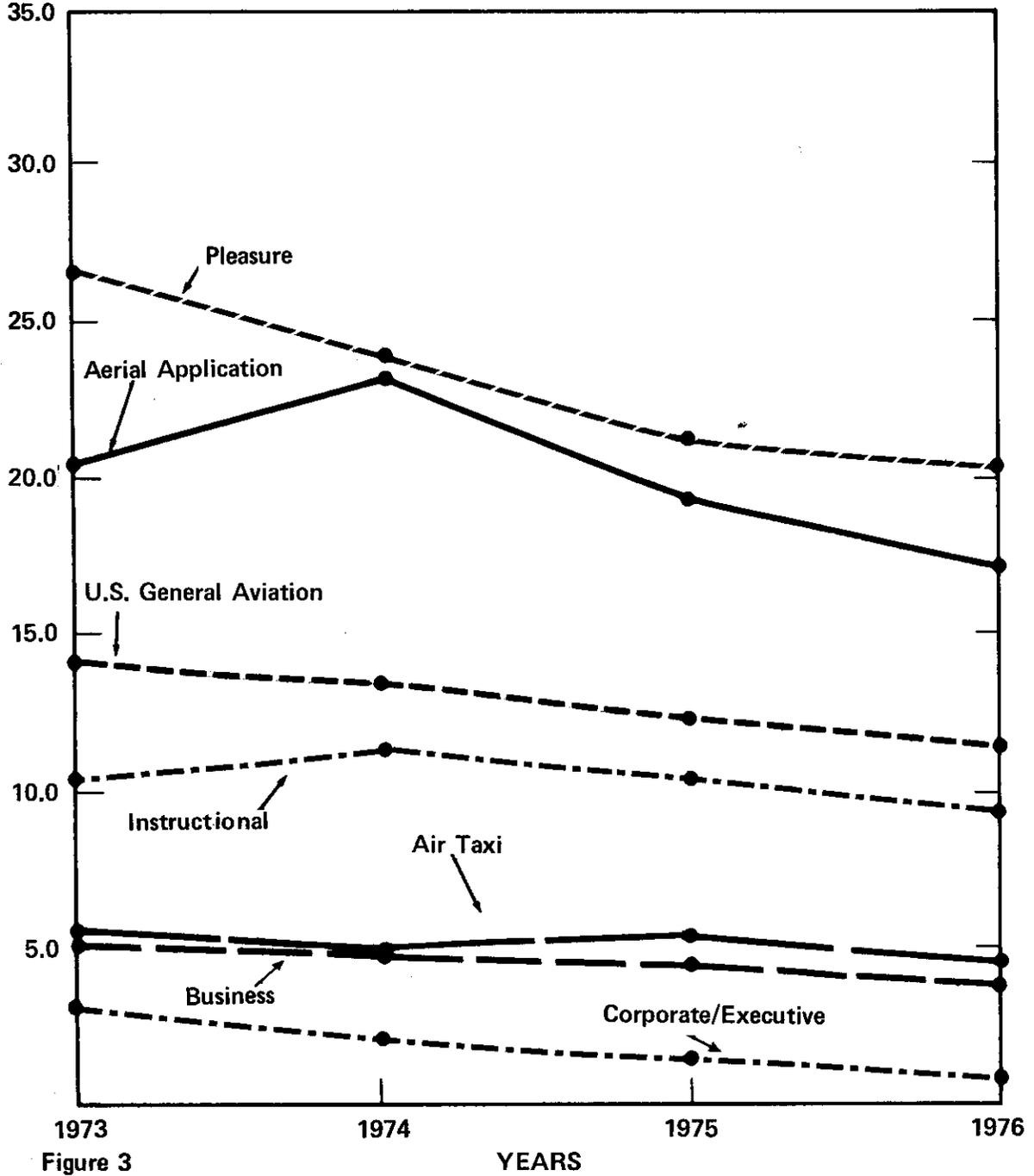


Figure 3

YEARS

KIND OF FLYING – FATAL ACCIDENT RATE PER 100,000 AIRCRAFT – HOURS FLO
 FATAL ACCIDENT RATE PER 100,000 AIRCRAFT-HOURS FLOWN
 1973 - 1976

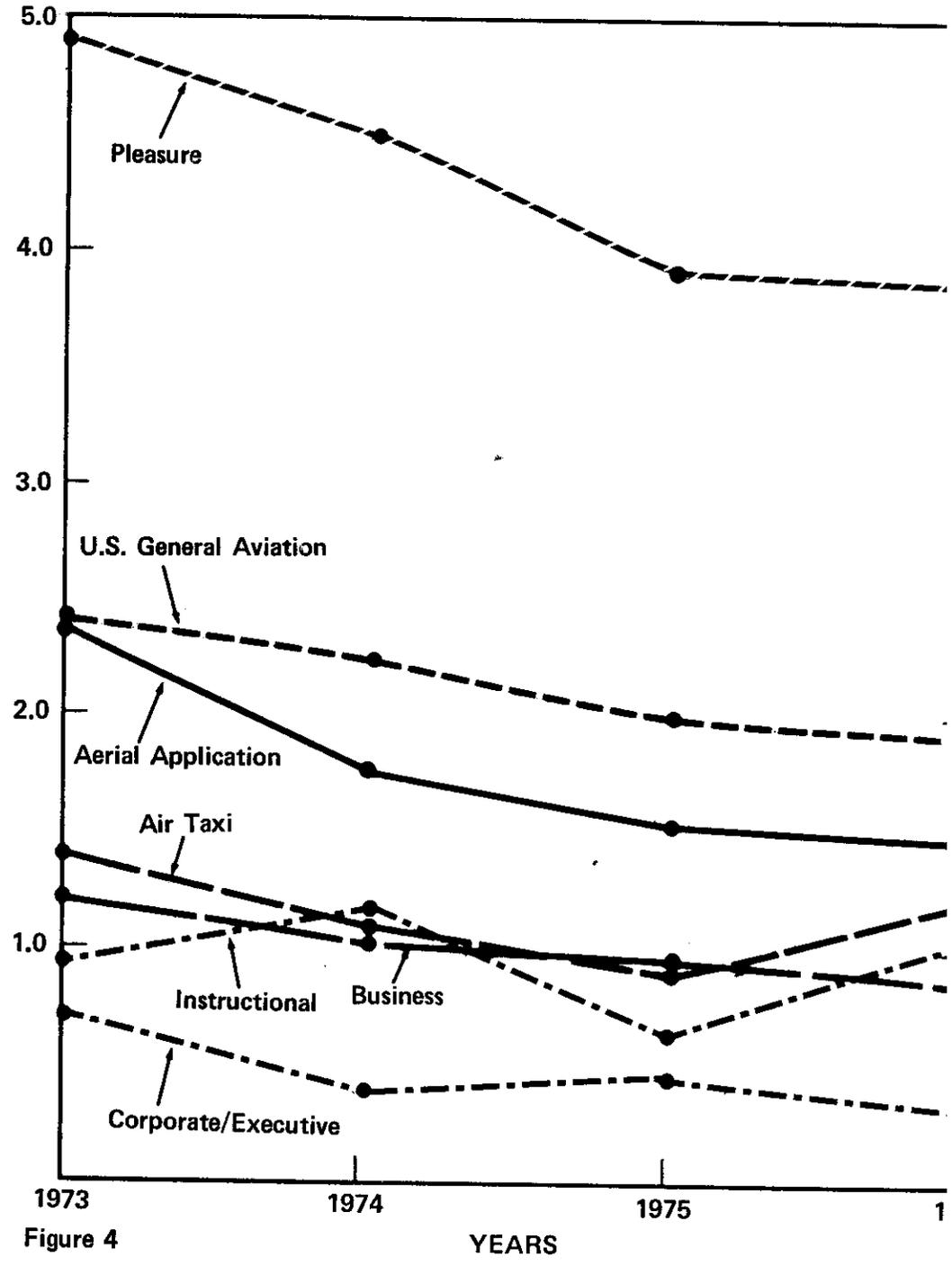


Figure 4

Conclusions

1. The 1976 general aviation safety record showed a general improvement when compared with 1975 and continued a decreasing trend over the past ten years.

*total accidents decreased from 4,237 during 1975 to 4,193 during 1976 representing the lowest number of total accidents since 1956 when 3,474 accidents were recorded.

*fatal accidents increased slightly from 675 (1975) to 695 (1976).

*fatalities decreased from 1,345 in 1975 to 1,320 during 1976. This number of fatalities is the lowest during the past ten years with the exception of 1970 when there were 1,310 fatalities.

*the total accident rate (per 100,000 hours) decreased from 12.4 (1975) to 11.6 (1976). This total accident rate is the lowest since 1938 when these data were first recorded.

*the fatal accident rate decreased from 1.97 in 1975 to 1.92 (per 100,000 hours) during 1976. The reduction below the 2.0 level to 1.92 is also the lowest fatal accident rate on record.

2. The types of accidents that, because of their high occurrence rate, provide the most accident prevention potential are:

*fatal accidents

collision with ground/water - controlled and uncontrolled
engine failure or malfunction
stall - spin
collided with trees
collided with wires/poles

*nonfatal accidents

engine failure or malfunction
groundloop
hard landing
overshoot

3. The phases of operation that are associated with the leading accident types listed above are:

*fatal accidents

inflight - normal cruise
takeoff - initial climb
inflight - uncontrolled descent
landing - final approach

*nonfatal accidents

takeoff - initial climb
inflight - normal cruise
landing - level off/touchdown
landing - roll
landing - final approach - VFR

4. Pleasure kind of flying had the highest total and fatal accident rates during 1976. Corporate/executive flying had the lowest total and fatal accident rates. The pleasure flying rates were more than 10 times those of corporate/executive flying. Clearly, pleasure flying represents the activity that could profit most from accident prevention efforts and programs.

5. The pilot was cited as a causal factor in 89 percent of the fatal and 83 percent of the nonfatal accidents during 1976. The leading detailed pilot causal factors were:

*fatal accidents

"failed to obtain/maintain flying speed"
"continued VFR flight into adverse weather conditions"
"improper inflight decisions or planning"
"inadequate preflight preparation or planning"
"spatial disorientation"

*nonfatal accidents

"inadequate preflight preparation or planning"
"failed to maintain directional control"
"failed to obtain/maintain flying speed"
"improper level off"
"mismanagement of fuel"

Accident prevention emphasis to reduce and eliminate these specific pilot causal factors could have a significant impact on the general aviation safety record.

BY THE NATIONAL TRANSPORTATION SAFETY BOARD

/s/ KAY BAILEY
Acting Chairman

/s/ FRANCIS H. MCADAMS
Member

/s/ PHILIP A. HOGUE
Member

/s/ JAMES B. KING
Member

March 8, 1978

STATISTICAL INFORMATION

GENERAL AVIATION ACCIDENTS

ALL CATEGORIES OF AIRCRAFT

STATISTICAL RECAPITULATION OF ACCIDENTS
U.S. GENERAL AVIATION
1975-1976

	<u>1975</u>	<u>1976</u>
<u>Total Accidents</u>	4,237	4,193
<u>Aircraft Involved 1/</u>	4,288	4,241
<u>Injury Index</u>		
Fatal	675	695
Serious	419	422
Minor	648	565
None	2,495	2,511
Unknown	0	0
<u>Injuries 1/</u>		
Fatal	1,345	1,320
Serious	769	771
Minor	1,160	1,045
None	5,269	5,220
Unknown	2	1
<u>Total Aboard</u>	8,517	8,261
<u>Aircraft Damage 1/</u>		
Destroyed	1,094	1,095
Substantial	3,159	3,112
Minor	20	14
None	15	20
Not Reported	0	0
<u>Fire After Impact 1/</u>		
Fatal Accidents	224	196
Nonfatal Accidents	135	146
<u>Active Aircraft (Est.) 2/</u>	168,475	178,304
<u>Hours Flown(000) (Est.) 2/</u>	34,165	36,128
<u>Accident Rates Per 100,000 Hours Flown</u>		
Total	12.40	11.60
Fatal	1.97	1.92

1/ Includes all aircraft involved in collisions

2/ Source: FAA

Note: Suicide/sabotage accidents included in all computations except rates (1975-2, 1976-4.)

ACCIDENTS, RATES, ACTIVE AIRCRAFT

ALL OPERATIONS

1976

	<u>FIXED WING</u>				<u>ROTORCRAFT</u>	
	<u>Single*</u> <u>Engine</u>	<u>Multi-*</u> <u>Engine</u>	<u>Glider</u>	<u>Balloon</u>	<u>Heli-</u> <u>copter</u>	<u>Gyro</u> <u>copt</u>
ACCIDENTS	3,417	433	65	13	258	15
AIRCRAFT INVOLVED	3,455	435	65	13	258	15
<u>INJURY INDEX</u>						
Fatal	528	128	8	3	27	5
Serious	330	33	15	4	39	1
Minor	464	38	11	3	49	1
None	2,095	234	31	3	143	8
Unknown	0	0	0	0	0	0
ACTIVE AIRCRAFT (est.) <u>1/</u>	144,941	25,684	2,345	824		4,505
<u>AIRCRAFT DAMAGE</u>						
Destroyed	823	172	11	6	77	6
Substantial	2,605	259	52	6	181	9
Minor/None	11	3	2	0	0	0
Unknown/Not Reported	16	1	0	1	0	0
HOURS FLOWN (est.) <u>1/</u>	26,151,459	7,930,098	245,755	31,270		1,546,275
<u>ACCIDENT RATES PER 100,000 HOURS FLOWN</u>						
Total	13.06	5.43	26.44	41.57		17.66
Fatal	2.02	1.59	3.25	9.59		2.07

*Note: One suicide and one sabotage accident in single engine fixed-wing and two sabotage accidents in multi-engine fixed-wing aircraft are included in all computations except rates.

1/ Source: FAA

ANALYTIC TABLE

FIRST TYPE OF ACCIDENT BY INJURY INDEX
ALL OPERATIONS

FIRST TYPE OF ACCIDENT	INJURY INDEX				RECORDS	ACCIDENT
	FATAL	SERIOUS	MINOR	NONE		
GROUND-WATER LOOP-SWERVE	4	12	51	468	535	535
DRAGGED WINGTIP POD OR FLOAT				1	1	1
WHEELS-UP LANDING		1	1	65	67	67
WHEELS-DOWN LANDING IN WATER			3	1	4	4
GEAR COLLAPSED			3	36	39	39
GEAR RETRACTED	1		2	56	59	59
HARD LANDING	1	10	27	238	276	276
NOSE OVER/DOWN		5	12	128	145	145
ROLL OVER	1	3	8	16	28	28
OVERSHOOT	8	13	28	162	211	211
UNDERSHOOT	9	11	20	73	113	113
<u>COLLISION BETWEEN AIRCRAFT</u>						
BOTH IN FLIGHT	46	2	2	10	60	30
ONE AIRBORNE			2	4	6	3
BOTH ON GROUND		2		28	30	15
<u>COLLISION WITH GROUND/WATER</u>						
CONTROLLED	95	18	21	47	181	181
UNCONTROLLED	114	21	11	12	158	158
<u>COLLIDED WITH</u>						
WIRES/POLES	49	30	38	64	181	181
TREES	54	27	32	64	177	177
<u>RESIDENCE/S</u>						
BUILDING/S		1		6	7	7
FENCE, FENCEPOSTS	1	3	3	44	51	51
ELECTRONIC TOWERS	5	1		1	7	7
RUNWAY OR APPROACH LIGHTS				6	6	6
AIRPORT HAZARD			1	5	6	6
ANIMALS				5	5	5
CROP		3	1	13	17	17
FLAGMAN LOADER	2				2	2
DITCHES		1	1	30	32	32
SNOWBANK		1	1	14	16	16
PARKED AIRCRAFT (UNATTENDED)		2		20	22	22
AUTOMOBILE				8	8	8
DIRT BANK		2	4	14	20	20
OTHER	4	6	14	54	78	78
BIRD STRIKE		1	1	2	4	4

ANALYTIC TABLE

FIRST
TYPE OF ACCIDENT

FATAL
SERIOUS
MINOR
NONE

RECORDS ACCIDENTS PERCENT

FIRST TYPE OF ACCIDENT	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
STALL	46	31	29	28	134	134	3.16
SPIN	83	15	3	5	106	106	2.50
SPIRAL	6	4	2	1	13	13	.31
MUSH	13	25	31	106	175	175	4.13
<u>FIRE OR EXPLOSION</u>							
IN FLIGHT	5		4	8	17	17	.40
ON GROUND		1	2	5	8	8	.19
<u>AIRFRAME FAILURE</u>							
IN FLIGHT	38	4	2	21	65	65	1.53
ON GROUND		1		10	11	11	.26
ENGINE TEARAWAY							
ENGINE FAILURE OR MALFUNCTION	89	146	190	600	1025	1025	24.17
<u>PROPELLER/ROTOR FAILURE</u>							
PROPELLER	3	1	3	15	22	22	.52
TAIL ROTOR	6	5	4	9	24	24	.57
MAIN ROTOR	3	1	3	4	11	11	.26
PROP ROTOR ACNT TO PERSON	5	9			14	14	.33
JET INTAKE/EXH ACNT TO PERS							
PROPELLER/JET/ROTOR BLAST				4	4	4	.09
TURBULENCE	5	3	5	8	21	21	.50
HAIL DAMAGE TO AIRCRAFT							
LIGHTNING STRIKE				1	1	1	.02
EVASIVE MANEUVER	1			1	2	2	.05
UNCONTROLLED ALT DEVIATION							
DITCHING				3	3	3	.07
MISSING ACFT NOT RECOVERED	11				11	11	.26
MISCELLANEOUS/OTHER	4	2	2	7	15	15	.35
UNDETERMINED	6			1	7	7	.17
RECORDS	718	424	567	2532	4241		
ACCIDENTS	695	422	565	2511		4193	
PERCENTS	16.9	10.0	13.4	59.7			

ANALYTIC TABLE

FIRST TYPE OF ACCIDENT BY AIRCRAFT DAMAGE
ALL OPERATIONS.

FIRST TYPE OF ACCIDENT	DAMAGE				RECORDS	ACCIDENTS
	DESTROYED	SUBSTANTIAL	MINOR	NONE		
<u>GROUND-WATER LOOP-SWERVE</u>	21	514			535	535
DRAGGED WINGTIP POD OR FLOAT		1			1	1
WHEELS-UP LANDING	3	64			67	67
WHEELS-DOWN LANDING IN WATER		4			4	4
GEAR COLLAPSED		39			39	39
GEAR RETRACTED	1	58			59	59
HARD LANDING	13	262	1		276	276
NOSE OVER/DOWN	3	142			145	145
ROLL OVER	6	20			28	28
OVERSHOOT	20	191			211	211
UNDERSHOOT	18	95			113	113
<u>COLLISION BETWEEN AIRCRAFT</u>						
BOTH IN FLIGHT	37	17	5	1	60	30
ONE AIRBORNE	1	4	1		6	3
BOTH ON GROUND		25	5		30	15
<u>COLLISION WITH GROUND/WATER</u>						
CONTROLLED	111	70			181	181
UNCONTROLLED	127	31			158	158
<u>COLLIDED WITH</u>						
WIRES/POLES	88	93			181	181
TREES	90	87			177	177
RESIDENCE/S						
BUILDING/S	1	6			7	7
FENCE, FENCEPOSTS	4	47			51	51
ELECTRONIC TOWERS	5	2			7	7
RUNWAY OR APPROACH LIGHTS		6			6	6
AIRPORT HAZARD		6			6	6
ANIMALS		5			5	5
CROP	3	14			17	17
FLAGMAN LOADER			1	1	2	2
DITCHES	2	30			32	32
SNOWBANK		16			16	16
PARKED AIRCRAFT (UNATTENDED)		22			22	22
AUTOMOBILE		8			8	8
DIRT BANK	1	19			20	20
OTHER	11	66	1		78	78
BIRD STRIKE	1	3			4	4

ANALYTIC TABLE

PERCENT	FIRST TYPE OF ACCIDENT					RECORDS	ACCIDENTS	PERCENT
		DESTROYED	SUBSTANTIAL	MINOR	NONE			
	STALL	65	69					
	SPIN	80	26		134	134	3.16	
	SPIRAL	9	4		106	106	2.50	
12.61	MUSH	44	131		13	13	.31	
.02	<u>FIRE OR EXPLOSION</u>				175	175	4.13	
1.58	IN FLIGHT	10	7					
.09	ON GROUND	3	5		17	17	.40	
.92	<u>AIRFRAME FAILURE</u>				8	8	.19	
1.39	IN FLIGHT	44	21					
6.51	ON GROUND		11		65	65	1.53	
3.42	ENGINE TEARAWAY				11	11	.26	
.66	ENGINE FAILURE OR MALFUNCTION	222	803					
4.98	PROPELLER/ROTOR FAILURE				1025	1025	24.17	
2.66	PROPELLER	4	18					
	TAIL ROTOR	9	15		22	22	.52	
1.41	MAIN ROTOR	5	6		24	24	.57	
.14	PROP ROTOR ACNT TO PERSON		1	13	11	11	.26	
.71	JET INTAKE/EXH ACNT TO PERS				14	14	.33	
	PROPELLER/JET/ROTOR BLAST		4					
.27	TURBULENCE	10	11		4	4	.09	
.73	HAIL DAMAGE TO AIRCRAFT				21	21	.50	
	LIGHTNING STRIKE		1					
.27	EVASIVE MANEUVER	1	1		1	1	.02	
.17	UNCONTROLLED ALT DEVIATION				2	2	.05	
	DITCHING	1	2					
.17	MISSING ACFT NOT RECOVERED	10	1		3	3	.07	
.20	MISCELLANEOUS/OTHER	3	7	2	11	11	.26	
.17	UNDETERMINED	6	1		19	15	.35	
.14					7	7	.17	
.14	RECORDS	1095	3112	14				
.12	ACCIDENTS	1080	3097	14	4241			
.40	PERCENTS	25.8	73.4	.3		4193		

ANALYTIC TABLE

PHASE OF OPERATION BY INJURY INDEX
ALL OPERATIONS

FIRST
OPERATIONAL PHASE

FATAL
SERIOUS
MINOR
NONE

RECORDS ACCIDENTS PERCENT

FIRST OPERATIONAL PHASE	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
<u>STATIC</u>							
STARTING ENGINE/S	3	4		1			
IDLING ENGINE/S	2	5		7	8	8	.19
ENGINE RUNUP			1	1	14	14	.33
IDLING ROTORS				2	2	2	.05
PARKED-ENGINES NOT OPERATING					2	2	.05
OTHER		2	1	1			
<u>TAXI</u>							
TO TAKEOFF					4	4	.09
FROM LANDING		1	1	52			
OTHER	1	2	3	56	54	54	1.27
GROUND TAXI TO TAKEOFF	1	2	3	21	62	62	1.46
GROUND TAXI FROM LANDING				2	27	27	.64
GROUND TAXI, OTHER			1		2	2	.05
AERIAL TAXI TO TAKEOFF					1	1	.02
AERIAL TAXI TO/FROM LANDING		1	1	2			
AERIAL TAXI, OTHER					4	4	.09
<u>TAKEOFF</u>							
RUIN					2	2	.05
INITIAL CLIMB	6	11	18	138			
VERTICAL	75	77	95	264	173	173	4.08
RUNNING (ROTORCRAFT/VTOL-STOL)		2	7	13	511	510	12.05
ABORTED (FIXED-WING)	1		2		22	22	.52
ABORTED (ROTORCRAFT/VTOL)	1	3	6	52	3	3	.07
ABORTED (ROTORCRAFT/STOL)				1	62	62	1.46
OTHER			1		1	1	.02
OTHER	1	3	2	3	1	1	.02
<u>INFLIGHT</u>							
CLIMB TO CRUISE					9	9	.21
NORMAL CRUISE	13	9	14	46			
DESCENDING	137	67	80	244	82	82	1.93
HOLDING (IFR)	16	16	13	34	528	520	12.45
HOVERING					79	79	1.86
HOVERING	1	4	5	15			
POWER-ON DESCENT (ROTORCRAFT)			2	1	25	25	.59
AUTOROTATIVE DESCENT				2	3	3	.07
ACROBATICS					2	2	.05
BUZZING	31	3	3	9			
UNCONTROLLED DESCENT	26	3		8	46	46	1.08
UNCONTROLLED DESCENT	73	8	1	3	37	37	.87
					85	85	2.00

ANALYTIC TABLE

FIRST OPERATIONAL PHASE					RECORDS	ACCIDENTS	PERCENT
	FATAL	SERIOUS	MINOR	NONE			
EMERGENCY DESCENT	1				1	1	.1
LOW PASS	39	16	15	28	98	98	2.3
OTHER	117	21	23	36	197	194	4.9
EN ROUTE TO TREAT CROP	2	2	4	11	19	19	.4
EN ROUTE TO RELOADING AREA	1	1		1	3	3	.1
SURVEY FIELD/AREA	1	1	1	1	4	4	.1
STARTING SWATH RUN	4	7	1	14	26	26	.6
SWATH RUN	10	11	16	66	103	102	2.5
FLAREOUT FOR SWATH RUN	1	1	1	5	8	8	.2
PULLUP FROM SWATH RUN	3	7	8	23	41	41	1.0
PROCEDURE TURNAROUND	11	6	10	48	75	75	1.8
CLEANUP SWATH	1	1	3	1	6	6	.1
MANEUVER TO AVOID OBSTRUCTION		2	1		3	3	.1
RETURN TO STRIP	2			8	10	10	.2
<u>LANDING</u>							
TRAFFIC PATTERN-CIRCLING	25	18	13	19	75	74	1.8
FINAL APPROACH (VFR)	43	33	57	158	291	282	6.9
INITIAL APPROACH	6	1		2	9	9	.2
FINAL APPROACH (IFR)	16	6	3	6	31	31	.7
LEVEL OFF/TOUCHDOWN	13	28	74	536	651	651	15.8
ROLL (FIXED WING)	1	15	48	513	577	573	13.9
ROLL-ON/RUN-ON (ROTORCRAFT)				3	3	3	.1
POWER-ON LANDING (ROTORCRAFT)	3	3	6	11	23	23	.5
POWER-OFF AUTOROTATIVE LDG			1	10	11	11	.2
GO-AROUND (VFR)	10	18	21	48	97	97	2.4
MISSED APPROACH (IFR)	3				3	3	.1
OTHER	4	2		3	9	9	.2
UNKNOWN/NOT REPORTED	13			3	16	16	.4
RECORDS	718	424	567	2532	4241		
ACCIDENTS	695	422	565	2511		4193	
PERCENTS	16.9	10.0	13.4	59.7			

ANALYTIC TABLE

PHASE OF OPERATION BY AIRCRAFT DAMAGE
ALL OPERATIONS

PERCENT

FIRST
OPERATIONAL PHASE

DESTROYED
SUBSTANTIAL
MINOR
NONE

RECORDS ACCIDENTS PERCENT

STATIC

STARTING ENGINE/S

2 6

8 8 .19

IDLING ENGINE/S

6 1 7

14 14 .33

ENGINE RUNUP

1 1

2 2 .05

IDLING ROTORS

2

2 2 .05

PAKED-ENGINES NOT OPERATING

OTHER

1 2 1

4 4 .09

TAXI

TO TAKEOFF

2 50 2

54 54 1.27

FROM LANDING

61 1

62 62 1.46

OTHER

26 1

27 27 .64

GROUND TAXI TO TAKEOFF

1 1

2 2 .05

GROUND TAXI FROM LANDING

1

1 1 .02

GROUND TAXI, OTHER

AERIAL TAXI TO TAKEOFF

3 1

4 4 .09

AERIAL TAXI TO/FROM LANDING

AERIAL TAXI, OTHER

2

2 2 .05

TAKEOFF

RUN

13 160

173 173 4.08

INITIAL CLIMB

137 374

511 510 12.05

VERTICAL

5 17

22 22 .52

RUNNING (ROTORCRAFT/VTOL-STOL)

2 1

3 3 .07

ABORTED (FIXED-WING)

2 60

62 62 1.46

ABORTED (ROTORCRAFT/VTOL)

1

1 1 .02

ABORTED (ROTORCRAFT/STOL)

1

3 3 .02

OTHER

3 6

9 9 .21

INFLIGHT

CLIMB TO CRUISE

26 55 1

82 82 1.93

NORMAL CRUISE

193 333 1 1

528 520 12.45

DESCENDING

31 48

79 79 1.86

HOLDING (IFR)

HOVERING

6 19

25 25 .59

POWER-ON DESCENT (ROTORCRAFT)

3

3 3 .07

AUTOROTATIVE DESCENT

2

2 2 .05

ACROBATICS

33 13

46 46 1.08

BUZZING

25 12

37 37 .87

UNCONTROLLED DESCENT

75 10

85 85 2.00

ANALYTIC TABLE

FIRST
OPERATIONAL PHASE

	ANALYTIC TABLE				RECORDS	ACCIDENTS	F
	DESTROYED	SUBSTANTIAL	MINOR	NONE			
EMERGENCY DESCENT	1				1	1	0
LOW PASS	49	49			98	98	2.3
OTHER	129	68			197	194	4.7
EN ROUTE TO TREAT DROP	5	14			19	19	.
EN ROUTE TO RELOADING AREA	2	1			3	3	.
SURVEY FIELD/AREA	3	1			4	4	.
STARTING SWATH RUN	15	11			26	26	.
SWATH RUN	27	73	1	2	103	102	2.
FLAREOUT FOR SWATH RUN	2	6			8	8	.
PULLUP FROM SWATH RUN	15	26			41	41	.
PROCEDURE TURNAROUND	30	45			75	75	1.
CLEANUP SWATH	4	2			6	6	.
MANEUVER TO AVOID OBSTRUCTION	2	1			3	3	.
RETURN TO STRIP	1	9			10	10	.
<u>LANDING</u>							
TRAFFIC PATTERN-CIRCLING	33	42			75	74	1
FINAL APPROACH (VFR)	69	219	3		291	282	6
INITIAL APPROACH	6	3			9	9	.
FINAL APPROACH (IFR)	23	8			31	31	.
LEVEL OFF/TOUCHDOWN	47	602	1	1	651	651	15
ROLL (FIXED WING)	19	554	2	2	577	573	13
ROLL-ON/RUN-ON (ROTORCRAFT)		3			3	3	.
POWER-ON LANDING (ROTORCRAFT)	5	18			23	23	.
POWER-OFF AUTOROTATIVE LG	1	10			11	11	.
GO-AROUND (VFR)	26	71			97	97	.
MISSED APPROACH (IFR)	2	1			3	3	.
OTHER	4	5			9	9	.
UNKNOWN/NOT REPORTED	12	4			16	16	.
RECORDS	1095	3112	14	20	4241		
ACCIDENTS	1080	3097	14	20		4193	
PERCENTS	25.8	73.4	.3	.5			

CAUSE/FACTOR TABLE

ALL OPERATIONS
ACCIDENTS WITH ASSIGNED CAUSES ONLY

INVOLVES 4140 TOTAL ACCIDENTS
INVOLVES 670 FATAL ACCIDENTS

BROAD CAUSE/FACTOR	FATAL ACCIDENTS		NONFATAL ACCIDENTS		ALL ACCIDENTS	
	CAUSE	TOTAL*	CAUSE	TOTAL*	CAUSE	TOTAL*
PILOT	591	129	2852	323	2872	3473
PERSONNEL	88.21	19.25	82.19	9.31	82.77	83.89
AIRFRAME	64	21	274	72	340	421
LANDING GEAR	9.55	3.13	7.90	2.07	9.80	10.17
POWERPLANT	13	4	29	11	40	57
SYSTEMS	1.94	.60	.84	.32	1.15	1.38
INSTRUMENTS/EQUIPMENT & ACCESSORIES	1	1	132	44	174	174
	.15	.15	3.80	1.27	5.01	4.25
ROTORCRAFT	55	4	492	40	529	587
	8.21	.60	14.18	1.15	15.24	14.18
AIRPORT/AIRWAYS/FACILITIES	5	3	31	5	36	44
	.75	.45	.89	.14	1.04	1.06
WEATHER	1	4	7	17	24	29
	.15	.60	.20	.49	.69	.70
TERRAIN	10	10	32	1	33	42
	1.49	.00	1.49	.03	.95	1.04
MISCELLANEOUS	1	10	57	309	358	369
	.15	1.49	1.64	8.90	10.32	11.40
UNDETERMINED	14	244	109	547	642	897
	2.09	36.42	3.14	15.76	18.50	21.67
	11	157	304	836	1136	1303
	1.64	23.43	8.76	24.09	32.74	41.47
	13	3	118	21	139	155
	1.94	.45	3.40	.61	4.01	4.58
	39		29		68	68
	5.82	.00	.84	.00	.84	1.64

THE FIGURES OPPOSITE EACH CAUSAL CATEGORY REPRESENT THE NUMBER AND PERCENT OF ACCIDENTS IN WHICH THAT PARTICULAR CAUSAL CATEGORY WAS ASSIGNED
* IF AN ACCIDENT INCLUDES BOTH A CAUSE AND RELATED FACTOR IN THE SAME CAUSAL CATEGORY, THE ACCIDENT IS REPRESENTED ONCE UNDER THE TOTAL FOR THAT CATEGORY

CAUSE/FACTOR TABLE
ALL OPERATIONS
ACCIDENTS WITH ASSIGNED CAUSES ONLY

INVOLVES 4140 TOTAL ACCIDENTS
INVOLVES 670 FATAL ACCIDENTS

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
** PILOT **									
PILOT IN COMMAND									
ATTEMPTED OPERATION W/KNOWN DEFICIENCIES IN EQUIPMENT	7	4	11	22	5	27	29	9	38
ATTEMPTED OPERATION BEYOND EXPERIENCE/ABILITY LEVEL	44	8	52	51	7	58	95	15	110
BECAME LOST/DISORIENTED	8	4	12	34	12	46	42	16	58
CONTINUED VFR FLIGHT INTO ADVERSE WEATHER CONDITIONS	98	2	100	66	7	73	164	9	173
CONTINUED INTO KNOWN AREA OF SEVERE TURBULENCE	4		4	3		3	7		7
DELAYED ACTION IN ABORTING TAKEOFF	1		1	47	4	51	48	4	52
DELAYED IN INITIATING GO-AROUND	5		5	88	4	92	93	4	97
DIVERTED ATTENTION FROM OPERATION OF AIRCRAFT	24	5	29	64	31	95	88	36	124
EXCEEDED DESIGN STRESS LIMITS OF AIRCRAFT	23		23	7		7	30		37
FAILED TO EXTEND LANDING GEAR		1	1	37		37	6	2	38
FAILED TO RETRACT LANDING GEAR		1	1	6	1	7	3	1	8
RETRACTED GEAR PREMATURELY				3		3	3		3
INADVERTENTLY RETRACTED GEAR				19		19	19		19
FAILED TO SEE AND AVOID OTHER AIRCRAFT	29		29	30		30	59		89
FAILED TO SEE AND AVOID OBJECTS OR OBSTRUCTIONS	50	1	51	202	2	204	252	3	255
FAILED TO OBTAIN/MAINTAIN FLYING SPEED	183	2	185	330		330	513	2	515
MISJUDGED, SPEED, ALTITUDE OR CLEARANCE	12	1	13	39	1	40	51	2	53
FAILED TO MAINTAIN ADEQUATE ROTOR RPM	2		2	31	1	32	33	1	34
FAILED TO USE OR INCORRECTLY USED MISC EQUIPMENT	3	4	7	3	3	6	6	7	13
FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES ETC	44	8	52	82	10	92	126	18	144
IMPROPER OPERATION OF POWERPLANT + POWERPLANT CONTROLS	10	1	11	103	11	114	113	12	125
IMPROPER OPERATION OF BRAKES AND/OR FLIGHT CONTROLS				183	5	188	183	5	188
IMPROPER OPERATION OF FLIGHT CONTROLS	52	1	53	132	4	136	184	5	189
PREMATURE LIFT OFF	5	1	6	57	2	59	62	3	65
IMPROPER LEVEL OFF	1		1	300	2	302	301	2	303
IMPROPER IFR OPERATION	14	2	16	9		9	23	2	25
IMPROPER IN-FLIGHT DECISIONS OR PLANNING	80	13	93	141	14	155	221	27	248
IMPROPER COMPENSATION FOR WIND CONDITIONS	3	1	4	121	12	133	124	13	137
INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING	57	25	82	428	60	488	485	85	570
INADEQUATE SUPERVISION OF FLIGHT	8	2	10	78	1	79	86	3	89
LACK OF FAMILIARITY WITH AIRCRAFT	11	17	28	39	93	132	50	110	182
MISMANAGEMENT OF FUEL	15		15	239	1	240	254	1	255
EXERCISED POOR JUDGMENT	33	11	44	74	8	82	107	19	126
OPERATED CARELESSLY	10	4	14	11	2	13	21	6	27
SELECTED UNSUITABLE TERRAIN	6	1	7	200	9	209	206	10	216
IMPROPER STARTING PROCEDURES				5		5	5		5
STARTED ENGINE WITHOUT PROPER ASSISTANCE/EQUIPMENT	2		2	7		7	9		11
TAXIED/PARKED WITHOUT PROPER ASSISTANCE				22		22	22		22
FAILED TO ASSURE THE GEAR WAS DOWN AND LOCKED				20		20	20		20
INITIATED FLIGHT IN ADVERSE WEATHER CONDITIONS	28		28	16	3	19	44	3	47
SPONTANEOUS-IMPROPER ACTION				11	4	15	11	4	15
MISJUDGED DISTANCE, SPEED, AND ALTITUDE	4	1	5	17		17	21	1	22
MISJUDGED DISTANCE AND SPEED	7	1	8	226	3	229	233	4	237
MISJUDGED DISTANCE				2	1	3	2	1	3
MISJUDGED DISTANCE AND ALTITUDE	12	1	13	111	1	112	123	2	125
MISJUDGED SPEED AND ALTITUDE				29		29	29		29
MISJUDGED SPEED				18	3	21	18	3	21
MISJUDGED SPEED AND CLEARANCE	2		2	4		4	6		6
MISJUDGED ALTITUDE AND CLEARANCE	14		14	29		29	43		43
MISJUDGED ALTITUDE	9	2	11	12		12	21	2	23
MISJUDGED CLEARANCE	18		18	91		91	109		109
INADEQUATE TRAINING OF STUDENT				2		2	2		2
MISUNDERSTANDING OF ORDERS OR INSTRUCTIONS				1		1	1		1
IMPROPER RECOVERY FROM BOUNCED LANDING				127		127	127		127
INCAPACITATION	9	2	11	1		1	10	2	12
PHYSICAL IMPAIRMENT	29	17	46	9	6	15	38	23	61
SPATIAL DISORIENTATION	80		80	17		17	97		114
PSYCHOLOGICAL CONDITION									
MISUSED OR FAILED TO USE FLAPS	5	4	9	19	12	31	24	16	40
LEFT AIRCRAFT UNATTENDED ENGINE RUNNING				1		1	1		1
FAILED TO MAINTAIN DIRECTIONAL CONTROL	3		3	384	1	385	387	1	388
SELECTED WRONG RUNWAY RELATIVE TO EXISTING WIND	5	1	6	67	10	77	72	11	83
FAILED TO ABORT TAKEOFF	6	1	7	54	2	56	60	3	63
FAILED TO INITIATE GO-AROUND	2		2	182	1	183	184		184

CAUSE/FACTOR TABLE

DIRECT ENTRIES (CONTINUED)

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
	13		13	6		6	19		19
SUBTOTAL	1090	151	1241	4769	359	5128	5859	510	6369
COPILOT									
DIVERTED ATTENTION FROM OPERATION OF AIRCRAFT									
FAILED TO OBTAIN/MAINTAIN FLYING SPEED				1		1	1		1
IMPROPER OPERATION OF POWERPLANT + POWERPLANT CONTROLS				2		2	2		2
IMPROPER OPERATION OF BRAKES AND/OR FLIGHT CONTROLS				1		1	1		1
IMPROPER OPERATION OF FLIGHT CONTROLS				2		2	2		2
INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING				2		2	2		2
LACK OF FAMILIARITY WITH AIRCRAFT				1		1	1		1
MISJUDGED DISTANCE AND SPEED				1	2	2	1	2	2
MISJUDGED DISTANCE AND ALTITUDE				1		1	1		1
MISJUDGED SPEED				1		1	1		1
IMPROPER RECOVERY FROM BOUNCED LANDING				1		1	1		1
MISUSED OR FAILED TO USE FLAPS				1		1	1		1
FAILED TO MAINTAIN DIRECTIONAL CONTROL				1		1	1		1
SUBTOTAL				2		2	2		2
DUAL STUDENT									
DIVERTED ATTENTION FROM OPERATION OF AIRCRAFT				16	2	18	16	2	18
FAILED TO EXTEND LANDING GEAR				1		1	1		1
INADVERTENTLY RETRACTED GEAR				2		2	2		2
FAILED TO SEE OTHER AIRCRAFT				1		1	1		1
FAILED TO SEE AND AVOID OBJECTS OR OBSTRUCTIONS	1		1	1		1	1		1
FAILED TO OBTAIN/MAINTAIN FLYING SPEED				1		1	1		1
MISJUDGED DISTANCE, SPEED, ALTITUDE OR CLEARANCE	4		4	7		7	11		11
FAILED TO MAINTAIN ADEQUATE ROTOR RPM				1		1	1		1
FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES, ETC.				4		4	4		4
IMPROPER OPERATION OF POWERPLANT + POWERPLANT CONTROLS				1		1	1		1
IMPROPER OPERATION OF BRAKES AND/OR FLIGHT CONTROLS	1		1	1		1	1		1
IMPROPER OPERATION OF FLIGHT CONTROLS				2		2	2		2
PREMATURE LIFT-OFF	2		2	10	1	3	2	1	3
IMPROPER LEVEL OFF				1		1	12		12
IMPROPER IN-FLIGHT DECISIONS OR PLANNING				9		9	1		1
IMPROPER COMPENSATION FOR WIND CONDITIONS				1		1	9		9
INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING				2		2	1		1
LACK OF FAMILIARITY WITH AIRCRAFT				1		1	2		2
MISMANAGEMENT OF FUEL				1		1	1		1
SELECTED UNSUITABLE TERRAIN				1	1	2	1	1	2
FAILED TO ASSURE THE GEAR WAS DOWN AND LOCKED				1		1	1	1	1
FAILURE TO RELINQUISH CONTROL				1		1	1		1
CONTROL INTERFERENCE	1		1	3		3	4		4
SPONTANEOUS-IMPROPER ACTION				1		1	1		1
MISJUDGED DISTANCE AND SPEED				4	1	2	1	1	2
MISJUDGED DISTANCE AND ALTITUDE				4		4	4		4
MISJUDGED ALTITUDE				6		6	6		6
MISJUDGED CLEARANCE				1		1	1		1
IMPROPER RECOVERY FROM BOUNCED LANDING	1		1	1		1	2		2
MISUSED OR FAILED TO USE FLAPS				2		2	2		2
FAILED TO MAINTAIN DIRECTIONAL CONTROL				1		1	1		1
FAILED TO INITIATE GO-AROUND				11		11	11		11
SUBTOTAL	10	10	10	85	3	88	95	3	98
CHECK PILOT									
FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES, ETC.									
IMPROPER OPERATION OF BRAKES AND/OR FLIGHT CONTROLS		1	1					1	1
IMPROPER OPERATION OF FLIGHT CONTROLS				1		1	1		1
INADEQUATE SUPERVISION OF FLIGHT				1		1	1		1
LACK OF FAMILIARITY WITH AIRCRAFT	1		1	5	2	7	5	3	8
SELECTED UNSUITABLE TERRAIN				1	1	2	1	1	2
MISJUDGED DISTANCE, SPEED, AND ALTITUDE				1		1	1		1
IMPROPER RECOVERY FROM BOUNCED LANDING				1		1	1		1
FAILED TO INITIATE GO-AROUND				1		1	1		1
SUBTOTAL				1		1	1		1
** PERSONNEL **									
	2	2	2	11	3	14	11	5	16
FLIGHT INSTRUCTOR									
INADEQUATE SUPERVISION OF FLIGHT									
INADEQUATE TRAINING OF STUDENT	1	1	1	10	9	19	10	10	20
MAINTENANCE, SERVICING, INSPECTION				4	7	11	5	7	12

CAUSE/FACTOR TABLE

PERSONNEL (CONTINUED)

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS	
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR
IMPROPER MAINTENANCE (MAINTENANCE PERSONNEL)	5		5	48	4	52	53	4
IMPROPER MAINTENANCE (OWNER PERSONNEL)		3	3	4	1	5	4	4
IMPROPERLY SERVICED AIRCRAFT (GROUND CREW)	1		1	1		1	2	
IMPROPERLY SERVICED AIRCRAFT (OWNER-PILOT)				2	3	5	2	3
INADEQUATE INSPECTION OF AIRCRAFT (MAINTENANCE PERSONNEL)	4	1	5	12	2	14	16	3
INADEQUATE INSPECTION OF ACFT (OWNER-PILOT PERSONNEL)				5		5	5	
INADEQUATE MAINTENANCE AND INSPECTION	15	5	20	106	11	117	121	16
OTHER				2	1	3	2	1
OPERATIONAL SUPERVISORY PERSONNEL								
INADEQUATE FLIGHT TRAINING-PROCEDURES		1	1					1
INADEQUATE GROUND TRAINING-PROCEDURES	1		1	1		1	2	
INADEQUATE SUPERVISION OF FLIGHT CREW	1	3	4	1		1	2	3
FAILURE TO PROVIDE ADEQ DIRECTIVES, MANUALS, EQUIPMENT		1	1	2		2	2	1
DEFICIENCY, COMPANY MAINTAINED EQMT, SERV, REGULATIONS				2		2	2	
WEATHER PERSONNEL								
INCORRECT WEATHER FORECAST	1	4	5		3	3	1	7
TRAFFIC CONTROL PERSONNEL								
FAILURE TO ADVISE OF UNSAFE WEATHER CONDITION		1	1					1
FAILURE TO ADVISE OF OTHER TRAFFIC				2	2	4	2	2
INADEQUATE SPACING OF AIRCRAFT				2		2	2	
FAILURE TO PROPERLY IDENTIFY AIRCRAFT ON RADAR	1		1	1	2	3	1	2
OTHER								
AIRPORT SUPERVISORY PERSONNEL								
IMPROPER MAINTENANCE-AIRPORT FACILITIES				1	1	2	1	1
FAILURE TO NOTIFY OF UNSAFE COND/AND OR FAILURE TO MARK	1		1	3	3	6	4	3
IMPROPER/INADEQUATE SNOW REMOVAL				2	2	4	2	2
OTHER				1	1	2	1	1
AIRWAYS FACILITIES PERSONNEL								
PRODUCTION-DESIGN-PERSONNEL								
SUBSTANDARD QUALITY CONTROL	3		3	4	1	5	7	1
INCORRECT FACTORY INSTALLATION	1		1	1		1	2	
POOR/INADEQUATE DESIGN	1		1	7	3	10	8	3
OTHER		2	2	5	1	6	5	3
MISCELLANEOUS-PERSONNEL								
PILOT OF OTHER AIRCRAFT	34	1	35	36	6	42	70	7
GROUND SIGNALMAN	1		1				1	
GROUND CREWMAN	1		1	2	3	5	3	3
PASSENGER	4	1	5	12	4	16	16	5
DRIVER OF VEHICLE				6	5	11	6	5
OTHER	2		2	5	2	7	7	2
DIRECT ENTRIES				2		2	2	
THIRD PILOT								
FLIGHT ENGINEER								
FLIGHT PERSONNEL								
DISPATCHING (AIR CARRIER ONLY)								
SUBTOTAL	78	24	102	292	77	369	370	101
** AIRFRAME **								
WINGS								
SPARS	3	1	4	3		3	6	1
RIBS, STRINGERS, CAP STRIPS				1		1	1	
WING ATTACHMENT FITTINGS, BOLTS	1		1				1	
SKIN AND ATTACHMENTS	2	1	3	1	1	2	3	2
NACELLES, PODS, PYLONS				1		1	1	
OTHER	2		2	1		1	3	
FUSELAGE								
DOORS, DOOR FRAMES				2	6	8	2	6
WINDSHIELDS, WINDOWS, CANOPIES				2	1	3	2	1
SEATS				2	1	3	2	1
WHEEL WELL DOORS		1	1	8	1	9	8	2
OTHER	1		1	1		1	1	
LANDING GEAR								
MAIN GEAR-SHOCK ABSORBING ASSY, STRUTS, ATTACHMENTS, ETC				12	1	13	12	1
NORMAL RETRACTION/EXTENSION ASSEMBLY				27	3	30	27	3
EMERGENCY/EXTENSION ASSEMBLY				12		12	12	
TAILWHEEL ASSEMBLIES				9	6	15	9	6
NOSEWHEEL ASSEMBLIES				8	2	10	8	2
WHEELS, TIRES, AXLES				12	2	14	12	2
SKI ASSEMBLIES				1		1	1	
FLOAT ASSEMBLIES				1		1	1	
BRAKING SYSTEM (NORMAL)		1	1	37	14	51	37	15
BRAKING SYSTEM (EMERGENCY)					1	1	1	1
LANDING GEAR WARNING AND INDICATING COMPONENTS				1	12	13	1	12
GEAR LOCKING MECHANISM				15	1	16	15	1

CAUSE/FACTOR TABLE

AIRFRAME (CONTINUED)

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
SWITCHES, LEVERS, CRANKING MECHANISM, ETC	1		1	2	1	3	3	1	4
NOSEWHEEL STEERING				6	2	8	6	2	8
OTHER				2		2	2		2
FLIGHT CONTROL SURFACES									
ELEVATOR, ASSEMBLY ATTACHMENTS				2		2	2		2
RUDDER, SURFACES ATTACHMENTS	1		1	3		3	4		4
AILERON, SURFACES ATTACHMENTS				1		1	1		1
HORIZONTAL STABILIZER, ATTACHMENTS	2	1	3	1	1	2	3	2	5
VERTICAL STABILIZER, ATTACHMENTS	2		2	2		2	4		4
SPOILERS AND SLOTS-LEADING EDGE FLAPS, SPEED BRAKES				1		1	1		1
OTHER					1	1	1	1	1
SUBTOTAL	15	5	20	176	56	232	191	61	252
** POWERPLANT **									
ENGINE STRUCTURE									
CRANKSHAFT	2		2	12		12	14		14
MASTER AND CONNECTING RODS	1		1	25		25	26		26
CYLINDER ASSEMBLY	2		2	16	1	17	18	1	19
PISTON, PISTON RINGS				17		17	17		17
VALVE ASSEMBLIES	4		4	25		25	29		29
BLOWER, IMPELLER ASSEMBLY				7		7	7		7
MOUNT AND VIBRATION ISOLATORS				1	1	2	1	1	2
OTHER		1	1	9		9	9	1	10
IGNITION SYSTEM									
MAGNETOES				12		12	12		12
SPARK PLUG	1		1	14	3	17	15	3	18
COILS				1		1	1		1
SWITCHES				1		1	1		1
LEADS	1		1	1		1	1		1
FUEL SYSTEM				2		2	3		3
TANKS				2		2	2		2
LINES AND FITTINGS	2		2	16	1	17	18	1	19
SELECTOR VALVES	2		2	5	4	9	7	4	11
FILTERS, STRAINERS, SCREENS				5		5	5		5
CARBURETOR	1		1	24		24	25		25
PUMPS	4		4	10	2	12	14	2	16
FUEL INJECTION SYSTEM	3		3	8		8	11		11
VENTS, DRAINS, TANK CAPS				5		5	5		5
RAM AIR ASSEMBLY				7		7	7		7
OTHER		1	1	5	3	8	5	4	9
LUBRICATING SYSTEM									
LINES, HOSES, FITTINGS	3		3	10		10	13		13
VALVES				4		4	4		4
FILTERS, SCREENS	1		1	1		1	1		1
PUMP-PRESSURE				2		2	2		2
PUMPS-SCAVENGER				1		1	1		1
OIL COOLERS				1		1	1		1
MAGNETIC PLUGS				1		1	1		1
SEALS AND GASKETS				1		1	1		1
OTHER				1		1	1		1
COOLING SYSTEM				7		7	7		7
COWLING									
PROPELLER AND ACCESSORIES					1	1		1	1
BLADES	1		1	6		6	7		7
HUBS	1		1	4		4	5		5
HYDRAULIC PITCH CONTROL MECHANISM				1	1	1	1	1	1
SPINNERS, DOMES				4		4	4		4
GOVERNORS				2		2	2		2
BLADE RETENTION MECHANISM				1		1	1		1
METAL CAP, BLADE LEADING EDGE				1		1	1		1
OTHER	1		1	2		2	3		3
EXHAUST SYSTEM									
MANIFOLDS					1	1		1	1
MUFFLERS	1		1	1		1	2		2
STACKS				2		2	2		2
EXTERNAL SUPERCHARGER				2	1	3	2	1	3
ENGINE ACCESSORIES									
VACUUM PUMPS					1	1		2	2
COWL FLAP ACTUATING ASSEMBLY		1	1						
STARTERS				1		1	1		1
OTHER					1	1		1	1
ENGINE CONTROLS				2		2	2		2
THROTTLE-POWER LEVER ASSEMBLIES				1		1	1		1
MIXTURE CONTROL ASSEMBLIES				21		21	21		21
				5		5	5		5

CAUSE/FACTOR TABLE

POWERPLANT (CONTINUED)

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCID	
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR
INDUCTION AIR, PREHEAT CONTROLS				4		4	4	
POWERPLANT-INSTRUMENTS								
POWER INDICATORS					1	1		1
FUEL PRESSURE GAUGE					1	1		1
FUEL QUANTITY GAUGE		1	1		16	16		17
MISCELLANEOUS								
POWERPLANT FAILURE FOR UNDETERMINED REASONS	24		24	183		183	207	
BIRD INGESTION					1	1		1
FOREIGN OBJECT DAMAGE		1	1	1		1	1	1
DETONATION				1		1		1
OTHER				1		1		1
DIRECT ENTRIES				2		2		2
REDUCTION GEAR ASSEMBLY								
GEARS, REDUCTION				1		1		1
GEARS, ACCESSORY DRIVE				2		2		2
COMPRESSOR ASSEMBLY								
OTHER				1		1		1
COMBUSTION ASSEMBLY								
TURBINE ASSEMBLY								
WHEEL, TURBINE				2		2		2
BLADE, TURBINE WHEEL				2		2		2
ACCESSORY DRIVE ASSEMBLY								
LUBRICATING SYSTEM								
MAGNETIC PLUG				1		1		1
FUEL SYSTEM								
PUMP, FUEL					1	1		1
FUEL CONTROL				3		3		3
OTHER	1		1				1	
SAFETY SYSTEM								
IGNITION SYSTEM								
TORQUEMETER								
AIR BLEED								
EXHAUST SYSTEM								
THRUST REVERSER								
PROPELLER SYSTEM								
CONSTANT SPEED DRIVE								
POWER LEVER								
PROPELLER LEVER								
REVERSE THRUST LEVER								
ENGINE INDICATING EQUIPMENT								
ENGINE INSTALLATION								
SUBTOTAL	56	5	61	515	41	556	571	46
** SYSTEMS **								
ELECTRICAL SYSTEM								
BATTERIES				1		1		1
GENERATORS/ALTERNATORS		2	2	4	2	6	4	4
RECTIFIER				1		1		1
REGULATOR		1	1					1
RELAYS AND WIRING				1		1		1
MOTORS				1	1	2		1
HYDRAULIC SYSTEM								
HYDRAULIC PUMPS				1		1		1
RESERVOIR, LINES, FITTINGS				7		7		7
SEALS				1		1		1
FLIGHT CONTROL SYSTEMS								
AILERON AND AILERON TAB CONTROL SYSTEM	1		1	4		4		5
ELEVATOR AND ELEVATOR TAB CONTROL SYSTEM	1		1	7		7		8
RUDDER AND RUDDER TAB CONTROL SYSTEM	1		1	3		3		4
FLIGHT CONTROL BOOST SYSTEM (HYDRAULIC)				1		1		1
OTHER				1		1		1
ANTI-ICING, DE-ICING SYSTEMS								
CARBURETOR DE-ICING SYSTEM				1		1		1
AIR CONDITION, HEATING AND PRESSURIZATION								
AUTO PILOT								
OTHER				1		1		1
FIRE WARNING SYSTEM								
FIRE EXTINGUISHER SYSTEM								
OXYGEN SYSTEM								
OTHER SYSTEMS								
PITOT SYSTEM					1	1		1
VACUUM SYSTEM	1		1	1		1	1	1
OTHER					1	1		1
DIRECT ENTRIES	1		1					1
SUBTOTAL	5	3	8	35	6	41	40	9

CAUSE/FACTOR TABLE

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
** INSTRUMENTS/EQUIPMENT AND ACCESSORIES **									
FLIGHT AND NAVIGATION INSTRUMENTS									
AIRSPD		1	1		1	1		2	2
DIRECTIONAL GYRO		1	1					1	1
COMPASS					1	1		1	1
COMMUNICATIONS AND NAVIGATION EQUIPMENT									
TRANSMITTERS AND/OR RECEIVERS		1	1		2	2		3	3
IJS RECEIVERS					1	1		1	1
VDR RECEIVERS	1		1	1	3	4	2	3	5
OTHER					3	3		3	3
MISCELLANEOUS EQUIPMENT									
SPRAY, DUSTING EQUIPMENT		1	1	4	4	8	4	5	9
PICK-UP EQUIPMENT					1	1		1	1
GLIDER LAUNCH/TOW EQUIPMENT					1	1		1	1
OTHER				2	1	3	2	1	3
SUBTOTAL	1	4	5	7	18	25	8	22	30
** ROTORCRAFT **									
ROTOR ASSEMBLIES									
MAIN ROTOR BLADES	2		2	1		1	3		3
TAIL ROTOR BLADES	3		3	3	1	4	6	1	7
MAIN ROTOR HEAD ASSEMBLIES				5		5	5		5
BEARINGS				2		2	2		2
OTHER	1		1				1		1
TRANSMISSION ROTOR DRIVE SYSTEM									
FREE WHEEL UNIT									
TAIL ROTOR DRIVE SHAFT ASSEMBLY	1		1	1		1	1		1
TAIL ROTOR GEAR BOX	1		1	4		4	5		5
CLUTCH ASSEMBLY	1		1	4		4	5		5
FLIGHT CONTROL SYSTEMS									
CYCLIC PITCH CONTROL SYSTEM	1		1	3		3	4		4
COLLECTIVE PITCH CONTROL SYSTEM				1		1	1		1
TAIL ROTOR PITCH CONTROL SYSTEM				5		5	5		5
STABILIZING SURFACES-DAMPERS				1		1	1		1
MISCELLANEOUS UNITS AND ASSEMBLIES									
TAIL ROOMS/PYLONS/CONFS	1		1				1		1
SUBTOTAL	10		10	32	1	33	42	1	43
** AIRPORTS/AIRWAYS/FACILITIES **									
AIRPORT FACILITIES									
RUNWAY LIGHTING									
RAMP FACILITIES	1		1		9	9		10	10
TAXIWAY LIGHTING AND MARKING					1	1		1	1
OTHER					3	3		3	3
AIRPORT CONDITIONS	1		1		7	7		8	8
WET RUNWAY									
ICE/SLUSH ON RUNWAY	1		1	7	37	44	7	38	45
SNOW ON RUNWAY				5	14	19	5	14	19
SNOW WINDROWS	1		1	6	45	51	6	46	52
UNMARKED OBSTRUCTIONS				4	49	53	4	49	53
SOFT SHOULDERS (RUNWAY)				2	9	11	2	9	11
ROUGH WATER				2	21	23	2	21	23
HIGH VEGETATION					1	1		1	1
HIDDEN HAZARD	2		2	6	22	28	6	24	30
POORLY MAINTAINED RUNWAY SURFACE				10	6	16	10	6	16
SOFT RUNWAY	1		1	4	18	22	4	19	23
WET RAMP/TAXIWAY				6	21	27	6	21	27
ICE/SLUSH ON RAMP/TAXIWAY					1	1		1	1
SNOW ON RAMP/TAXIWAY					2	2		2	2
SOFT SHOULDERS (RAMP/TAXIWAY)				1	4	5	1	4	5
SOFT TAXIWAY					4	4		4	4
OTHER	1		1		1	1		1	1
AIRWAYS FACILITIES				9	78	87	10	83	93
H FACILITY									
SUBTOTAL	1	12	13	62	354	416	63	366	429
** WEATHER **									
LOW CEILING									
RAIN	1	136	137	1	57	58	2	193	195
FOG	2	44	44		28	28		72	72
		93	95	1	51	52	3	144	147

CAUSE/FACTOR TABLE

WEATHER (CONTINUED)

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOT
SNOW		24	24	1	20	21	1	44	
HAIL		2	2					2	
ICING CONDITIONS—INCLUDES SLEET, FREEZING RAIN, ETC	1	17	18	4	22	26	5	39	
CONDITIONS CONDUCTIVE TO CAB/INDUCTION SYSTEM ICING		5	5		51	51		56	
UNFAVORABLE WIND CONDITIONS		16	16	65	238	303	65	254	3
WIND SHEAR	2		2	6	3	9	8	3	
SUDDEN WINDSHIFT		1	1	10	10	20	10	11	
TURBULENCE IN FLIGHT, CLEAR AIR		3	3	5	8	13	5	11	
TURBULENCE ASSOCIATED WITH CLOUDS AND/OR THUNDERSTORMS	4	14	18	1	6	7	5	20	
DOWNDRAFTS, UPDRAFTS	4	14	18	20	46	66	24	60	
LOCAL WHIRLWIND				4	3	7	4	3	
LIGHTNING STRIKE				1		1	1	1	
SQUALL LINE					1	1		1	
ADVERSE WINDS ALOFT				1	5	6	1	5	
HIGH TEMPERATURE		4	4		15	15		19	
OBSTRUCTIONS TO VISION		3	3		10	10		13	
HIGH DENSITY ALTITUDE	2	24	26		59	59	2	83	
THUNDERSTORM ACTIVITY	3	22	25	2	17	19	5	39	
OTHER		1	1		4	4		5	
SUBTOTAL	19	423	442	122	654	776	141	1077	12
** TERRAIN **									
WET, SOFT GROUND		2	2	39	86	125	39	88	1
SNOW-COVERED		1	1	8	29	37	8	30	
ICY	3	2	5	2	4	6	2	4	
HIGH VEGETATION				30	50	80	33	52	
HIDDEN OBSTRUCTIONS				10	4	14	10	4	
ROUGH/UNEVEN	1	8	9	112	201	313	113	209	
ROUGH WATER		1	1	1	4	5	1	5	
GLASSY WATER				1	5	6	1	5	
HIGH OBSTRUCTIONS	7	136	143	85	391	476	92	527	
LOOSE GRAVEL				4	4	4	4	4	
SANDY		10	10	4	9	13	4	9	
OTHER				20	69	89	20	79	
SUBTOTAL	11	160	171	312	856	1168	323	1016	1
** MISCELLANEOUS **									
SUICIDE	1		1				1		
FOREIGN OBJECT DAMAGE				5		5	5		
SMOKE IN COCKPIT				2		2		2	
FOREIGN MATERIAL AFFECTING NORMAL OPERATIONS	2		2	33		33	35		
UNDETERMINED	39		39	29		29	68		
BIRD COLLISION				3		3	3		
VORTEX TURBULENCE				7	1	8	7	1	
PROP/JET/ROTOR BLAST				5		5	5		
ANIMAL(S) ON RUNWAY/TAXIWAY/RAMP	1		1	5	1	6	6	1	
EVASIVE MANEUVER TO AVOID COLLISION	5		5	44	11	55	49	11	
UNQUALIFIED PERSON OPERATED AIRCRAFT	3	2	5	9	6	15	12	8	
SABOTAGE				3		3	3		
DIRECT ENTRIES	3	1	4	7	2	9	10	3	
SUBTOTAL	54	3	57	150	23	173	204	26	
GRAND TOTAL									
	1350	792	2142	6584	2453	9037	7934	3245	11
** MISCELLANEOUS ACTS, CONDITIONS **									
FIRE OF UNDETERMINED ORIGIN		3	3	1	4	5	1	7	
UNAPPROVED MODIFICATION	1	1	2	1	1	2	2	2	
IMPROPER/INADEQUATE VENTING				1		1	1		
ACTION, LACK OF				1		1	1		
POOR WELD				3		3	3		
PREVIOUS DAMAGE	1		1	11	6	17	12	6	
BRAKES FROZEN				1	1	2	1	1	
LEAK/LEAKAGE	3	1	4	20	4	24	23	5	
LOW FLUID LEVEL				4	1	5	4	1	
CIRCUIT BREAKER POPPED					2	2	2	2	
ARCING				2		2	2		
LOW COMPRESSION				2	1	3	2	1	
RUNWAY CLOSED		1	1	2	6	8	2	7	
DOWNDRAFT		11	11		113	113		124	
CARRON DEPOSITS	1		1	3		3	4		

CAUSE/FACTOR TABLE

MISCELLANEOUS ACTS, CONDITIONS (CONTINUED)

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
	LANDED IN CONSTRUCTION AREA UNDER TORQUED LOOSE, PART/FITTING	1		1	2	2	2	3	2
BENT				8		2	8		2
BINDING						8			8
BUCKLED				2	1	3	2	1	3
BURNED	1	1	2	1	1	2	1	1	2
CHAFFED				1		6	7	1	8
COLLAPSED	1		1	2	1	2	1	1	2
DETERIORATED				7		2	3		3
DISCONNECTED				2		7	7		7
ELONGATED	4		4	4		2	2		2
EXCESSIVE-WEAR/PLAY	3		3	40		4	8		8
ERRATIC				3		40	43		43
FLUTTER	2		2	7	4	3	3		3
FRAYED	1	1	2	3	11	9	4	4	13
GROUNDED	1		1	2	17	20	4	18	22
IMPROPERLY INSTALLED				2		2	3		3
JAMMED				2		2	2		2
NICKED	2		2	6	1	7	6	1	7
OBSTRUCTED				24		24	26		26
OPEN				4	1	5	4		5
OVERHEATED	2		2	1		1	1		1
PRESSURE TOO LOW		1	1	20	1	21	22	1	23
PRESSURE, NONE				1		1	2		2
SCORED				7	2	9	7	2	9
SHEARED				5	1	6	5	1	6
STICKING				4	3	7	4	3	7
STRIPPED	2		2	2		2	2		2
STUCK				6		6	8		8
EXCESSIVE TEMPERATURE				1		1	1		1
TEMPERATURE TOO LOW				1	1	2	1	1	2
VIBRATION, EXCESSIVE		1	1	9	1	10	9	1	10
CONGESTED RAMP/TAXIWAY				2		2	2		2
ICE-INDUCTION				1		1	1		1
FIRE IN WING	1		1	1	4	5	1	4	5
LOAD NOT JETTISONED				2	3	3	1	2	3
FAILED TO USE LANDING LIGHT(S)		1	1	1		1	2		2
INTENTIONAL GROUND-WATER LOOP-SWERVE									
INTENTIONAL WHEELS UP		1	1		22	22		1	1
RAN OFF END OF RUNWAY							22		22
ALTITUDE SETTING-INCORRECT				33	4	37	33	1	1
ANTI-ICING/DEICING EQUIP-IMPROPER OPER. OF/FAILED TO USE	3	1	4	14	7	21	14	4	37
CHECKLIST-FAILED TO USE	4		4	2	142	142	7	7	21
CREW COORDINATION-POOR				2		2	5	1	6
DISREGARD OF GOOD OPERATING PRACTICE				46		46	50		50
IMPROPER EMERGENCY PROCEDURES	1	11	12	1	38	39	1	38	39
FEATHERED WRONG ENGINE	1	1	2	2	2	4	2	2	4
GUST LOCKS ENGAGED				16	12	28	17	23	40
INSTRUCTIONS-MISINTERPRETED				7	6	13	8	7	15
INSTRUCTIONS-MISREAD OR FAILED TO READ				2		2	2		2
SEAT BELT NOT FASTENED				3		3	3		3
NOT ALLIGNED WITH RUNWAY/INTENDED LANDING AREA	4		4	1		1	1		1
UNWARRANTED LOW FLYING	1	3	4		2	2	4	2	6
FAILED TO EXTEND THE LANDING FLAPS	1		1				1	3	4
FAILED TO USE ALL AVAILABLE RUNWAY	40	26	66	16	14	30	17	14	31
LANDED AT WRONG AIRPORT	1	1	2	32	20	52	72	46	118
INATTENTIVE TO FUEL SUPPLY				1	3	4	1	2	3
FLEW INTO BLIND CANYON	1	1	2	2	3	5	2	3	5
PREMATURE FLAP RETRACTION	8		8	3	3	6	3	3	6
POORLY PLANNED APPROACH		2	2	10	10	39	30	11	41
MISCALCULATED FUEL CONSUMPTION	1	1	2	8	3	11	16	5	21
JETTISONED LOAD	4	15	19	1	1	2	2		2
STOLEN OR UNAUTHORIZED USE OF AIRCRAFT				12	74	86	16	89	105
LANDED ON FOAMED RUNWAY				12	4	16	12	4	16
IMPROPERLY SECURED		6	6	1	22	23	1	23	24
BOGUS PART	1		1	18	18	18	24		24
COMMUNICATIONS FAILURE				5	5	10	5	5	10
ELECTRICAL FAILURE				4	32	36	29	4	33
ENGINE LOADED UP				1		1	1		1
FATIGUE FRACTURE	1	1	2	2	2	4	2	2	4
FUEL GRADE-IMPROPER	13		13	3	4	7	3	5	8
HYDRAULIC FAILURE				15	1	16	16	1	17
RPM-UNCONTROLLABLE-OVERSPEED		1	1	34	2	36	47		47
WINDSHIELD, DIRTY, FOGGY, ETC-RESTRICTED VISION	1		1	3	7	10	3	3	6
				2	2	4	7		7
				4	11	15	3	11	15

CAUSE/FACTOR TABLE

MISCELLANEOUS ACTS, CONDITIONS (CONTINUED)(CONTINU)

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
WRONG PART		1	1	6		6	6	1	7
IMPROPER ALIGNMENT/ADJUSTMENT	2	1	3	13	2	15	15	3	18
FAILURE OF TWO OR MORE ENGINES	3	4	7	6	8	14	9	12	21
SEPARATION IN FLIGHT		39	39	2	23	25	2	62	64
FIRE IN CABIN/ COCKPIT/ BAGGAGE COMPARTMENT	1	1	2	2	3	5	3	4	7
FIRE IN ENGINE				9	6	15	9	6	15
FIRE IN BRAKES/ WHEEL ASSEMBLY/ WHEEL WELL	1		1				1		1
CORRODED/CORROSION	2	1	3	3	1	4	5	2	7
INCORRECT TRIM SETTING	1	1	2		4	4	1	5	6
CARGO SHIFTED	1	1	2	1	1	2	2	2	4
CONGESTED TRAFFIC-PATTERN		3	3					3	3
PILOT FATIGUE	1	10	11		15	15	1	25	26
FUEL EXHAUSTION	12		12	216		216	228		228
FUEL CONTAMINATION-EXCLUSIVE OF WATER IN FUEL	1		1	16		16	17		17
PILOT SUFFERED HEART ATTACK	4		4				4		4
ALCOHOLIC IMPAIRMENT OF EFFICIENCY AND JUDGMENT	29	15	44	5	4	9	34	19	53
HYPOXIA	1		1				1		1
CARBON MONOXIDE POISONING		1	1					1	1
ICE-IN FUEL				4	1	5	4	1	5
ICE-ENGINE				2		2	2		2
ICE-CARBURETOR	4		4	45	1	46	49	1	50
ICE-PROPELLER				1		1	1		1
AIRFRAME ICE	10	3	13	13	6	19	23	9	32
ICE-WINDSHIELD	1	1	2	2	5	7	3	6	9
IMPROPERLY LOADED AIRCRAFT-WEIGHT-AND/OR CG	3	14	17	11	7	18	14	21	35
INTERFERENCE WITH FLIGHT CONTROLS	1		1	11	5	16	12	5	17
WHITEDOUT		2	2	4	3	7	4	5	9
SUNGLARE	1	5	6	4	27	31	5	32	37
LACK OF LUBRICATION-SPECIFIC PART, NOT SYSTEM				7		7	7		7
OIL EXHAUSTION-ENGINE LUBRICATION SYSTEM	2		2	24	1	25	26	1	27
SIMULATED CONDITIONS	3	3	6	19	16	35	22	19	41
WATER IN FUEL	2		2	45	1	46	47	1	48
AIRCRAFT CAME TO REST IN WATER		38	38		64	64	102		102
FROZEN, MOISTURE				2	1	3	2	1	3
MISSING		4	4	12	1	13	12	1	13
TOUCH AND GO LANDING					51	51		55	55
HYDROPLANING ON WET RUNWAY					2	3	1	2	3
OVERLOAD FAILURE	16	11	27	1			30	539	569
MATERIAL FAILURE	10	1	11	14	528	542	183	11	194
FUEL STARVATION	14		14	173	10	183	166	1	167
OIL STARVATION				152	1	153	5		5
IMPROPER CLEARANCE-TOLFRANCE	1		1		4	4	8	1	9
FUEL SELECTOR POSITIONED BETWEEN TANKS	3		3	5	1	6			6
	1		1	9		9	10		10

DIRECT ENTRY CAUSES

PILOT-LOSS OF CONTROL, REASON UNKNOWN
 MISC-FUEL EXHAUSTION FOR UNDETERMINED REASON
 PILOT-DID NOT MAINTAIN POS RATE OF CLB DRG GOARND
 PILOT-VISUAL FLT AT ALT INSUF TO CLR OBST TRRN
 PILOT-ATMTD VFR FLT AT ALT INSUF TO CLR OBST TRRN
 PILOT-METRO COND NOT ADEQUATE FOR VIS REFERENCE
 PILOT-ATMTD VFR FLT AT ALT INSUF TO CLR HI OBSTN
 PILOT-DID NOT MAINTAIN POS RATE OF CLB AFTR TKOF
 PILOT-ATMTD VFR FLT AT ALT INSUF TO CLR OBST TRRN
 PILOT-METRO COND NOT ADEQUATE FOR TRRN ASSESSMENT
 PILOT-FELL FM LN DURG MOORING DPNS.
 PILOT-ATMTD TKOF WITH SPOILLERS EXTENDED.
 PERSONNEL-PAX STUMBLD, STRUCK & BROKE FUEL LINE.
 MISC-ONE OF A/S LT BULBS FAILED, UN SEE A/S IND OK.
 MISC-HOSE IGNITED DRG ROTOR ENGAGEMENT.
 MISC - OTHER ACFT BRAKES FAILED
 PILOT-METRO COND NOT ADEQUATE FOR TRRN ASSESSMENT
 MISC-SETTLING WITH POWER
 PILOT-MADE NAVIGATIONAL ERROR
 PILOT-R SEAT RELUCTANT COPE WITH EMGCY FM THIS PSN
 PILOT-INADEVRENTLY SWITCHED IGN OFF DURING FLIGHT
 MISC-WINDSHIELD ICED OVER OR FOGGED UP
 PILOT FAILED TO MAINTAIN ADEQUATE SEPARATION
 PILOT FAILED TO MAINTAIN ADEQUATE SEPARATION
 PWR PLT-PRIOR ENG OVERSPEED
 PWR PLT-ACTUATING LEVER WORKED OFF METERING SHAFT
 PILOT-DELAYED ACRO MANEUVER RECOVERY
 SYSTEMS-GYRO FLT INST FAILED FOR UNKNOWN REASON
 PILOT-FAILED TO MAINTAIN POSITIVE RATE OF CLIMB

CAUSE/FACTOR TABLE

DETAILED CAUSE/FACTOR

FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL

DIRECT ENTRY CAUSES (CONTINUED)

- MISC-AFT CARGO DOOR CAME OPEN DURING TAKEOFF
- PILOT-MISIDENTIFIED POSITION ON AIRPORT
- PERSONNEL - PREHEATING OIL SYSTEM INADEQUATE.
- MISC - JEPPISEN J-AID RECOMMENDED WRONG LANDING RWY
- MISC - JEPPISEN J-AID RECOMMENDED WRONG LANDING RWY
- FLT CONTROL INTERFERENCE BY UNRESTRAINED DOG
- MISC-LOSS OF ROTOR RPM FOR UNDETERMINED REASON
- PILOT - FAILED TO MAINTAIN POSITIVE RATE OF CLIMB

DIRECT ENTRY CAUSES ARE CARRIED UNDER THEIR APPROPRIATE CAUSAL CATEGORIES AND ARE INCLUDED IN THE TOTALS

CAUSE/FACTOR TABLE
 INSTRUCTIONAL
 ACCIDENTS WITH ASSIGNED CAUSES ONLY

INVOLVES 536 TOTAL ACCIDENTS
 INVOLVES 54 FATAL ACCIDENTS

ROAD CAUSE/FACTOR	FATAL ACCIDENTS		NONFATAL ACCIDENTS		ALL ACCIDENTS	
	CAUSE	TOTAL*	CAUSE	TOTAL*	CAUSE	TOTAL*
PILLOT	49 90.74	12 22.22	49 90.74	53 11.00	410 85.06	463 86.38
PERSONNEL	9 16.67	1 1.85	10 18.52	21 4.36	39 8.09	70 13.06
AIRFRAME	1 1.85	1 1.85	2 3.70	5 1.04	5 1.04	7 1.31
LANDING GEAR	.00	.00	.00	2 .41	12 2.49	14 2.61
POWERPLANT	5 9.26	.00	5 9.26	4 .83	55 11.41	64 11.94
SYSTEMS	.00	.00	.00	4 .83	4 .83	4 .75
INSTRUMENTS/EQUIPMENT & ACCESSORIES	.00	.00	.00	2 .41	2 .41	2 .37
ROTORCRAFT	.00	.00	.00	5 1.04	5 1.04	5 .93
AIRPORT/AIRWAYS/FACILITIES	.00	.00	.00	10 2.07	49 10.17	55 10.26
WEATHER	1 1.85	6 11.11	7 12.96	13 2.70	62 12.86	81 15.11
TERRAIN	.00	9 16.67	9 16.67	33 6.85	75 15.56	117 21.83
MISCELLANEOUS	1 1.85	.00	1 1.85	7 1.45	8 1.66	9 1.68
UNDETERMINED	1 1.85	.00	1 1.85	2 .41	2 .41	3 .56

THE FIGURES OPPOSITE EACH CAUSAL CATEGORY REPRESENT THE NUMBER AND PERCENT OF ACCIDENTS IN WHICH THAT PARTICULAR CAUSAL CATEGORY WAS ASSIGNED

* IF AN ACCIDENT INCLUDES BOTH A CAUSE AND RELATED FACTOR IN THE SAME CAUSAL CATEGORY, THE ACCIDENT IS REPRESENTED ONCE UNDER THE TOTAL FOR THAT CATEGORY

CAUSE/FACTOR TABLE
 PLEASURE
 ACCIDENTS WITH ASSIGNED CAUSES ONLY

INVOLVES 2173 TOTAL ACCIDENTS
 INVOLVES 399 FATAL ACCIDENTS

BROAD CAUSE/FACTOR	FATAL ACCIDENTS		NONFATAL ACCIDENTS		ALL ACCIDENTS	
	CAUSE	FACTOR	CAUSE	FACTOR	CAUSE	FACTOR
PILOT	361 90.48	79 19.80	365 91.48	165 9.30	1876 86.33	244 11.23
PERSONNEL	32 8.02	10 2.51	41 10.28	29 1.63	144 6.63	39 1.79
AIRFRAME	10 2.51	4 1.00	14 3.51	7 .39	18 .83	11 .51
LANDING GEAR	.00	1 .25	1 .25	21 1.18	60 2.76	22 1.01
POWERPLANT	30 7.52	2 .50	32 8.02	18 1.01	253 11.64	20 .92
SYSTEMS	4 1.00	2 .50	6 1.50	5 .28	19 .83	7 .32
INSTRUMENTS/EQUIPMENT & ACCESSORIES	.00	2 .50	2 .50	8 .45	2 .09	10 .46
ROTORCRAFT	1 .25	.00	1 .25	7 .39	8 .37	8 .37
AIRPORT/AIRWAYS/FACILITIES	.00	3 .75	3 .75	181 10.20	38 1.75	184 8.47
WEATHER	10 2.51	156 39.10	163 40.85	60 3.38	70 3.22	489 22.50
TERRAIN	5 1.25	105 26.32	109 27.32	424 23.90	159 7.32	529 24.34
MISCELLANEOUS	7 1.75	2 .50	9 2.26	15 .85	63 2.90	17 .78
UNDETERMINED	19 4.76	.00	19 4.76	8 .45	27 1.24	27 1.24

THE FIGURES OPPOSITE EACH CAUSAL CATEGORY REPRESENT THE NUMBER AND PERCENT OF ACCIDENTS IN WHICH THAT PARTICULAR CAUSAL CATEGORY WAS ASSIGNED

* IF AN ACCIDENT INCLUDES BOTH A CAUSE AND RELATED FACTOR IN THE SAME CAUSAL CATEGORY, THE ACCIDENT IS REPRESENTED ONCE UNDER THE TOTAL FOR THAT CATEGORY

CAUSE/FACTOR TABLE

BUSINESS ACCIDENTS WITH ASSIGNED CAUSES ONLY

INVOLVES 245 TOTAL ACCIDENTS
 INVOLVES 58 FATAL ACCIDENTS

BROAD CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
PILOT	52 89.66	11 18.97	52 89.66	185 81.50	17 7.49	186 81.94	237 83.16	28 9.82	238 83.51
PERSONNEL	5 8.62	2 3.45	6 10.34	18 7.93	3 1.32	20 8.81	23 8.07	5 1.75	26 9.12
AIRFRAME	.00	.00	.00	.88	.00	.88	.70	.00	.70
LANDING GEAR	.00	.00	.00	15 6.61	9 3.96	23 10.13	15 5.26	9 3.16	23 8.07
POWERPLANT	7 12.07	1 1.72	7 12.07	32 14.10	2 .88	34 14.98	39 13.68	3 1.05	41 14.39
SYSTEMS	2 3.45	.00	2 3.45	2 .88	1 .44	3 1.32	4 1.40	1 .35	5 1.75
INSTRUMENTS/EQUIPMENT & ACCESSORIES	.00	1 1.72	1 1.72	.00	.00	.00	.00	.00	.35
ROTORCRAFT	1 1.72	.00	1 1.72	1 .44	.00	1 .44	2 .70	.00	2 .70
AIRPORT/AIRWAYS/FACILITIES	.00	4 6.90	4 6.90	3 1.32	23 10.13	25 11.01	3 1.05	27 9.47	29 10.18
WEATHER	2 3.45	30 51.72	31 53.45	10 4.41	36 15.86	45 19.82	12 4.21	66 23.16	76 26.67
TERRAIN	.00	18 31.03	18 31.03	18 7.93	45 19.82	63 27.75	18 6.32	63 22.11	81 28.42
MISCELLANEOUS	3 5.17	1 1.72	4 6.90	4 1.76	1 .44	5 2.20	7 2.46	2 .70	9 3.16
UNDETERMINED	2 3.45	.00	2 3.45	2 .88	.00	2 .88	4 1.40	.00	4 1.40

THE FIGURES OPPOSITE EACH CAUSAL CATEGORY REPRESENT THE NUMBER AND PERCENT OF ACCIDENTS IN WHICH THAT PARTICULAR CAUSAL CATEGORY WAS ASSIGNED

CAUSE/FACTOR TABLE
CORPORATE/EXECUTIVE
ACCIDENTS WITH ASSIGNED CAUSES ONLY

INVOLVES 56 TOTAL ACCIDENTS
INVOLVES 13 FATAL ACCIDENTS

BROAD CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
PILOT	8	2	8	27	2	27	35	4	35
	61.54	15.38	61.54	62.79	4.65	62.79	62.50	7.14	62.50
PERSONNEL	3		3	11	1	11	14	1	14
	23.08	.00	23.08	25.58	2.33	25.58	25.00	1.79	25.00
AIRFRAME	.00	.00	.00	3	1	4	3	1	4
	.00	.00	.00	6.98	2.33	9.30	5.36	1.79	7.14
LANDING GEAR	.00	.00	.00	6	1	7	6	1	7
	.00	.00	.00	13.95	2.33	16.28	10.71	1.79	12.50
POWERPLANT	3		3	8	2	9	11	2	12
	23.08	.00	23.08	18.60	4.65	20.93	19.64	3.57	21.43
SYSTEMS	.00	.00	.00	1		1	1		1
	.00	.00	.00	2.33	.00	2.33	1.79	.00	1.79
INSTRUMENTS/EQUIPMENT & ACCESSORIES	.00	.00	.00	.00	.00	.00	.00	.00	.00
	.00	.00	.00	.00	.00	.00	.00	.00	.00
ROTORCRAFT	.00	.00	.00	.00	.00	.00	.00	.00	.00
	.00	.00	.00	.00	.00	.00	.00	.00	.00
AIRPORT/AIRWAYS/FACILITIES	1		1		5	5	1	5	6
	7.69	.00	7.69	.00	11.63	11.63	1.79	8.93	10.71
WEATHER	.00	6	6	2	8	9	2	14	15
	.00	46.15	46.15	4.65	18.60	20.93	3.57	25.00	26.79
TERRAIN	.00	.00	.00	1	5	6	1	5	6
	.00	.00	.00	2.33	11.63	13.95	1.79	8.93	10.71
MISCELLANEOUS	.00	.00	.00	4		4	4		4
	.00	.00	.00	9.30	.00	9.30	7.14	.00	7.14
UNDETERMINED	2		2	1		1	3		3
	15.38	.00	15.38	2.33	.00	2.33	5.36	.00	5.36

THE FIGURES OPPOSITE EACH CAUSAL CATEGORY REPRESENT THE NUMBER AND PERCENT OF ACCIDENTS IN WHICH THAT PARTICULAR CAUSAL CATEGORY WAS ASSIGNED

* IF AN ACCIDENT INCLUDES BOTH A CAUSE AND RELATED FACTOR IN THE SAME CAUSAL CATEGORY, THE ACCIDENT IS REPRESENTED ONCE UNDER THE TOTAL FOR THAT CATEGORY

CAUSE/FACTOR TABLE
 AERIAL APPLICATION AND FIRE CONTROL (INCLUDES ASSOCIATED ACTIVITIES)
 ACCIDENTS WITH ASSIGNED CAUSES ONLY

INVOLVES 431 TOTAL ACCIDENTS
 INVOLVES 37 FATAL ACCIDENTS

BROAD CAUSE/FACTOR	FATAL ACCIDENTS		NONFATAL ACCIDENTS		ALL ACCIDENTS	
	CAUSE	FACTOR	CAUSE	FACTOR	CAUSE	FACTOR
PILOT	30	6	274	21	304	27
	81.08	16.22	69.54	5.33	70.53	6.26
PERSONNEL	5	2	28	6	33	8
	13.51	5.41	7.11	1.52	7.66	1.86
AIRFRAME	.00	.00	3	.00	3	.00
	.00	.00	.76	.00	.76	.00
LANDING GEAR	.00	.00	11	1	12	1
	.00	.00	2.79	.25	3.05	.23
POWERPLANT	1	.00	94	7	95	7
	2.70	.00	23.86	1.78	25.63	1.62
SYSTEMS	.00	.00	1	.00	1	.00
	.00	.00	.25	.00	.25	.23
INSTRUMENTS/EQUIPMENT & ACCESSORIES	.00	1	4	5	4	6
	.00	2.70	1.07	1.27	.93	1.39
ROTORCRAFT	.00	.00	7	2	7	2
	.00	.00	1.78	.51	1.62	.46
AIRPORT/AIRWAYS/FACILITIES	.00	.00	4	9	4	9
	.00	.00	1.02	2.28	.93	2.09
WEATHER	.00	4	6	37	6	41
	.00	10.81	1.52	9.39	1.39	9.51
TERRAIN	.00	6	43	154	43	160
	.00	16.22	10.91	39.09	9.98	37.12
MISCELLANEOUS	.00	.00	23	2	23	2
	.00	.00	5.84	.51	5.34	.46
UNDETERMINED	5	.00	5	.00	10	.00
	13.51	.00	1.27	.00	2.32	.00

THE FIGURES OPPOSITE EACH CAUSAL CATEGORY REPRESENT THE NUMBER AND PERCENT OF ACCIDENTS IN WHICH THAT PARTICULAR CAUSAL CATEGORY WAS ASSIGNED

* IF AN ACCIDENT INCLUDES BOTH A CAUSE AND RELATED FACTOR IN THE SAME CAUSAL CATEGORY, THE ACCIDENT IS REPRESENTED ONCE UNDER THE TOTAL FOR THAT CATEGORY

CAUSE/FACTOR TABLE

AIR TAXI
ACCIDENTS WITH ASSIGNED CAUSES ONLY

INVOLVES 182 TOTAL ACCIDENTS
INVOLVES 44 FATAL ACCIDENTS

BROAD CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL#	CAUSE	FACTOR	TOTAL#	CAUSE	FACTOR	TOTAL#
PILOT	32 72.73	7 15.91	34 77.27	105 76.09	24 17.39	109 78.99	137 75.27	31 17.03	143 78.57
PERSONNEL	6 13.64	6 13.64	6 13.64	22 15.94	5 3.62	26 18.84	28 15.38	5 2.75	32 17.58
AIRFRAME	1 2.27	1 2.27	1 2.27	2 1.45	1 .72	3 2.17	3 1.65	1 .55	4 2.20
LANDING GEAR	.00	.00	.00	10 7.25	3 2.17	13 9.42	10 5.49	3 1.65	13 7.14
POWERPLANT	3 6.82	1 2.27	4 9.09	23 16.67	2 1.45	25 18.12	26 14.29	3 1.65	29 15.93
SYSTEMS	.00	1 2.27	1 2.27	2 1.45	.00	2 1.45	2 1.10	1 .55	3 1.65
INSTRUMENTS/EQUIPMENT & ACCESSORIES	.00	.00	.00	.00	.00	.00	.00	.00	.00
ROTORCRAFT	3 6.82	.00	3 6.82	2 1.45	.00	2 1.45	5 2.75	.00	5 2.75
AIRPORT/AIRWAYS/FACILITIES	.00	2 4.55	2 4.55	1 .72	18 13.04	19 13.77	1 .55	20 10.99	21 11.54
WEATHER	3 6.82	19 43.18	22 50.00	3 2.17	29 21.01	32 23.19	6 3.30	48 26.37	54 29.67
TERRAIN	2 4.55	9 20.45	11 25.00	13 9.42	29 21.01	41 29.71	15 8.24	38 20.88	52 28.57
MISCELLANEOUS	2 4.55	.00	2 4.55	6 4.35	.00	6 4.35	8 4.40	.00	8 4.40
UNDETERMINED	8 18.18	.00	8 18.18	1 .72	.00	1 .72	9 4.95	.00	9 4.95

THE FIGURES OPPOSITE EACH CAUSAL CATEGORY REPRESENT THE NUMBER AND PERCENT OF ACCIDENTS IN WHICH THAT PARTICULAR CAUSAL CATEGORY WAS ASSIGNED
* IF AN ACCIDENT INCLUDES BOTH A CAUSE AND RELATED FACTOR IN THE SAME CAUSAL CATEGORY, THE ACCIDENT IS REPRESENTED ONCE UNDER THE TOTAL FOR THAT CATEGORY

ANALYTIC TABLE

KIND OF FLYING BY INJURY INDEX
ALL OPERATIONS

KIND OF FLYING

FATAL
SERIOUS
MINOR
NONE

RECORDS ACCIDENTS PE

<u>KIND OF FLYING</u>	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PE
<u>INSTRUCTIONAL</u>							
DUAL	29	12	28	137	206	206	4.86
SOLO	12	11	17	136	176	176	4.15
CHECK	3	2	4	9	18	18	.42
TRAINING	13	8	17	105	143	142	3.37
<u>NONCOMMERCIAL</u>							
PLEASURE	423	231	303	1254	2211	2203	52.13
PRACTICE	16	8	18	108	150	149	3.54
BUSINESS	61	24	37	172	294	294	6.93
CORPORATE/EXECUTIVE	13	7	4	33	57	57	1.34
AERIAL SURVEY		4	1	5	10	10	.24
COMPANY FLIGHT							
OTHER	5	3		1	9	9	.21
<u>COMMERCIAL</u>							
AERIAL APPLICATION	28	35	40	169	272	270	6.41
CROP CONTROL RELATED FLIGHT	9	13	24	113	159	159	3.75
FIRE CONTROL	3				3	3	.07
FIRE CONTROL RELATED FLIGHT	1				1	1	.02
AERIAL MAPPING/PHOTOGRAPHY	3	1	2	4	10	10	.24
AERIAL ADVERTISING		1	3	3	7	7	.17
POWER AND PIPELINE PATROL	5	1	1	4	11	11	.26
FISH SPOTTING	1		1	3	5	5	.12
AIR TAXI-PASSENGER OPERATIONS	33	18	14	75	140	138	3.30
AIR TAXI-CARGO OPERATIONS	13	2	7	28	50	50	1.18
CONSTRUCTION WORK	1	5	1	2	9	9	.21
SCHEDULED PASSENGER SERVICE					1	1	.02
SCHEDULED CARGO SERVICE	1						
INTRA-STATE CHARTER PASSG.							
INTRA-STATE CHARTER CARGO.							
MILITARY CONTRACT-PASSENGER							
MILITARY CONTRACT-CARGO							
CHARTER CARGO-DOMESTIC				3	3	3	.07
CHARTER PASSG-DOMESTIC	2		3	3	8	8	.19
CHARTER-CARGO-INTERNATIONAL							
CHARTER-PASSG-INTERNATIONAL							
OTHER	4	2	6	5	17	17	.40
UNKNOWN/NOT REPORTED							

ANALYTIC TABLE

KIND OF FLYING

MISCELLANEOUS

KIND OF FLYING	ANALYTIC TABLE				RECORDS	ACCIDENTS	PERCENT
	FATAL	SERIOUS	MINOR	NONE			
EXPERIMENTATION	1			1			
TEST	5	6	5	34	2	2	.05
DEMONSTRATION	1	4	4	10	50	50	1.18
FERRY	9	11	14	67	19	19	.45
SEARCH AND RESCUE	2	1	1	3	101	101	2.38
AIR SHOW/AIR RACING	8	2	3	5	7	7	.17
PARACHUTE JUMP	1	1	1	13	18	17	.42
PARACHUTE JUMP-AIR SHOW					16	16	.38
TOWING GLIDERS	1	2	1	3			
SEEDING CLOUDS					7	7	.17
HUNTING	5	1	3	4			
POLICE PATROL		1		3	13	13	.31
HIGHWAY TRAFFIC ADVISORY					4	4	.09
ALL OTHER PUBLIC FLYING	3	4	3	5			
OTHER	1	2	1	3	15	15	.35
UNKNOWN/NOT REPORTED	2	1		9	7	6	.17
					12	12	.28
RECORDS	718	424	567	2532			
ACCIDENTS	695	422	565	2511	4241		
PERCENTS	16.9	10.0	13.4	59.7		4193	

ANALYTIC TABLE

KIND OF FLYING BY AIRCRAFT DAMAGE
ALL OPERATIONS

KIND OF FLYING

DESTROYED
SUBSTANTIAL
MINOR
NONE

RECORDS ACCIDENTS PERCENT

INSTRUCTIONAL

KIND OF FLYING	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
DUAL	44	159	1	2	206	206	4.86
SOLO	27	148	1		176	176	4.15
CHECK	3	15			18	18	.42
TRAINING	18	125			143	142	3.37
<u>NONCOMMERCIAL</u>					2211	2203	52.13
PLEASURE	587	1610	6	8	150	149	3.54
PRACTICE	26	123	1		294	294	6.93
BUSINESS	87	202	1	4	57	57	1.34
CORPORATE/EXECUTIVE	17	38	2		10	10	.24
AERIAL SURVEY	2	8					
COMPANY FLIGHT					9	9	.21
OTHER	5	4					
<u>COMMERCIAL</u>					272	270	6.41
AERIAL APPLICATION	98	171	1	2	159	159	3.75
CROP CONTROL RELATED FLIGHT	30	128	1		3	3	.07
FIRE CONTROL	3				1	1	.02
FIRE CONTROL RELATED FLIGHT		1			10	10	.24
AERIAL MAPPING/PHOTOGRAPHY	4	5		1	7	7	.17
AERIAL ADVERTISING	1	6			11	11	.26
POWER AND PIPELINE PATROL	5	6			5	5	.12
FISH SPOTTING	2	3			140	138	3.30
AIR TAXI-PASSENGER OPERATIONS	36	102		2	50	50	1.18
AIR TAXI-CARGO OPERATIONS	16	34			9	9	.21
CONSTRUCTION WORK	3	6					
SCHEDULED PASSENGER SERVICE					1	1	.02
SCHEDULED CARGO SERVICE	1						
INTRA-STATE CHARTER PASSG.							
INTRA-STATE CHARTER CARGO.							
MILITARY CONTRACT-PASSENGER							
MILITARY CONTRACT-CARGO					3	3	.07
CHARTER CARGO-DOMESTIC			3		8	8	.19
CHARTER PASSG-DOMESTIC	2	6					
CHARTER-CARGO-INTERNATIONAL							
CHARTER-PASSG-INTERNATIONAL					17	17	.40
OTHER	7	10					
UNKNOWN/NOT REPORTED							

ANALYTIC TABLE

KIND OF FLYING

MISCELLANEOUS

KIND OF FLYING	DAMAGE TO AIRCRAFT				RECORDS	ACCIDENTS	PERCENT
	DESTROYED	SUBSTANTIAL	MINOR	NONE			
EXPERIMENTATION	1	1			2	2	.05
TEST	12	38			50	50	1.18
DEMONSTRATION	2	17			19	19	.45
FERRY	23	78			101	101	2.38
SEARCH AND RESCUE	3	4			7	7	.17
AIR SHOW/AIR RACING	7	11			18	17	.42
PARACHUTE JUMP	2	14			16	16	.38
PARACHUTE JUMP-AIR SHOW							
TOWING GLIDERS	2	5			7	7	.17
SEEDING CLOUDS							
HUNTING	5	7	1		13	13	.31
POLICE PATROL		4			4	4	.09
HIGHWAY TRAFFIC ADVISORY							
ALL OTHER PUBLIC FLYING	7	8			15	15	.35
OTHER	1	6			7	6	.17
UNKNDWN/NOT REPORTED	6	6			12	12	.28
RECORDS	1095	3112	14	20	4241		
ACCIDENTS	1080	3097	14	20		4193	
PERCENTS	25.8	73.4	.3	.5			

INJURIES, ACCIDENTS
U.S. GENERAL AVIATION
(ALL OPERATIONS)

	INJURIES					TOTAL
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	
PILOT	648	388	517	2688		4241
COPILOT	36	16	12	59		123
DUAL STUDENT	30	8	24	150		212
CHECK PILOT	2	2	3	9		16
FLIGHT ENGINEER		1	1	1		3
NAVIGATOR				3		3
CABIN ATTENDANT		1		2		3
EXTRA CREW	6	3	2	13		24
PASSENGERS	589	340	460	2246	1	3636
TOTAL	1311	759	1019	5171	1	8261
OTHER AIRCRAFT						
OTHER GROUND	9	12	26	49		96
GRAND TOTAL	1320	771	1045	5220	1	8357

INVOLVES 4193 TOTAL ACCIDENTS
INVOLVES 695 FATAL ACCIDENTS

INJURIES, ACCIDENTS
INSTRUCTIONAL (DUAL)
ALL OPERATIONS

INJURIES

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	25	13	23	145		206
COPILOT	1			1		2
DUAL STUDENT	27	8	20	143		198
CHECK PILOT			1	1		2
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT				1		1
EXTRA CREW	4	3	2	20		29
PASSENGERS						
TOTAL	57	24	46	311		438
					ABOARD	
* OTHER AIRCRAFT	11		7	6		24
OTHER GROUND		2				2
GRAND TOTAL	68	26	53	317		464

INVOLVES 206 TOTAL ACCIDENTS
INVOLVES 29 FATAL ACCIDENTS

* INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF THE TOTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

INJURIES, ACCIDENTS
INSTRUCTIONAL (SOLO-SUPERVISED)
ALL OPERATIONS

	INJURIES					TOTAL
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	
PILOT	12	11	17	136		176
COPILOT						
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS				1		1
TOTAL	12	11	17	137	ABOARD	177
* OTHER AIRCRAFT	4			4		8
OTHER GROUND						
GRAND TOTAL	16	11	17	141		185

INVOLVES 176 TOTAL ACCIDENTS
INVOLVES 12 FATAL ACCIDENTS

* INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN

OF THE TOTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

INJURIES, ACCIDENTS
INSTRUCTIONAL (CHECK)
ALL OPERATIONS

	INJURIES					TOTAL
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	
PILOT	3	1	4	10		18
COPILOT						
DUAL STUDENT	1		1	2		4
CHECK PILOT	2	2	1	7		12
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS				4		4
TOTAL	6	3	6	23		38

TOTAL

ABOARD

38

OTHER AIRCRAFT
OTHER GROUND

GRAND TOTAL

23

6

3

6

23

38

INVOLVES 18 TOTAL ACCIDENTS
INVOLVES 3 FATAL ACCIDENTS

INJURIES, ACCIDENTS
INSTRUCTIONAL (TRAINING)
ALL OPERATIONS

	INJURIES					TOTAL
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	
PILOT	12	7	18	106		143
COPILOT						
DUAL STUDENT				1		1
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT		1				1
EXTRA CREW				2		2
PASSENGERS						
TOTAL	12	8	18	109		147
						ABOARD
* OTHER AIRCRAFT	1	1		3		5
OTHER GROUND		1	4			5
GRAND TOTAL	13	10	22	112		157

INVOLVES 142 TOTAL ACCIDENTS
INVOLVES 13 FATAL ACCIDENTS

* INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART

AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF THE TOTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

INJURIES, ACCIDENTS
NONCOMMERCIAL (PLEASURE/PERSONAL TRANSPORTATION)
ALL OPERATIONS

	INJURIES					TOTAL
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	
PILOT	386	203	279	1343		2211
COPILOT	19	8	5	18		50
DUAL STUDENT	1		1	2		4
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR				3		3
CABIN ATTENDANT	1			1		2
EXTRA CREW						
PASSENGERS	419	232	315	1578	1	2545
TOTAL	826	443	600	2945	1	4815
* OTHER AIRCRAFT	15		8	26		49
OTHER GROUND		5	14	3		22
GRAND TOTAL	841	448	622	2974	1	4886

INVOLVES 2203 TOTAL ACCIDENTS
INVOLVES 419 FATAL ACCIDENTS

* INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF THE TOTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

INJURIES, ACCIDENTS
NONCOMMERCIAL (PRACTICE)
ALL OPERATIONS

	INJURIES					TOTAL
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	
PILOT	16	8	15	111		150
COPILOT	1			6		7
DUAL STUDENT			2	1		3
CHECK PILOT			1			1
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS	1	1	8	28		38
TOTAL	18	9	26	146	ABOARD	199
* OTHER AIRCRAFT				6		6
OTHER GROUND			2			2
GRAND TOTAL	18	9	28	152		207

INVOLVES 149 TOTAL ACCIDENTS
INVOLVES 16 FATAL ACCIDENTS

* INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN

AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF THE TOTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

INJURIES, ACCIDENTS
NONCOMMERCIAL (BUSINESS-NONPROFESSIONAL PILOT)
ALL OPERATIONS

	INJURIES					TOTAL
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	
PILOT	54	25	31	184		294
COPILOT	3	1		2		6
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS	43	29	24	176		272
TOTAL	100	55	55	362		572
						ABOARD
* OTHER AIRCRAFT			1	7		8
OTHER GROUND	1			45		46
GRAND TOTAL	101	55	56	414		626

INVOLVES 294 TOTAL ACCIDENTS
INVOLVES 61 FATAL ACCIDENTS

* INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF THE TOTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

INJURIES, ACCIDENTS
NONCOMMERCIAL (CORPORATE/EXECUTIVE-PROFESSIONAL PILOT)
ALL OPERATIONS

	INJURIES				TOTAL
	FATAL	SERIOUS	MINOR	NONE	
PILOT	11	8	1	37	57
COPILOT	4	2	3	8	17
DUAL STUDENT	1				1
CHECK PILOT					
FLIGHT ENGINEER		1			1
NAVIGATOR				1	1
CABIN ATTENDANT					
EXTRA CREW					
PASSENGERS	11	11	3	73	98
TOTAL	27	21	8	119	175
					ABOARD
* OTHER AIRCRAFT	3			1	4
OTHER GROUND	1		6		7
GRAND TOTAL	31	21	14	120	186

INVOLVES 57 TOTAL ACCIDENTS
INVOLVES 13 FATAL ACCIDENTS

* INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF OTHER AIRCRAFT

INJURIES+ACCIDENTS
NONCOMMERCIAL(AERIAL SURVEY)
ALL OPERATIONS

	INJURIES					TOTAL
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	
PILOT		3	2			5
COPILOT						
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS		3	1	5		9
TOTAL		6	3	10		19
ABDARD						
OTHER AIRCRAFT						
OTHER GROUND						
GRAND TOTAL		6	3	10		19

INVOLVES 10 TOTAL ACCIDENTS
INVOLVES FATAL ACCIDENTS

INJURIES, ACCIDENTS
NONCOMMERCIAL (OTHER)
ALL OPERATIONS

INJURIES

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	5	2		2		9
COPILOT		1	1	1		3
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER		1				1
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS	2					2
TOTAL	7	4	1	3		15
					ABOARD	
OTHER AIRCRAFT						
OTHER GROUND						
GRAND TOTAL	7	4	1	3		15

INVOLVES 9 TOTAL ACCIDENTS
INVOLVES 5 FATAL ACCIDENTS

INJURIES+ACCIDENTS
 COMMERCIAL (AERIAL APPLICATION-CROP CONTROL)
 ALL OPERATIONS

	INJURIES					TOTAL
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	
PILOT	24	35	40	173		272
COPILLOT				2		2
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS	1					1
TOTAL	25	35	40	175		275
ABOARD						
OTHER AIRCRAFT						
OTHER GROUND	2			1		3
GRAND TOTAL	27	35	40	176		278

INVOLVES 270 TOTAL ACCIDENTS
 INVOLVES 26 FATAL ACCIDENTS

INJURIES, ACCIDENTS
 COMMERCIAL (ASSOCIATED CROP CONTROL-TO OR FROM)
 ALL OPERATIONS

	INJURIES				TOTAL
	FATAL	SERIOUS	MINOR	NONE	
PILOT	9	12	25	113	159
COPILOT					
DUAL STUDENT					
CHECK PILOT					
FLIGHT ENGINEER					
NAVIGATOR					
CABIN ATTENDANT					
EXTRA CREW					
PASSENGERS	1				1
TOTAL	10	12	25	113	160
					ABOARD
* OTHER AIRCRAFT		1		3	4
OTHER GROUND					
GRAND TOTAL	10	13	25	116	164

INVOLVES 159 TOTAL ACCIDENTS
 INVOLVES 9 FATAL ACCIDENTS

* INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF COLLISIONS INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

... AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF THE TOTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

INJURIES, ACCIDENTS
COMMERCIAL (FIRE CONTROL)
ALL OPERATIONS

	INJURIES				TOTAL
	FATAL	SERIOUS	MINOR	NONE	
PILOT	3				3
COPILOT					
DUAL STUDENT					
CHECK PILOT					
FLIGHT ENGINEER					
NAVIGATOR					
CABIN ATTENDANT					
EXTRA CREW					
PASSENGERS					
TOTAL	3				3
OTHER AIRCRAFT					
OTHER GROUND					
GRAND TOTAL	3				3

ABOARD

INVOLVES 3 TOTAL ACCIDENTS
INVOLVES 3 FATAL ACCIDENTS

INJURIES, ACCIDENTS
 COMMERCIAL (ASSOCIATED FIRE CONTROL-TO OR FROM)
 ALL OPERATIONS

	INJURIES				TOTAL
	FATAL	SERIOUS	MINOR	NONE	
PILOT	1				1
COPILOT					
DUAL STUDENT					
CHECK PILOT					
FLIGHT ENGINEER					
NAVIGATOR					
CABIN ATTENDANT					
EXTRA CREW					
PASSENGERS	2	2			4
TOTAL	3	2			5
				ABOARD	
OTHER AIRCRAFT					
OTHER GROUND					
GRAND TOTAL	3	2			5

INVOLVES 1 TOTAL ACCIDENTS
 INVOLVES 1 FATAL ACCIDENTS

INJURIES, ACCIDENTS
 COMMERCIAL (AERIAL MAPPING/PHOTOGRAPHY)
 ALL OPERATIONS

	INJURIES				TOTAL
	FATAL	SERIOUS	MINOR	NONE	
PILOT	1	1	1	7	10
COPILOT					
DUAL STUDENT					
CHECK PILOT					
FLIGHT ENGINEER					
NAVIGATOR					
CABIN ATTENDANT				1	1
EXTRA CREW			1	7	11
PASSENGERS	3				
TOTAL	4	1	2	15	22
OTHER AIRCRAFT					
OTHER GROUND					
GRAND TOTAL	4	1	2	15	22

INVOLVES 10 TOTAL ACCIDENTS
 INVOLVES 3 FATAL ACCIDENTS

INJURIES, ACCIDENTS
COMMERCIAL (AERIAL ADVERTISING)
ALL OPERATIONS

	INJURIES				TOTAL
	FATAL	SERIOUS	MINOR	NONE	
		1	3	3	7
				UNKNOWN	

PILOT
COPILOT
DUAL STUDENT
CHECK PILOT
FLIGHT ENGINEER
NAVIGATOR
CABIN ATTENDANT
EXTRA CREW
PASSENGERS

1
1
8

TOTAL

ABOARD

OTHER AIRCRAFT
OTHER GROUND

8

GRAND TOTAL

1 3 4

INVOLVES 7 TOTAL ACCIDENTS
INVOLVES 1 FATAL ACCIDENTS

INJURIES-ACCIDENTS
 COMMERCIAL (POWER AND PIPELINE PATROL)
 ALL OPERATIONS

INJURIES

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	5	1	1	4		11
COPILOT				1		1
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW		4				5
PASSENGERS				1		1
TOTAL	5	5	1	6		17
					ABOARD	
* OTHER AIRCRAFT	2					2
OTHER GROUND						
GRAND TOTAL	7	5	1	6		19

INVOLVES 11 TOTAL ACCIDENTS
 INVOLVES 5 FATAL ACCIDENTS

* INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF THE TOTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

INJURIES, ACCIDENTS
COMMERCIAL (FISH SPOTTING)
ALL OPERATIONS

INJURIES

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	1		1	3		5

COPILOT
 DUAL STUDENT
 CHECK PILOT
 FLIGHT ENGINEER
 NAVIGATOR
 CABIN ATTENDANT
 EXTRA CREW
 PASSENGERS

ABOARD 5

TOTAL 1 1 3

TOTAL 1

OTHER AIRCRAFT
OTHER GROUND

5

1 1 3

GRAND TOTAL 1

INJURIES, ACCIDENTS
 COMMERCIAL (AIR TAXI-PASSENGER)
 ALL OPERATIONS

INJURIES

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	30	11	11	88		140
COPILOT	3	2		7		12
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER				1		1
NAVIGATOR		1		1		2
CABIN ATTENDANT	3			3		6
EXTRA CREW						
PASSENGERS	73	25	59	252		409
TOTAL	109	39	70	352		570
					ABOARD	
* OTHER AIRCRAFT	5	1	1	4		11
OTHER GROUND						1
GRAND TOTAL	114	41	71	356		582

INVOLVES 138 TOTAL ACCIDENTS
 INVOLVES 33 FATAL ACCIDENTS

* INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF THE TOTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

INJURIES, ACCIDENTS
COMMERCIAL (AIR TAXI-CARGO)
ALL OPERATIONS

	INJURIES					TOTAL
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	
PILOT	12	2	8	28		50
COPILOT	1	1		6		8
DUAL STUDENT				1		1
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT				1		1
EXTRA CREW				5		5
PASSENGERS	1	1	2			4
TOTAL	14	4	10	41		69
					ABOARD	
OTHER AIRCRAFT						
OTHER GROUND	2					2
GRAND TOTAL	16	4	10	41		71

INVOLVES 50 TOTAL ACCIDENTS
INVOLVES 13 FATAL ACCIDENTS

INJURIES • ACCIDENTS
 COMMERCIAL (CONSTRUCTION-ROTORCRAFT)
 ALL OPERATIONS

	INJURIES					TOTAL
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	
PILOT	1	5	1	2		9
COPILLOT			1			1
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT			1	1		2
EXTRA CREW						
PASSENGERS						
TOTAL	1	5	3	3		12
ABOARD						12
OTHER AIRCRAFT						
OTHER GROUND						
GRAND TOTAL	1	5	3	3		12

INVOLVES 9 TOTAL ACCIDENTS
 INVOLVES 1 FATAL ACCIDENTS

INJURIES, ACCIDENTS
 COMMERCIAL (OTHER)
 ALL OPERATIONS

INJURIES

	INJURIES				TOTAL
	FATAL	SERIOUS	MINOR	NONE	
PILOT	3	5	5	17	30
COPILOT				1	1
DUAL STUDENT					
CHECK PILOT					
FLIGHT ENGINEER					
NAVIGATOR					
CABIN ATTENDANT					
EXTRA CREW					
PASSENGERS	11	8	10	26	55
TOTAL	14	13	15	44	86
OTHER AIRCRAFT					
OTHER GROUND					
GRAND TOTAL	14	13	15	44	86

INJURIES 30 TOTAL ACCIDENTS

INJURIES, ACCIDENTS
 MISCELLANEOUS (EXPERIMENTATION)
 ALL OPERATIONS

INJURIES

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	1			1		2
COPILOT	1					1
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS						
TOTAL	2			1		3
OTHER AIRCRAFT						
OTHER GROUND						
GRAND TOTAL	2			1		3

INVOLVES 2 TOTAL ACCIDENTS
 INVOLVES 1 FATAL ACCIDENTS

INJURIES, ACCIDENTS
MISCELLANEOUS (TEST)
ALL OPERATIONS

INJURIES

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	5	5	5	35		50
COPILOT				1		1
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT			1	1		2
EXTRA CREW		1	1	8		10
PASSENGERS						
TOTAL	5	6	7	45		63
					ABOARD	
* OTHER AIRCRAFT				1		1
OTHER GROUND						
GRAND TOTAL	5	6	7	46		64

INVOLVES 50 TOTAL ACCIDENTS
INVOLVES 5 FATAL ACCIDENTS

* INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF THE TOTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

INJURIES, ACCIDENTS
MISCELLANEOUS (DEMONSTRATION)
ALL OPERATIONS

INJURIES

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	1	2	3	13		19
COPILOT			1	1		2
DUAL STUDENT				1		1
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS	3	2	11	13		29
TOTAL	4	4	15	28	ABOARD	51
OTHER AIRCRAFT						
OTHER GROUND						
GRAND TOTAL	4	4	15	28		51

INVOLVES 19 TOTAL ACCIDENTS
INVOLVES 1 FATAL ACCIDENTS

INJURIES • ACCIDENTS
MISCELLANEOUS (FERRY)
ALL OPERATIONS

INJURIES

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	7	10	14	70		101
COPILOT			1	2		3
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT	1	6	4	9		1
EXTRA CREW	4					23
PASSENGERS						
TOTAL	12	16	19	81		128
OTHER AIRCRAFT						
OTHER GROUND						
GRAND TOTAL	12	16	19	81		128

INVOLVES 101 TOTAL ACCIDENTS
INVOLVES 9 FATAL ACCIDENTS

INJURIES, ACCIDENTS
MISCELLANEOUS (SEARCH AND RESCUE)
ALL OPERATIONS

	INJURIES				TOTAL
	FATAL	SERIOUS	MINOR	NONE	
PILOT	1	2	1	3	7
COPILOT					
DUAL STUDENT					
CHECK PILOT					
FLIGHT ENGINEER					
NAVIGATOR					
CABIN ATTENDANT	1	4		8	13
EXTRA CREW	1				
PASSENGERS					
TOTAL	3	6	1	11	21
					ARDARD
* OTHER AIRCRAFT	2				2
OTHER GROUND					
GRAND TOTAL	5	6	1	11	23

INVOLVES 7 TOTAL ACCIDENTS
INVOLVES 2 FATAL ACCIDENTS

* INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF THE TOTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

INJURIES, ACCIDENTS
MISCELLANEOUS (AIR SHOW/RACING)
ALL OPERATIONS

INJURIES

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILLOT	8	2	3	5		18
COPILOT	1	1				2

DUAL STUDENT
CHECK PILOT
FLIGHT ENGINEER
NAVIGATOR
CABIN ATTENDANT
EXTRA CREW
PASSENGERS

TOTAL

20

OTHER AIRCRAFT
OTHER GROUND

GRAND TOTAL

20

INVOLES 17 TOTAL ACCIDENTS
INVOLES 7 FATAL ACCIDENTS

INJURIES, ACCIDENTS
 MISCELLANEOUS (PARACHUTE JUMP-SPORTING)
 ALL OPERATIONS
 INJURIES

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	1	1		14		16
COPILLOT						
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS	2	1	8	20		31
TOTAL	3	2	8	34		47
* OTHER AIRCRAFT	2					2
OTHER GROUND						
GRAND TOTAL	5	2	8	34		49

INVOLVES 16 TOTAL ACCIDENTS
 INVOLVES 1 FATAL ACCIDENTS

* INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF THE TOTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

INJURIES • ACCIDENTS
 MISCELLANEOUS (PARACHUTE JUMP—AIR SHOW)
 ALL OPERATIONS

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
--	-------	---------	-------	------	---------	-------

PILOT
 COPILOT
 DUAL STUDENT
 CHECK PILOT
 FLIGHT ENGINEER
 NAVIGATOR
 CABIN ATTENDANT
 EXTRA CREW
 PASSENGERS

TOTAL

OTHER AIRCRAFT
 OTHER GROUND

GRAND TOTAL

ARMED

• 8 •

INVOLVES
 INVOLVES

TOTAL ACCIDENTS
 FATAL ACCIDENTS

FATAL ACCIDENTS

INJURIES, ACCIDENTS
(MISCELLANEOUS (TOWING GLIDERS)
ALL OPERATIONS)

INJURIES

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	1	2	1	3		7

COPYLOT
DUAL STUDENT
CHECK PILOT
FLIGHT ENGINEER
NAVIGATOR
CABIN ATTENDANT
EXTRA CREW
PASSENGERS

ABOARD 7

3

1

2

1

TOTAL

* OTHER AIRCRAFT
OTHER GROUND

1

GRAND TOTAL

1

2

2

7

1

8

INVOLVES 7 TOTAL ACCIDENTS
INVOLVES 1 FATAL ACCIDENTS

* INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF THE TOTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

INJURIES, ACCIDENTS
 MISCELLANEOUS (SEEDING CLOUDS)
 ALL OPERATIONS

INJURIES

FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
-------	---------	-------	------	---------	-------

PILOT
 COPILOT
 DUAL STUDENT
 CHECK PILOT
 FLIGHT ENGINEER
 NAVIGATOR
 CABIN ATTENDANT
 EXTRA CREW
 PASSENGERS

ABOARD

TOTAL

OTHER AIRCRAFT
 OTHER GROUND

GRAND TOTAL

INVOLVES TOTAL ACCIDENTS
 INVOLVES FATAL ACCIDENTS

INJURIES, ACCIDENTS
MISCELLANEOUS (HUNTING)
ALL OPERATIONS

INJURIES

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	3	2	2	6		13
COPILOT						
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER		1		1		2
NAVIGATOR		2	3	4		11
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS	2					
TOTAL	5	5	5	11		26
ABOARD						26
OTHER AIRCRAFT						
OTHER GROUND						
GRAND TOTAL	5	5	5	11		26

INVOLVES 13 TOTAL ACCIDENTS
INVOLVES 5 FATAL ACCIDENTS

MISCELLANEOUS (POLICE PATROL INCLUDES TRAFFIC ADVISORY)
 INJURIES • ACCIDENTS
 ALL OPERATIONS
 INJURIES

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT		1		3		4
COPILOT						
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW		1		1		2
PASSENGERS						
TOTAL		2		5	ARDARD	7
OTHER AIRCRAFT						
OTHER GROUND						
GRAND TOTAL		2		5		7

INVOLVES 4 TOTAL ACCIDENTS
 INVOLVES FATAL ACCIDENTS

MISCELLANEOUS (HIGHWAY TRAFFIC ADVISORY NON POLICE)
 INJURIES, ACCIDENTS
 ALL OPERATIONS

INJURIES

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
--	-------	---------	-------	------	---------	-------

PILOT						
COPILOT						
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS						

TOTAL

ABOARD

OTHER AIRCRAFT
 OTHER GROUND

GRAND TOTAL

INVOLVES TOTAL ACCIDENTS
 INVOLVES FATAL ACCIDENTS

INJURIES-ACCIDENTS
MISCELLANEOUS (OTHER)
ALL OPERATIONS

INJURIES

	INJURIES				TOTAL
	FATAL	SERIOUS	MINOR	NONF	
PILOT	6	7	2	22	37
COPILOT	2			3	5
DUAL STUDENT					
CHECK PILOT					
FLIGHT ENGINEER		1		3	4
NAVIGATOR		4	8	8	24
CABIN ATTENDANT	4				
EXTRA CREW					
PASSENGERS					
TOTAL	12	12	10	36	70
				ABROAD	
* OTHER AIRCRAFT				1	1
OTHER GROUND	3	3	6		12
GRAND TOTAL	15	15	16	37	83

INVOLVES 36 TOTAL ACCIDENTS
INVOLVES 6 FATAL ACCIDENTS

* INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF THE TOTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

SELECTED ACCIDENT DATA

ALL OPERATIONS

1976

<u>Pilot Total Time</u>	<u>Total</u>	<u>Accident Records</u>	<u>Fatal</u>
0- 25 Hours	149		10
26- 50 Hours	175		18
51- 100 Hours	311		39
101- 300 Hours	762 ²		116
301- 500 Hours	404 ⁴		74
501- 1000 Hours	547 ³		109
1001- 3000 Hours	890 ^M		154
3001- 5000 Hours	383		64
5001- 8000 Hours	227		35
8001-10,000 Hours	77 ^L		14
over-10,000 Hours	213		36
Unknown/not reported	10 2 5		49

4191 4193

Pilot Time In Type Aircraft

5- Or less Hours	222		31
6- 25 Hours	717 ⁹³⁷²		82
26- 50 Hours	572 ^{1168 M}		85
51- 100 Hours	596		80
101- 300 Hours	796 ³		126
301- 500 Hours	333		39
501- 1000 Hours	341 ⁴		40
1001- 2000 Hours	195		30
2001- 3000 Hours	86		8
over- 3000 Hours	98		11
Unknown/not reported	28 5 7		186

4191 or
4193

ANALYTIC TABLE

PILOT AGE BY INJURY INDEX
ALL OPERATIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
14	1				1	1	.02
15							
16		1	2	7	10	10	.24
17	2	3	3	9	17	17	.40
18	2	1	2	17	22	22	.52
19	8	5	4	25	<u>42</u>	41	.99
20	7	5	10	32	54	54	1.27
21	12	3	13	39	67	67	1.58
22	11	4	11	59	85	85	2.00
23	10	10	9	56	85	85	2.00
24	12	5	7	61	<u>85</u>	85	2.00
25	13	7	14	72	106	106	2.50
26	18	22	22	86	148	148	3.49
27	25	10	12	66	113	113	2.66
28	24	11	15	75	125	125	2.95
29	21	22	23	97	<u>163</u>	163	3.84
30	17	7	16	84	124	124	2.92
31	21	19	19	94	153	153	3.61
32	20	10	24	85	139	139	3.28
33	18	15	17	71	121	121	2.85
34	25	12	15	71	<u>123</u>	123	2.90
35	17	16	16	55	104	104	2.45
36	20	13	13	82	128	128	3.02
37	19	4	16	77	116	116	2.74
38	22	18	17	86	143	143	3.37
39	20	4	14	73	111	111	2.62
40	19	11	17	68	115	115	2.71
41	17	8	19	45	89	89	2.10
42	14	7	16	66	103	103	2.43
43	25	12	17	55	109	109	2.57
44	24	7	13	53	<u>97</u>	97	2.29
45	22	15	10	65	112	112	2.64
46	19	8	18	77	122	122	2.88
47	16	9	8	51	84	84	1.98
48	19	10	10	59	98	98	2.31
49	20	15	11	53	99	99	2.33
50	13	10	11	40	74	74	1.74

ANALYTIC TABLE
CONTINUED

PILOT AGE					RECORDS	ACCIDENTS	PERCENT
	FATAL	SERIOUS	MINOR	NONE			
51	16	6	13	50	85	85	2.00
52	19	7	12	47	85	85	2.00
53	18	5	10	41	74	74	1.74
54	6	9	6	35	56	56	1.32
55	9	3	8	33	53	53	1.25
56	8	11	7	26	52	52	1.23
57	11	6	5	35	57	57	1.34
58	5	6	6	19	36	36	.85
59	15	4	5	23	47	47	1.11
60	6	3	2	17	<u>28</u>	28	.66
61	3	4	1	9	17	17	.40
62	7	4	5	6	22	22	.52
63	3	2	2	8	15	15	.35
64	1	1	1	5	8	8	.19
65	5		1	5	11	11	.26
66		1		3	4	4	.09
67	1		2	3	6	6	.14
68	2	2			4	4	.09
69	3			2	5	5	.12
70			2	1	3	3	.07
71	1		1	1	3	3	.07
72				2	2	2	.05
73	1	1	1	1	4	4	.09
74			1	1	2	2	.05
75			1		1	1	.02
76					74	74	1.74
77							
78							
79							
80							
UNKNOWN	5	10	11	48			
RECORDS	718	424	567	2532	4241		
ACCIDENTS	695	422	565	2511		4193	
PERCENTS	16.9	10.0	13.4	59.7			

ANALYTIC TABLE

PILOT CERTIFICATE BY INJURY INDEX
ALL OPERATIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
STUDENT	42	34	52	314	442	442	10.42
PRIVATE	333	176	235	1009	1753	1749	41.33
COMMERCIAL	205	142	168	726	1241	1237	29.26
AIRLINE TRANSPORT	32	15	14	71	132	132	3.11
PRIVATE W/FLIGHT INSTRUCTOR		1		2	3	3	.07
COML WITH FLY INSTRUCTOR	75	38	76	322	511	510	12.05
ATR W/FLIGHT INSTRUCTOR	16	8	17	59	100	99	2.36
OTHER				1	1	1	.02
NONE	9	10	4	10	33	33	.78
UNKNOWN/NOT REPORTED	6		1	18	25	25	.59
RECORDS	718	424	567	2532	4241		
ACCIDENTS	695	422	565	2511		4193	
PERCENTS	16.9	10.0	13.4	59.7			

ANALYTIC TABLE

CONDITIONS OF LIGHT BY INJURY INDEX
ALL OPERATIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
DAWN	4	4	9	31	48	48	1.13
DAYLIGHT	525	349	488	2224	3586	3541	84.56
DUISK	30	21	18	106	175	173	4.13
NIGHT (DARK)	136	45	43	121	345	345	8.13
NIGHT (MOONLIGHT-BRIGHT)	14	4	9	40	67	66	1.58
UNKNOWN/NOT REPORTED	9	1		10	20	20	.47
RECORDS	718	424	567	2532	4241		
ACCIDENTS	695	422	565	2511		4193	
PERCENTS	16.9	10.0	13.4	59.7			

ANALYTIC TABLE

TYPE OF WEATHER BY INJURY INDEX
ALL OPERATIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
VFR	516	397	539	2454	3906	3858	92.10
IFR	162	23	23	60	268	268	6.37
BELOW MINIMUMS	16	2	4	5	27	27	.64
UNKNOWN/NOT REPORTED	24	2	1	13	40	40	.94
RECORDS	718	424	567	2532	4241		
ACCIDENTS	695	422	565	2511		4193	
PERCENTS	16.9	10.0	13.4	59.7			

ANALYTIC TABLE

TYPE OF FLIGHT PLAN BY INJURY INDEX
ALL OPERATIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
NONE	558	365	485	2140	3548	3511	83.66
VFR	80	33	52	291	456	453	10.75
IFR	71	22	26	77	196	196	4.62
CONTROLLED VFR			1		1	1	.02
IFR (VFR CONDITIONS ON TOP)	1				1	1	.02
TOWER EN ROUTE CONTROL SERVICE							
DVFR	1			1	2	2	.05
VFR FLIGHT FOLLOWING SERVICE	1			2	3	3	.07
SPECIAL VFR	3	1	1	4	9	9	.21
OTHER		1	1	2	4	4	.09
UNKNOWN/NOT REPORTED	3	2	1	15	21	21	.50
RECORDS	718	424	567	2532	4241		
ACCIDENTS	695	422	565	2511		4193	
PERCENTS	16.9	10.0	13.4	59.7			

ANALYTIC TABLE

MONTH OF OCCURRENCE BY INJURY INDEX
ALL OPERATIONS

	INJURY INDEX				RECORDS	ACCIDENTS	PERCENT
	FATAL	SERIOUS	MINOR	NONE			
01	43	20	34	159	256	254	6.04
02	55	35	35	193	318	310	7.50
03	54	29	39	180	302	300	7.12
04	55	34	46	231	366	363	8.63
05	65	41	46	267	419	418	9.88
06	56	48	65	256	425	419	10.02
07	84	58	65	307	514	504	12.12
08	72	40	73	271	456	454	10.75
09	67	32	48	230	377	376	8.89
10	60	37	42	175	314	308	7.40
11	56	25	39	131	251	247	5.92
12	51	25	35	132	243	240	5.73
RECORDS	718	424	567	2532	4241		
ACCIDENTS	695	422	565	2511		4193	
PERCENTS	16.9	10.0	13.4	59.7			

ANALYTIC TABLE

MONTH OF OCCURRENCE BY TYPE OF WEATHER CONDITIONS
ALL OPERATIONS

	TYPE OF WEATHER CONDITIONS				RECORDS	ACCIDENTS	PERCENT
	WFR	LFR	BELOW VISIBLE	UNKNOWN			
01	224	25	4	3	256	254	6.04
02	281	33	1	3	318	310	7.50
03	272	24	3	3	302	300	7.12
04	338	24	2	2	366	363	8.63
05	392	24	1	2	419	418	9.88
06	410	8	3	4	425	419	10.02
07	490	16	3	5	514	504	12.12
08	435	12	2	7	456	454	10.75
09	353	20	1	3	377	376	8.89
10	282	27	3	2	314	308	7.40
11	215	29	3	4	251	247	5.92
12	214	26	1	2	243	240	5.73
RECORDS	3906	268	27	40	4241		
ACCIDENTS	3858	268	27	40		4193	
PERCENTS	92.1	6.3	.6	.9			

ANALYTIC TABLE

MONTH OF OCCURRENCE BY FIRST TYPE OF ACCIDENT
ALL OPERATIONS

FIRST TYPE OF ACCIDENT	01	02	03	04	05	06	07	08	09	10	11	12	RECORDS	ACCIDENTS
GROUND-WATER LOOP-SWERVE	46	51	37	47	64	56	51	52	50	34	24	23	535	535
DRAGGED WINGTIP POD OR FLOAT								1					1	1
WHEELS-UP LANDING	2	6	4	6	12	4	5	6	8	4	4	6	67	67
WHEELS-DOWN LANDING IN WATER				1	1			1	1				4	4
GEAR COLLAPSED	1	6	2	5	1	2	4	6		5	6	1	39	39
GEAR RETRACTED	5	5	5	6	3	4	10	2	6	5	4	4	59	59
HARD LANDING	16	11	22	25	34	33	30	34	22	22	12	15	276	276
NOSE OVER/DOWN	9	10	20	22	13	9	10	7	14	13	8	10	145	145
ROLL OVER	1	4	4	2	5	2	3	1	4	1	1		28	28
OVERSHOOT	10	21	14	13	23	17	29	29	23	12	15	5	211	211
UNDERSHOOT	6	8	7	12	10	8	14	12	13	8	9	6	113	113
<u>COLLISION BETWEEN AIRCRAFT</u>														
BOTH IN FLIGHT	4	8	4	6	2	6	14	4		4	6	2	60	30
ONE AIRBORNE		2					2			2			6	3
BOTH ON GROUND		6				6	4		2	6	2	4	30	15
<u>COLLISION WITH GROUND/WATER</u>														
CONTROLLED	13	19	8	14	24	13	18	23	12	14	12	11	181	181
UNCONTROLLED	13	10	17	16	14	8	7	12	13	17	14	17	158	158
<u>COLLIDED WITH</u>														
WIRES/POLES	1	11	11	13	25	23	24	22	10	18	11	12	181	181
TREES	12	17	7	9	13	20	20	19	23	14	14	9	177	177
RESIDENCE/S														
BUILDING/S		1	1		1	1	2	1					7	7
FENCE, FENCEPOSTS	1	5	2	5	8	5	6	7	3	5	3	1	51	51
ELECTRONIC TOWERS							3	2	1			1	7	7
RUNWAY OR APPROACH LIGHTS			1			1	1	1	1		1		6	6
AIRPRT HAZARD			1	1					2		1	1	6	6
ANIMALS		1			1		1	1		1			5	5
CRDP				1		5	6	2		3			17	17
FLAGMAN LOADER				2									2	2
DITCHES	1		3	2	6	3	4	6	2	1	1	3	32	32
SNOWBANK	8	6	1	1									16	16
PARKED AIRCRAFT (UNATTENDED)	1	1	3	2	3	2	4			1	2	3	22	22
AUTOMOBILE	1	1	1			3		1				1	8	8
DIRT BANK		2		1	1	4	5		6		1		20	20
OTHER	4	3	6	5	6	9	9	9	11	6	6	4	78	78
BIRD STRIKE	1				1	1					1		4	4

ANALYTIC TABLE

FIRST TYPE OF ACCIDENT	MONTH OF OCCURRENCE												RECORDS	ACCIDENTS
	01	02	03	04	05	06	07	08	09	10	11	12		
STALL	8	6	12	11	13	17	22	11	11	7	7	9	134	134
SPIN	7	6	9	5	6	14	11	11	11	10	6	10	106	106
SPIRAL		1		2		3	3	1		2	1		13	13
MUSH	5	9	9	13	19	18	34	27	19	10	6	6	175	175
<u>FIRE OR EXPLOSION</u>														
IN FLIGHT	2		3	1		1	2	6	1		1		17	17
ON GROUND		1	1		1		3	2					8	8
<u>AIRFRAME FAILURE</u>														
IN FLIGHT	2	3	6	14	6	3	9	5	6	1	5	5	65	65
ON GROUND	1	1	2		2	1		1	1		1	1	11	11
ENGINE TEARAWAY														
ENGINE FAILURE OR MALFUNCTION	63	67	68	92	90	107	129	117	85	79	59	69	1025	1025
<u>PROPELLER/ROTOR FAILURE</u>														
PROPELLER	3	1	1	1	2	1	2	4	3	1	2	1	22	22
TAIL ROTOR	2	1		1	1	2	4	6	3	2	2		24	24
MAIN ROTOR			3	2		3			2			1	11	11
PROP ROTOR ACNT TO PERSON	4			1	2	3	1		1	1	1		14	14
JET INTAKE/EXH ACNT TO PERS														
PROPELLER/JET/ROTOR BLAST		2		1								1	4	4
TURBULENCE	1	1	3		2	4	4	1	3	2			21	21
HAIL DAMAGE TO AIRCRAFT														
LIGHTNING STRIKE					1								1	1
EVASIVE MANEUVER				1						1			2	2
<u>UNCONTROLLED ALT DEVIATION</u>														
DITCHING		1		1	1								3	3
MISSING ACFT NOT RECOVERED	2	1			1	2	2	1	1			1	11	11
MISCELLANEOUS/OTHER		2	2	2	2	1	1		2	1	1	1	15	15
UNDETERMINED			2				1	2	1	1			7	7
RECORDS	256	318	302	366	419	425	514	456	377	314	251	243	4241	
ACCIDENTS	254	310	300	363	418	419	504	454	376	308	247	240		4193

ANALYTIC TABLE

STATE OF OCCURRENCE BY INJURY INDEX
ALL OPERATIONS

	INJURY INDEX				RECORDS	ACCIDENTS	PERCENT
	FATAL	SERIOUS	MINOR	NONE			
ALABAMA	10	6	10	51	77	76	1.82
ALASKA	36	23	33	201	293	290	6.91
ARIZONA	25	5	10	66	106	105	2.50
ARKANSAS	11	11	12	67	101	101	2.38
CALIFORNIA	89	42	65	285	481	472	11.34
COLORADO	21	15	9	53	98	96	2.31
CONNECTICUT	3	1	6	6	16	16	.38
DELAWARE		4		3	7	6	.17
FLORIDA	30	17	22	128	197	195	4.65
GEORGIA	20	9	13	57	99	99	2.33
HAWAII	3	3	4	9	19	18	.45
IDAHO	14	7	11	30	62	62	1.46
ILLINOIS	28	13	10	79	130	127	3.07
INDIANA	17	7	8	47	79	78	1.86
IOWA	6	6	6	37	55	54	1.30
KANSAS	11	7	16	56	90	90	2.12
KENTUCKY	12	2	8	21	43	41	1.01
LOUISIANA	17	16	8	53	94	92	2.22
MAINE	2	3	4	14	23	23	.54
MARYLAND	8	5	8	19	40	40	.94
MASSACHUSETTS	4	8	5	26	43	43	1.01
MICHIGAN	14	10	20	85	129	129	3.04
MINNESOTA	9	6	11	52	78	76	1.84
MISSISSIPPI	9	2	7	20	38	36	.90
MISSOURI	10	10	17	63	100	97	2.36
MONTANA	12	5	6	34	57	57	1.34
NEBRASKA	8	4	8	42	62	62	1.46
NEVADA	6	6	6	46	64	64	1.51
NEW HAMPSHIRE		4	2	3	9	9	.21
NEW JERSEY	7	7	10	27	51	50	1.20
NEW MEXICO	14	7	7	36	64	64	1.51
NEW YORK	16	17	18	85	136	132	3.21
NORTH CAROLINA	14	10	9	37	70	70	1.65
NORTH DAKOTA	4	4	2	11	21	21	.50
OHIO	11	9	23	58	101	101	2.38
OKLAHOMA	16	9	11	31	67	65	1.58
OREGON	16	12	11	41	80	80	1.89

ANALYTIC TABLE

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
PENNSYLVANIA	19	14	16	66	115	115	2.71
RHODE ISLAND	2	2		7	11	11	.26
SOUTH CAROLINA	4	2	6	27	39	39	.92
SOUTH DAKOTA	2	5	3	12	22	21	.52
TENNESSEE	10	4	7	31	52	52	1.23
TEXAS	57	22	40	190	309	306	7.29
UTAH	9	5	11	31	56	56	1.32
VERMONT	6	1	2	12	21	21	.50
VIRGINIA	11	5	6	35	57	56	1.34
WASHINGTON	14	17	15	65	111	111	2.62
WEST VIRGINIA	5	3	2	8	18	18	.42
WISCONSIN	11	7	10	27	55	55	1.30
WYOMING	12	3	6	17	38	38	.90
DISTRICT OF COLUMBIA					11	11	.26
UNKNOWN/NOT REPORTED	11				7	7	.17
PUERTO RICO	1		2	4	3	3	.07
VIRGIN ISLANDS	1	1	1				
SAMOA							
OTHER-U.S. TERRITORIES & POSSES.					1	1	.02
CANADA	1				20	20	.47
MEXICO	4		2	14	1	1	.02
CENTRAL AMERICA				1			
SOUTH AMERICA							
EUROPE							
ASIA							
AFRICA							
AUSTRALIA							
ICELAND							
GREENLAND					7	7	.17
OTHER-FOREIGN COUNTRIES		1	2	4	1	1	.02
PACIFIC OCEAN NORTH LATITUDES				1	1	1	.02
PACIFIC OCEAN SOUTH LATITUDES	1				2	2	.05
ATLANTIC OCEAN NORTH LAT.	2				1	1	.02
ATLANTIC OCEAN SOUTH LAT.	1				2	2	.05
OTHER-INTERNATIONAL WATERS	1			1			
RECORDS	718	424	567	2532	4241		
ACCIDENTS	695	422	565	2511		4193	
PERCENTS	16.9	10.0	13.4	59.7			

ANALYTIC TABLE

STATE OF OCCURRENCE BY AIRCRAFT DAMAGE
ALL OPERATIONS

	DAMAGE				RECORDS	ACCIDENTS	PERCENT
	DESTROYED	SUBSTANTIAL	MINOR	NONE			
ALABAMA	15	61		1	77	76	1.82
ALASKA	32	256	1	4	293	290	6.91
ARIZONA	33	70	1	2	106	105	2.50
ARKANSAS	23	78			101	101	2.38
CALIFORNIA	148	329	3	1	481	472	11.34
COLORADO	26	72			98	96	2.31
CONNECTICUT	5	11			16	16	.38
DELAWARE	3	4			7	6	.17
FLORIDA	53	142	1	1	197	195	4.65
GEORGIA	32	66		1	99	99	2.33
HAWAII	5	14			19	18	.45
IDAHO	20	41		1	62	62	1.46
ILLINOIS	31	98	1		130	127	3.07
INDIANA	21	58			79	78	1.86
IOWA	15	40			55	54	1.30
KANSAS	10	80			90	90	2.12
KENTUCKY	15	27	1		43	41	1.01
LOUISIANA	30	63	1		94	92	2.22
MAINE	5	17		1	23	23	.54
MARYLAND	8	32			40	40	.94
MASSACHUSETTS	6	37			43	43	1.01
MICHIGAN	27	102			129	129	3.04
MINNESOTA	14	64			78	76	1.84
MISSISSIPPI	13	23	1	1	38	36	.90
MISSOURI	19	81			100	97	2.36
MONTANA	16	41			57	57	1.34
NEBRASKA	9	53			62	62	1.46
NEVADA	9	55			64	64	1.51
NEW HAMPSHIRE	1	8			9	9	.21
NEW JERSEY	14	37			51	50	1.20
NEW MEXICO	20	44			64	64	1.51
NEW YORK	26	109		1	136	132	3.21
NORTH CAROLINA	21	48		1	70	70	1.65
NORTH DAKOTA	9	12			21	21	.50
OHIO	20	81			101	101	2.38
OKLAHOMA	31	33	1	2	67	65	1.58
OREGON	20	59		1	80	80	1.89

ANALYTIC TABLE

DESTROYED
SUBSTANTIAL
MINOR
NONE

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
PENNSYLVANIA	22	92		1	115	115	2.71
RHODE ISLAND	3	7	1		11	11	.26
SOUTH CAROLINA	7	31	1		39	39	.92
SOUTH DAKOTA	5	17			22	21	.52
TENNESSEE	16	36			52	52	1.23
TEXAS	91	216	1	1	309	306	7.29
UTAH	16	40			56	56	1.32
VERMONT	8	13			21	21	.50
VIRGINIA	17	40			57	56	1.34
WASHINGTON	36	75			111	111	2.62
WEST VIRGINIA	8	10			18	18	.42
WISCONSIN	15	40			55	55	1.30
WYOMING	13	25			38	38	.90
DISTRICT OF COLUMBIA							
UNKNOWN/NOT REPORTED	10	1			11	11	.26
PUERTO RICO	3	4			7	7	.17
VIRGIN ISLANDS	3				3	3	.07
SAMOA							
OTHER-U.S.TERRITORIES&POSSES.							
CANADA	1				1	1	.02
MEXICO	6	14			20	20	.47
CENTRAL AMERICA			1		1	1	.02
SOUTH AMERICA							
EUROPE							
ASIA							
AFRICA							
AUSTRALIA							
ICELAND							
GREENLAND							
OTHER-FOREIGN COUNTRIES	4	3			7	7	.17
PACIFIC OCEAN NORTH LATITUDES	1				1	1	.02
PACIFIC OCEAN SOUTH LATITUDES	1				1	1	.02
ATLANTIC OCEAN NORTH LAT.	2				2	2	.05
ATLANTIC OCEAN SOUTH LAT.	1				1	1	.02
OTHER-INTERNATIONAL WATERS	1	1			2	2	.05
RECORDS	1095	3112	14	20	4241		
ACCIDENTS	1080	3097	14	20		4193	
PERCENTS	25.8	73.4	.3	.5			

ANALYTIC TABLE

TYPE OF AIRCRAFT BY INJURY INDEX
ALL OPERATIONS

	FATAL SERIOUS MINOR NONE				RECORDS	ACCIDENTS	PERCENT
FIXED-WING	675	365	503	2347	3890	3843	91.72
HELICOPTER	27	39	49	143	258	258	6.08
GLIDER	8	15	11	31	65	65	1.53
BALLOON	3	4	3	3	13	13	.31
BLIMP							
DIRIGIBLE							
ROCKET							
CONVERTIPLANE							
GYROPLANE	5	1	1	8	15	15	35
OTHER							
RECORDS	718	424	567	2532	4241		
ACCIDENTS	695	422	565	2511		4193	
PERCENTS	16.9	10.0	13.4	59.7			

ANALYTIC TABLE

TYPE AIRCRAFT BY AIRCRAFT DAMAGE
ALL OPERATIONS

	DESTROYED SUBSTANTIAL MINOR NONE				RECORDS	ACCIDENTS	PERCENT
FIXED-WING	995	2864	14	17	3890	3843	91.72
HELICOPTER	77	181			258	258	6.08
GLIDER	11	52		2	65	65	1.53
BALLOON	6	6		1	13	13	.31
BLIMP							
DIRIGIBLE							
ROCKET							
CONVERTIPLANE							
GYROPLANE	6	9			15	15	35
OTHER							
RECORDS	1095	3112	14	20	4241		
ACCIDENTS	1080	3097	14	20		4193	
PERCENTS	25.8	73.4	.3	.5			

ANALYTIC TABLE

TYPE OF POWER BY INJURY INDEX
ALL OPERATIONS

	FATAL SERIOUS MINOR NONE				RECORDS	ACCIDENTS	PERCENT
RECIPROCATING ENGINE	681	388	543	2447	4059	4014	95.71
TURBOJET ENGINE	6	3	1	4	14	14	.33
TURBOPROP ENGINE	8	2	3	19	32	31	.75
TURBOPAN ENGINE							
NONE	11	18	14	33	76	76	1.79
TURBOSHAF	12	13	6	29	60	60	1.41
RECORDS	718	424	567	2532	4241		
ACCIDENTS	695	422	565	2511		4193	
PERCENTS	16.9	10.0	13.4	59.7			

ANALYTIC TABLE

TYPE OF POWER BY AIRCRAFT DAMAGE
ALL OPERATIONS

	DESTROYED SUBSTANTIAL MINOR NONE				RECORDS	ACCIDENTS	PERCENT
RECIPROCATING ENGINE	1047	2982	13	17	4059	4014	95.71
TURBOJET ENGINE	6	7	1		14	14	.33
TURBOPROP ENGINE	10	22			32	31	.75
TURBOPAN ENGINE							
NONE	16	57		3	76	76	1.79
TURBOSHAF	16	44			60	60	1.41
RECORDS	1095	3112	14	20	4241		
ACCIDENTS	1080	3097	14	20		4193	
PERCENTS	25.8	73.4	.3	.5			

ANALYTIC TABLE

AIRPORT PROXIMITY BY INJURY INDEX
ALL OPERATIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
ON AIRPORT	57	106	197	1479	1839	1814	43.36 <i>AM</i>
ON SEAPLANE BASE	1	2		9	12	12	.28
ON HELIPORT		1		8	9	9	.21
ON BARGE/SHIP/PLATFORM				2	2	2	.05
IN TRAFFIC PATTERN	59	41	53	99	252	249	5.94 <i>3</i>
WITHIN 1/4 MILE	36	31	38	70	175	174	4.13
WITHIN 1/2 MILE	34	17	19	39	109	108	2.57
WITHIN 3/4 MILE	11	5	6	3	25	24	.59
WITHIN 1 MILE	28	13	18	34	93	93	2.19
WITHIN 2 MILES	29	16	12	42	99	99	2.33
WITHIN 3 MILES	21	7	10	24	62	62	1.46
WITHIN 4 MILES	18	6	5	8	37	36	.87
WITHIN 5 MILES	17	3		18	38	38	.90
BEYOND 5 MILES	375	155	179	597	1306	1293	30.79 <i>2</i>
UNKNOWN/NOT REPORTED	32	21	30	100	183	182	4.32
RECORDS	718	424	567	2532	4241		
ACCIDENTS	695	422	565	2511		4193	
PERCENTS	16.9	10.0	13.4	59.7			

ANALYTIC TABLE

FIRE AFTER IMPACT BY INJURY INDEX
ALL OPERATIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
YES	197	51	35	58	341	339	99.13
UNKNOWN	1			2	3	3	.87
RECORDS	198	51	35	60	344		
ACCIDENTS	196	51	35	60		342	
PERCENTS	57.6	14.8	10.2	17.4			

GENERAL AVIATION ACCIDENTS

SMALL FIXED-WING AIRCRAFT

ANALYTIC TABLE

TYPE OF ACCIDENT BY AIRCRAFT DAMAGE
SMALL FIXED WING

FIRST TYPE OF ACCIDENT				RECORDS	ACCIDENTS	PERCENT
	DESTROYED	SUBSTANTIAL	MINOR NONE			
GROUND-WATER LOOP-SWERVE	21	507		528	528	13.66
DRAGGED WINGTIP POD OR FLOAT		1		1	1	.03
WHEELS-UP LANDING	3	62		65	65	1.68
WHEELS-DOWN LANDING IN WATER		4		4	4	.10
GEAR COLLAPSED		38		38	38	.98
GEAR RETRACTED	1	58		59	59	1.53
HARD LANDING	9	238		247	247	6.39
NOSE OVER/DOWN	3	139		142	142	3.67
ROLL OVER						
OVERSHOOT	19	188		207	207	5.35
UNDERSHOOT	17	87		104	104	2.69
<u>COLLISION BETWEEN AIRCRAFT</u>						
BOTH IN FLIGHT	36	17	5 1	59	30	1.53
ONE AIRBORNE	1	4	1	6	3	.16
BOTH ON GROUND		25	5	30	15	.78
<u>COLLISION WITH GROUND/WATER</u>						
CONTROLLED	107	54		161	161	4.16
UNCONTROLLED	118	18		136	136	3.52
<u>COLLIDED WITH</u>						
WIRES/POLES	69	73		142	142	3.67
TREES	86	75		161	161	4.16
RESIDENCE/S						
BUILDING/S	1	6		7	7	.18
FENCE, FENCEPOSTS	2	47		49	49	1.27
ELECTRONIC TOWERS	5	2		7	7	.18
RUNWAY OR APPROACH LIGHTS		6		6	6	.16
AIRPORT HAZARD		6		6	6	.16
ANIMALS		5		5	5	.13
CROP	2	11		13	13	.34
FLAGMAN LOADER			1 1	2	2	.09
DITCHES	2	29		31	31	.80
SNOWBANK		16		16	16	.41
PARKED AIRCRAFT (UNATTENDED)		21		21	21	.54
AUTOMOBILE		8		8	8	.21
DIRT BANK	1	18		19	19	.49
OTHER	6	57	1	64	64	1.66

ANALYTIC TABLE

FIRST TYPE OF ACCIDENT					RECORDS	ACCIDENTS	PERCENT
	DESTROYED	SUBSTANTIAL	MINOR	NONE			
<u>BIRD STRIKE</u>					2	2	.05
STALL	64	63			127	127	3.29
SPIN	77	20			97	97	2.51
SPIRAL	9	4			13	13	.34
MUSH	43	130			173	173	4.47
<u>FIRE OR EXPLOSION</u>							
IN FLIGHT	8	6			14	14	.36
ON GROUND		4			4	4	.10
<u>AIRFRAME FAILURE</u>							
IN FLIGHT	38	17			55	55	1.42
ON GROUND		9			9	9	.23
<u>ENGINE TEARAWAY</u>							
ENGINE FAILURE OR MALFUNCTION	206	732			938	938	24.26
<u>PROPELLER/ROTOR FAILURE</u>							
PROPELLER	4	18			22	22	.57
TAIL ROTOR							
MAIN ROTOR							
PROP ROTOR ACDNT TO PERSON		1	13		14	14	.36
JET INTAKE/EXH ACDNT TO PERS							
PROPELLER/JET/ROTOR BLAST		4			4	4	.10
TURBULENCE	8	11			19	19	.49
<u>HAIL DAMAGE TO AIRCRAFT</u>							
LIGHTNING STRIKE		1			1	1	.03
EVASIVE MANEUVER	1	1			2	2	.05
<u>UNCONTROLLED ALT DEVIATION</u>							
DITCHING	1	1			2	2	.05
MISSING ACFT NDT RECOVERED	10	1			11	11	.28
MISCELLANEOUS/OTHER	2	5	1	1	9	9	.23
UNDETERMINED	5	1			6	6	.16
RECORDS	985	2851	13	17	3866		
ACCIDENTS	971	2836	13	17		3819	
PERCENTS	25.5	73.7	.3	.4			

ANALYTIC TABLE

FIRST PHASE OF OPERATIONS BY INJURY INDEX
SMALL FIXED WING

<u>FIRST OPERATIONAL PHASE</u>	<u>FATAL</u>	<u>SERIOUS</u>	<u>MINOR</u>	<u>NONE</u>	RECORDS	ACCIDENTS	PERCENT
<u>STATIC</u>							
STARTING ENGINE/S	3	4		1	8	8	.21
IDLING ENGINE/S	2	5		6	13	13	.34
ENGINE RUNUP				1	1	1	.03
IDLING ROTORS							
PARKED-ENGINES NOT OPERATING							
OTHER							
<u>TAXI</u>							
TO TAKEOFF		1	1	52	54	54	1.40
FROM LANDING		2	3	55	60	60	1.55
OTHER	1	2	3	21	27	27	.70
GROUND TAXI TO TAKEOFF							
GROUND TAXI FROM LANDING							
GROUND TAXI, OTHER							
AERIAL TAXI TO TAKEOFF							
AERIAL TAXI TO/FROM LANDING							
AERIAL TAXI, OTHER							
<u>TAKEOFF</u>							
RUN	6	11	18	137	172	172	4.45
INITIAL CLIMB	73	70	89	258	490	489	12.67
<u>VERTICAL</u>							
RUNNING (ROTORCRAFT/VTOL-STOL)							
ABORTED (FIXED-WING)		1	6	51	58	58	1.50
ABORTED (ROTORCRAFT/VTOL)							
ABORTED (ROTORCRAFT/STOL)							
OTHER		1		3	4	4	.10
<u>INFLIGHT</u>							
CLIMB TO CRUISE	12	7	12	44	75	75	1.94
NORMAL CRUISE	122	57	76	219	474	466	12.26
DESCENDING	16	16	13	34	79	79	2.04
HOLDING (IFR)							
HOVERING							
POWER-ON DESCENT (ROTORCRAFT)							
AUTOROTATIVE DESCENT							
ACROBATICS	31	3	3	9	46	46	1.19
BUZZING	26	3		8	37	37	.96

ANALYTIC TABLE

FIRST OPERATIONAL PHASE					RECORDS	ACCIDENTS	PERCENT
	FATAL	SERIOUS	MINOR	NONE			
UNCONTROLLED DESCENT	72	5	1	3	81	81	2.10
EMERGENCY DESCENT							
LOW PASS	34	15	12	27	88	88	2.28
OTHER	108	17	17	31	173	170	4.47
EN ROUTE TO TREAT CROP	2	1	3	11	17	17	.44
EN ROUTE TO RELOADING AREA	1	1			2	2	.05
SURVEY FIELD/AREA	1	1	1	1	4	4	.10
STARTING SWATH RUN	4	6	1	8	19	19	.49
SWATH RUN	10	11	15	50	86	85	2.22
FLAREOUT FOR SWATH RUN	1	1		2	4	4	.10
PULLUP FROM SWATH RUN	3	5	7	21	36	36	.93
PROCEDURE TURNAROUND	11	5	9	39	64	64	1.66
CLEANUP SWATH	1	1	2	1	5	5	.13
MANEUVER TO AVOID OBSTRUCTION		1	1		2	2	.05
RETURN TO STRIP	2			6	8	8	.21
<u>LANDING</u>							
TRAFFIC PATTERN-CIRCLING	22	15	12	16	65	64	1.68
FINAL APPROACH (VFR)	40	32	55	139	266	258	6.88
INITIAL APPROACH	6	1		2	9	9	.23
FINAL APPROACH (IFR)	15	6	3	5	29	29	.75
LEVEL OFF/TOUCHDOWN	13	23	71	518	625	625	16.17
ROLL (FIXED WING)	1	13	46	507	567	563	14.67
ROLL-ON/RUN-ON (ROTORCRAFT)							
POWER-ON LANDING (ROTORCRAFT)							
POWER-OFF AUTOROTATIVE LDG							
GO-AROUND (VFR)	10	18	21	47	96	96	2.48
MISSED APPROACH (IFR)	3				3	3	.08
OTHER	3	1			4	4	.10
UNKNOWN/NOT REPORTED	12			3	15	15	.39
RECORDS	667	362	501	2336	3866		
ACCIDENTS	645	360	499	2315		3819	
PERCENTS	17.3	9.4	13.0	60.4			

CAUSE/FACTOR TABLE
SMALL FIXED WING
ACCIDENTS WITH ASSIGNED CAUSES ONLY

INVOLVES 3770 TOTAL ACCIDENTS
INVOLVES 622 FATAL ACCIDENTS

BROAD CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
PILOT	553	120	561	2626	290	2643	3179	410	3204
	88.91	19.29	90.19	83.42	9.21	83.96	84.32	10.88	84.99
PERSONNEL	56	19	71	237	64	297	293	83	368
	9.00	3.05	11.41	7.53	2.03	9.43	7.77	2.20	9.76
AIRFRAME	11	4	15	25	10	35	36	14	50
	1.77	.64	2.41	.79	.32	1.11	.95	.37	1.33
LANDING GEAR	1	1	2	129	44	171	130	45	173
	.16	.16	.32	4.10	1.40	5.43	3.45	1.19	4.59
POWERPLANT	52	4	55	441	37	476	493	41	531
	8.36	.64	8.84	14.01	1.18	15.12	13.08	1.09	14.08
SYSTEMS	5	3	8	26	5	31	31	8	39
	.80	.48	1.29	.83	.16	.98	.82	.21	1.03
INSTRUMENTS/EQUIPMENT & ACCESSORIES	1	4	5	3	15	18	4	19	23
	.16	.64	.80	.10	.48	.57	.11	.50	.61
ROTORCRAFT	.00	.00	.00	.00	.00	.00	.00	.00	.00
AIRPORT/AIRWAYS/FACILITIES	.00	9	9	56	304	352	56	313	361
	.00	1.45	1.45	1.78	9.66	11.18	1.49	8.30	9.58
WEATHER	12	234	243	96	503	585	108	737	828
	1.93	37.62	39.07	3.05	15.98	18.58	2.86	19.55	21.96
TERRAIN	10	145	154	283	756	1035	293	901	1189
	1.41	23.31	24.76	8.99	24.02	32.88	7.77	23.90	31.54
MISCELLANEOUS	11	3	14	100	19	119	111	22	133
	1.77	.48	2.25	3.18	.60	3.78	2.94	.58	3.53
UNDETERMINED	38	.00	38	22	.00	22	60	.00	60
	6.11	.00	6.11	.70	.00	.70	1.59	.00	1.59

THE FIGURES OPPOSITE EACH CAUSAL CATEGORY REPRESENT THE NUMBER AND PERCENT OF ACCIDENTS IN WHICH THAT PARTICULAR CAUSAL CATEGORY WAS ASSIGNED

* IF AN ACCIDENT INCLUDES BOTH A CAUSE AND RELATED FACTOR IN THE SAME CAUSAL CATEGORY, THE ACCIDENT IS REPRESENTED ONCE UNDER THE TOTAL FOR THAT CATEGORY

CAUSE/FACTOR TABLE
SMALL FIXED WING
ACCIDENTS WITH ASSIGNED CAUSES ONLY

INVOLVES 3770 TOTAL ACCIDENTS
INVOLVES 622 FATAL ACCIDENTS

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
** PILOT **									
PILOT IN COMMAND									
ATTEMPTED OPERATION W/KNOWN DEFICIENCIES IN EQUIPMENT	6	3	9	22	4	26	28	7	35
ATTEMPTED OPERATION BEYOND EXPERIENCE/ABILITY LEVEL	42	8	50	47	7	54	89	15	104
BECAME LOST/DISORIENTED	8	4	12	34	11	45	42	15	57
CONTINUED VFR FLIGHT INTO ADVERSE WEATHER CONDITIONS	98	2	100	63	7	70	161	9	170
CONTINUED INTO KNOWN AREA OF SEVERE TURBULENCE	4		4	3		3	7		7
DELAYED ACTION IN ABORTING TAKEOFF				46	3	49	46	3	49
DELAYED IN INITIATING GO-AROUND	5		5	88	4	92	93	4	97
DIVERTED ATTENTION FROM OPERATION OF AIRCRAFT	23	5	28	62	29	91	85	34	119
EXCEEDED DESIGN STRESS LIMITS OF AIRCRAFT	20		20	6		6	26		26
FAILED TO EXTEND LANDING GEAR				37		37	37		37
FAILED TO RETRACT LANDING GEAR		1	1	6	1	7	6	2	8
RETRACTED GEAR PREMATURELY		1	1	3		3	3	1	4
INADVERTENTLY RETRACTED GEAR				19		19	19		19
FAILED TO SEE AND AVOID OTHER AIRCRAFT	28		28	30		30	58		58
FAILED TO SEE AND AVOID OBJECTS OR OBSTRUCTIONS	41	1	42	172	2	174	213	3	216
FAILED TO OBTAIN/MAINTAIN FLYING SPEED	178	2	180	320		320	498	2	500
MISJUDGED, SPEED, ALTITUDE OR CLEARANCE	11	1	12	38	1	39	49	2	51
FAILED TO USE OR INCORRECTLY USED MISC EQUIPMENT	3	2	5	3	3	6	6	5	11
FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES ETC	40	7	47	71	8	79	111	15	126
IMPROPER OPERATION OF POWERPLANT + POWERPLANT CONTROLS	10	1	11	97	9	106	107	10	117
IMPROPER OPERATION OF BRAKES AND/OR FLIGHT CONTROLS				182	5	187	182	5	187
IMPROPER OPERATION OF FLIGHT CONTROLS	46	1	47	93	3	96	139	4	143
PREMATURE LIFT OFF	5	1	6	57	2	59	62	3	65
IMPROPER LEVEL OFF	1		1	290	1	291	291	1	292
IMPROPER IFR OPERATION	13	2	15	9		9	22	2	24
IMPROPER IN-FLIGHT DECISIONS OR PLANNING	73	12	85	123	13	136	196	25	221
IMPROPER COMPENSATION FOR WIND CONDITIONS	3	1	4	111	12	123	114	13	127
INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING	54	23	77	392	53	445	446	76	522
INADEQUATE SUPERVISION OF FLIGHT	8	1	9	63	1	64	71	2	73
LACK OF FAMILIARITY WITH AIRCRAFT	10	16	26	34	82	116	44	98	142
MISMANAGEMENT OF FUEL	15		15	227	1	228	242	1	243
EXERCISED POOR JUDGMENT	33	10	43	71	7	78	104	17	121
OPERATED CARELESSLY	10	4	14	10	2	12	20	6	26
SELECTED UNSUITABLE TERRAIN	4	1	5	191	8	199	195	9	204
IMPROPER STARTING PROCEDURES				5		5	5		5
STARTED ENGINE WITHOUT PROPER ASSISTANCE/EQUIPMENT	2		2	7		7	9		9
TAXIED/PARKED WITHOUT PROPER ASSISTANCE				22		22	22		22
FAILED TO ASSURE THE GEAR WAS DOWN AND LOCKED				18		18	18		18
INITIATED FLIGHT IN ADVERSE WEATHER CONDITIONS	28		28	15	2	17	43	2	45
SPONTANEOUS-IMPROPER ACTION				11	3	14	11	3	14
MISJUDGED DISTANCE, SPEED, AND ALTITUDE	4	1	5	15		15	19	1	20
MISJUDGED DISTANCE AND SPEED	7	1	8	219	3	222	226	4	230
MISJUDGED DISTANCE				2	1	3	2	1	3
MISJUDGED DISTANCE AND ALTITUDE	12	1	13	101	1	102	113	2	115
MISJUDGED SPEED AND ALTITUDE				5		5	5		5
MISJUDGED SPEED				17	3	20	17	3	20
MISJUDGED SPEED AND CLEARANCE	2		2	4		4	6		6
MISJUDGED ALTITUDE AND CLEARANCE	12		12	28		28	40		40
MISJUDGED ALTITUDE	9	2	11	10		10	19	2	21
MISJUDGED CLEARANCE	16		16	80		80	96		96
INADEQUATE TRAINING OF STUDENT				2		2	2		2
MISUNDERSTANDING OF ORDERS OR INSTRUCTIONS				1		1	1		1
IMPROPER RECOVERY FROM BOUNCED LANDING				127		127	127		127
INCAPACITATION	9	2	11	1		1	10	2	12
PHYSICAL IMPAIRMENT	28	17	45	8	6	14	36	23	59
SPATIAL DISORIENTATION	80		80	15		15	95		95
PSYCHOLOGICAL CONDITION		1	1					1	1
MISUSED OR FAILED TO USE FLAPS	5	4	9	19	12	31	24	16	40
LEFT AIRCRAFT UNATTENDED ENGINE RUNNING				1		1	1		1
FAILED TO MAINTAIN DIRECTIONAL CONTROL	3		3	380	1	381	383	1	384
SELECTED WRONG RUNWAY RELATIVE TO EXISTING WIND	5	1	6	64	10	74	69	11	80
FAILED TO ABORT TAKEOFF	6	1	7	54	2	56	60	3	63
FAILED TO INITIATE GO-AROUND	2		2	182	1	183	184	1	185
DIRECT ENTRIES	11		11	4		4	15		15
SUBTOTAL	1033	141	1174	4437	324	4761	5470	465	5935

CAUSE/FACTOR TABLE

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
COPILOT									
DIVERTED ATTENTION FROM OPERATION OF AIRCRAFT				1		1	1		1
FAILED TO OBTAIN/MAINTAIN FLYING SPEED				2		2	2		2
IMPROPER OPERATION OF POWERPLANT + POWERPLANT CONTROLS				1		1	1		1
IMPROPER OPERATION OF BRAKES AND/OR FLIGHT CONTROLS				2		2	2		2
IMPROPER OPERATION OF FLIGHT CONTROLS				1		1	1		1
INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING				1		1	1		1
LACK OF FAMILIARITY WITH AIRCRAFT				1	2	2	1	2	2
MISJUDGED DISTANCE AND SPEED				1		1	1		1
MISJUDGED DISTANCE AND ALTITUDE				1		1	1		1
MISJUDGED SPEED				1		1	1		1
IMPROPER RECOVERY FROM BOUNCED LANDING				1		1	1		1
MISUSED OR FAILED TO USE FLAPS				1		1	1		1
FAILED TO MAINTAIN DIRECTIONAL CONTROL				2		2	2		2
SUBTOTAL				15	2	17	15	2	17
DUAL STUDENT									
DIVERTED ATTENTION FROM OPERATION OF AIRCRAFT				1		1	1		1
FAILED TO EXTEND LANDING GEAR				2		2	2		2
INADVERTENTLY RETRACTED GEAR				1		1	1		1
FAILED TO SEE OTHER AIRCRAFT	1		1	1		1	2		2
FAILED TO SEE AND AVOID OBJECTS OR OBSTRUCTIONS				1		1	1		1
FAILED TO OBTAIN/MAINTAIN FLYING SPEED	4		4	7		7	11		11
MISJUDGED DISTANCE, SPEED, ALTITUDE OR CLEARANCE				1		1	1		1
FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES, ETC				1		1	2		2
IMPROPER OPERATION OF POWERPLANT + POWERPLANT CONTROLS	1		1	2	1	3	2	1	3
IMPROPER OPERATION OF BRAKES AND/OR FLIGHT CONTROLS				2		2	7		7
IMPROPER OPERATION OF FLIGHT CONTROLS	2		2	5		5	1		1
PREMATURE LIFT-OFF				1		1	8		8
IMPROPER LEVEL OFF				8		8	1		1
IMPROPER IN-FLIGHT DECISIONS OR PLANNING				1		1	1		1
IMPROPER COMPENSATION FOR WIND CONDITIONS				1		1	1		1
INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING				1		1	1		1
MISMANAGEMENT OF FUEL				1		1	1		1
FAILED TO ASSURE THE GEAR WAS DOWN AND LOCKED				1		1	2		2
FAILURE TO RELINQUISH CONTROL	1		1	1		1	1	1	2
CONTROL INTERFERENCE				1	1	2	3	1	3
SPONTANEOUS-IMPROPER ACTION				3		3	3		4
MISJUDGED DISTANCE AND SPEED				4		4	4		6
MISJUDGED DISTANCE AND ALTITUDE				6		6	6		1
MISJUDGED ALTITUDE				1		1	1		2
IMPROPER RECOVERY FROM BOUNCED LANDING				2		2	2		1
MISUSED OR FAILED TO USE FLAPS				1		1	1		1
FAILED TO MAINTAIN DIRECTIONAL CONTROL				11		11	11		11
FAILED TO INITIATE GO-AROUND				1		1	1		1
SUBTOTAL	9		9	68	2	70	77	2	79
CHECK PILOT									
FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES, ETC		1	1					1	1
IMPROPER OPERATION OF BRAKES AND/OR FLIGHT CONTROLS				1		1	1		1
IMPROPER OPERATION OF FLIGHT CONTROLS				1		1	4		5
INADEQUATE SUPERVISION OF FLIGHT	1		1	4		4	4	1	1
SELECTED UNSUITABLE TERRAIN				1		1	1		1
MISJUDGED DISTANCE, SPEED, AND ALTITUDE				1		1	1		1
IMPROPER RECOVERY FROM BOUNCED LANDING				1		1	1		1
FAILED TO INITIATE GO-AROUND				1		1	1		1
SUBTOTAL	2		2	10		10	10	2	12
** PERSONNEL **									
FLIGHT INSTRUCTOR									
INADEQUATE SUPERVISION OF FLIGHT		1	1	10	9	19	10	10	20
INADEQUATE TRAINING OF STUDENT	1		1	3	6	9	4	6	10
MAINTENANCE, SERVICING, INSPECTION									
IMPROPER MAINTENANCE (MAINTENANCE PERSONNEL)	4		4	42	4	46	46	4	50
IMPROPER MAINTENANCE (OWNER PERSONNEL)		3	3	4		4	4	3	7
IMPROPERLY SERVICED AIRCRAFT (OWNER-PILOT)				2	3	5	2	3	5
INADEQUATE INSPECTION OF AIRCRAFT (MAINTENANCE PERSONNEL)	4	1	5	9	2	11	13	3	16
INADEQUATE INSPECTION OF ACFT (OWNER-PILOT PERSONNEL)				5		5	5		5
INADEQUATE MAINTENANCE AND INSPECTION	14	4	18	93	10	103	107	14	121
OTHER				1	1	2	1	1	2
OPERATIONAL SUPERVISORY PERSONNEL									
INADEQUATE FLIGHT TRAINING-PROCEDURES		1	1					1	1
INADEQUATE GROUND TRAINING-PROCEDURES	1		1				1		1

CAUSE/FACTOR TABLE

PERSONNEL (CONTINUED)

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
INADEQUATE SUPERVISION OF FLIGHT CREW	1	3	4	1		1	2	3	5
FAILURE TO PROVIDE ADED DIRECTIVES, MANUALS, EQUIPMENT		1	1	1		1	1	1	2
WEATHER PERSONNEL									
INCORRECT WEATHER FORECAST	1	4	5		3	3	1	7	8
TRAFFIC CONTROL PERSONNEL									
FAILURE TO ADVISE OF UNSAFE WEATHER CONDITION		1	1					1	1
FAILURE TO ADVISE OF OTHER TRAFFIC				2	2	4	2	2	4
INADEQUATE SPACING OF AIRCRAFT				2		2	2		2
FAILURE TO PROPERLY IDENTIFY AIRCRAFT ON RADAR	1		1				1		1
OTHER				1	2	3	1	2	3
AIRPORT SUPERVISORY PERSONNEL									
IMPROPER MAINTENANCE-AIRPORT FACILITIES				1	1	2	1	1	2
FAILURE TO NOTIFY OF UNSAFE COND/AND OR FAILURE TO MARK				3		5	3	2	5
IMPROPER/INADEQUATE SNOW REMOVAL				2	2	4	2	2	4
OTHER				1	1	2	1	1	2
AIRWAYS FACILITIES PERSONNEL									
PRODUCTION-DESIGN-PERSONNEL									
SUBSTANDARD QUALITY CDNTROL	1		1	4		4	5		5
INCORRECT FACTORY INSTALLATION				1		1	1		1
POOR/INADEQUATE DESIGN				6	2	8	6	2	8
OTHER		2	2	5	1	6	5	3	8
MISCELLANEOUS-PERSONNEL									
PILOT OF OTHER AIRCRAFT	33	1	34	35	5	40	68	6	74
GROUND CREWMAN				1	1	2	2	1	3
PASSENGER	4		4	6	3	9	10	3	13
DRIVER OF VEHICLE				6	5	11	6	5	11
OTHER	2		2	5	2	7	7	2	9
DIRECT ENTRIES				1		1	1		1
THIRD PILOT									
FLIGHT ENGINEER									
FLIGHT PERSONNEL									
DISPATCHING (AIR CARRIER ONLY)									
SUBTOTAL	68	22	90	253	67	320	321	89	410
** AIRFRAME **									
WINGS									
SPARS	2	1	3	2		2	4	1	5
RIBS, STRINGERS, CAP STRIPS				1		1	1		1
WING ATTACHMENT FITTINGS, BOLTS	1		1				1		1
SKIN AND ATTACHMENTS	2	1	3	1	1	2	3	2	5
NACELLES, PODS, PYLONS				1		1	1		1
OTHER	2		2	1		1	3		3
FUSELAGE									
DOORS, DOOR FRAMES				2	6	8	2	6	8
WINDSHIELDS, WINDOWS, CANOPIES				1	1	2	1	1	2
SEATS				8		8	8	1	9
WHEEL WELL DOORS		1	1	1		1	1		1
OTHER				1		1	1		1
LANDING GEAR									
MAIN GEAR-SHOCK ABSORBING ASSY, STRUTS, ATTACHMENTS, ETC				12	1	13	12	1	13
NORMAL RETRACTION/EXTENSION ASSEMBLY				27	3	30	27	3	30
EMERGENCY/EXTENSION ASSEMBLY				11		11	11		11
TAILWHEEL ASSEMBLIES				9	6	15	9	6	15
NOSEWHEEL ASSEMBLIES				7	2	9	7	2	9
WHEELS, TIRES, AXLES				12	2	14	12	2	14
SKI ASSEMBLIES				1		1	1		1
FLOAT ASSEMBLIES				1		1	1		1
BRAKING SYSTEM (NORMAL)									
BRAKING SYSTEM (EMERGENCY)		1	1	37	14	51	37	15	52
LANDING GEAR WARNING AND INDICATING COMPONENTS				1	1	1	1	1	1
GEAR LOCKING MECHANISM				15	1	16	15	1	16
SWITCHES, LEVERS, CRANKING MECHANISM, ETC	1		1	2	1	3	3	1	4
NOSEWHEEL STEERING				5	2	7	5	2	7
OTHER				2		2	2		2
FLIGHT CONTROL SURFACES									
ELEVATOR, ASSEMBLY ATTACHMENTS				2		2	2		2
RUDDER, SURFACES ATTACHMENTS				1		1	1		1
AILERON, SURFACES ATTACHMENTS	1		1	1		1	1		1
HORIZONTAL STABILIZER, ATTACHMENTS	2	1	3	1	1	2	3	2	5
VERTICAL STABILIZER, ATTACHMENTS	2		2	1		1	3		3
SPOILERS AND SLOTS-LEADING EDGE FLAPS, SPEED BRAKES				1		1	1		1
OTHER					1	1		1	1
SUBTOTAL	13	5	18	168	55	223	181	60	241

CAUSE/FACTOR TABLE

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
** POWERPLANT **									
ENGINE STRUCTURE									
CRANKSHAFT	2		2	12		12	14		14
MASTER AND CONNECTING RODS	1		1	19		19	20		20
CYLINDER ASSEMBLY	2		2	14	1	15	16	1	17
PISTON, PISTON RINGS				17		17	17		17
VALVE ASSEMBLIES	4		4	23		23	27		27
BLOWER, IMPELLER ASSEMBLY				7		7	7		7
MDUNT AND VIBRATION ISOLATORS					1	1		1	1
OTHER		1	1	9		9	9	1	10
IGNITION SYSTEM									
MAGNETOES				11		11	11		11
SPARK PLUG	1		1	12	3	15	13	3	16
COILS				1		1	1		1
SWITCHES				1		1	1		1
LEADS	1		1	2		2	3		3
FUEL SYSTEM									
TANKS				2		2	2		2
LINES AND FITTINGS	2		2	15	1	16	17	1	18
SELECTOR VALVES	2		2	5	4	9	7	4	11
FILTERS, STRAINERS, SCREENS				5		5	5		5
CARBURETOR	1		1	24		24	25		25
PUMPS	4		4	8	2	10	12	2	14
FUEL INJECTION SYSTEM				6		6	9		9
VENTS, DRAINS, TANK CAPS	3		3	5		5	5		5
RAM AIR ASSEMBLY				7		7	7		7
OTHER		1	1	4	3	7	4	4	8
LUBRICATING SYSTEM									
LINES, HOSES, FITTINGS	3		3	9		9	12		12
VALVES				4		4	4		4
FILTERS, SCREENS	1		1				1		1
PUMP-PRESSURE				2		2	2		2
PUMPS-SCAVENGER				1		1	1		1
OIL COOLERS				1		1	1		1
MAGNETIC PLUGS				1		1	1		1
SEALS AND GASKETS				1		1	1		1
OTHER				7		7	7		7
COOLING SYSTEM									
CDWLING					1	1		1	1
PROPELLER AND ACCESSORIES									
BLADES	1		1	6		6	7		7
HUBS	1		1	4		4	5		5
HYDRAULIC PITCH CONTROL MECHANISM					1	1		1	1
SPINNERS, DOMES				1		1	1		1
GOVERNORS				4		4	4		4
BLADE RETENTION MECHANISM				2		2	2		2
METAL CAP, BLADE LEADING EDGE				1		1	1		1
OTHER	1		1	2		2	3		3
EXHAUST SYSTEM									
MANIFOLDS					1	1		1	1
MUFFLERS	1		1	1		1	2		2
STACKS				2		2	2		2
EXTERNAL SUPERCHARGER				2	1	3	2	1	3
ENGINE ACCESSORIES									
VACUUM PUMPS		1	1		1	1		2	2
STARTERS					1	1		1	1
OTHER				2		2	2		2
ENGINE CONTROLS									
THROTTLE-POWER LEVER ASSEMBLIES				1		1	1		1
MIXTURE CONTROL ASSEMBLIES				20		20	20		20
INDUCTION AIR, PREHEAT CONTROLS				5		5	5		5
POWERPLANT-INSTRUMENTS									
POWER INDICATORS					1	1		1	1
FUEL PRESSURE GAUGE					1	1		1	1
FUEL QUANTITY GAUGE		1	1		15	15		16	16
MISCELLANEOUS									
POWERPLANT FAILURE FOR UNDETERMINED REASONS	22		22	162		162	184		184
FOREIGN OBJECT DAMAGE		1	1	1		1	1	1	2
DETONATION				1		1	1		1
DIRECT ENTRIES				1		1	1		1
REDUCTION GEAR ASSEMBLY									
GEARS, REDUCTION				1		1	1		1
GEARS, ACCESSORY DRIVE				2		2	2		2
COMPRESSOR ASSEMBLY									
COMBUSTION ASSEMBLY									
TURBINE ASSEMBLY									

CAUSE/FACTOR TABLE

POWERPLANT (CONTINUED)

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
WHEEL, TURBINE				1		1	1		1
ACCESSORY DRIVE ASSEMBLY									
LUBRICATING SYSTEM									
MAGNETIC PLUG				1		1	1		1
FUEL SYSTEM									
SAFETY SYSTEM									
IGNITION SYSTEM									
TORQUEMETER									
AIR BLEED									
EXHAUST SYSTEM									
THRUST REVERSER									
PROPELLER SYSTEM									
CONSTANT SPEED DRIVE									
POWER LEVER									
PROPELLER LEVER									
REVERSE THRUST LEVER									
ENGINE INDICATING EQUIPMENT									
ENGINE INSTALLATION									
SUBTOTAL	53	5	58	462	38	500	515	43	558
** SYSTEMS **									
ELECTRICAL SYSTEM									
BATTERIES				1		1	1		1
GENERATORS/ALTERNATORS		2	2	3	2	5	3	4	7
RECTIFIER				1		1	1		1
REGULATOR	1		1					1	1
RELAYS AND WIRING				1		1	1		1
MOTORS				1	1	2	1	1	2
HYDRAULIC SYSTEM									
HYDRAULIC PUMPS				1		1	1		1
RESERVOIR, LINES, FITTINGS				5		5	5		5
SEALS				1		1	1		1
FLIGHT CONTROL SYSTEMS									
AILERON AND AILERON TAB CONTROL SYSTEM	1		1	4		4	5		5
ELEVATOR AND ELEVATOR TAB CONTROL SYSTEM	1		1	6		6	7		7
RUDDER AND RUDDER TAB CONTROL SYSTEM	1		1	2		2	3		3
OTHER				1		1	1		1
ANTI-ICING, DE-ICING SYSTEMS									
CARBURETOR DE-ICING SYSTEM				1		1	1		1
AIR CONDITION, HEATING AND PRESSURIZATION									
AUTO PILOT									
OTHER				1		1	1		1
FIRE WARNING SYSTEM									
FIRE EXTINGUISHER SYSTEM									
OXYGEN SYSTEM									
OTHER SYSTEMS									
PITOT SYSTEM					1	1		1	1
VACUUM SYSTEM	1		1		1	1	1	1	2
OTHER					1	1		1	1
DIRECT ENTRIES	1		1				1		1
SUBTOTAL	5	3	8	29	6	35	34	9	43
** INSTRUMENTS/EQUIPMENT AND ACCESSORIES **									
FLIGHT AND NAVIGATION INSTRUMENTS									
AIR SPEED		1	1		1	1		2	2
DIRECTIONAL GYRO		1	1					1	1
COMPASS					1	1		1	1
COMMUNICATIONS AND NAVIGATION EQUIPMENT									
TRANSMITTERS AND/OR RECEIVERS		1	1		2	2		3	3
ILS RECEIVERS					1	1		1	1
VOR RECEIVERS	1		1	1	3	4	2	3	5
OTHER					3	3		3	3
MISCELLANEOUS EQUIPMENT									
SPRAY, DUSTING EQUIPMENT		1	1	1	4	5	1	5	6
PICK-UP EQUIPMENT					1	1		1	1
OTHER				1		1	1		1
SUBTOTAL	1	4	5	3	16	19	4	20	24
** AIRPORTS/AIRWAYS/FACILITIES **									
AIRPORT FACILITIES									

CAUSE/FACTOR TABLE

AIRPORTS/AIRWAYS/FACILITIES (CONTINUED)

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
RUNWAY LIGHTING					9	9		10	10
RAMP FACILITIES		1	1		1	1		1	1
TAXIWAY LIGHTING AND MARKING					3	3		3	3
OTHER					7	7		8	8
AIRPORT CONDITIONS	1		1						
WET RUNWAY									
ICE/SLUSH ON RUNWAY				7	36	43	7	36	43
SNOW ON RUNWAY				5	13	18	5	13	18
SNOW WINDROWS	1		1	6	45	51	6	46	52
UNMARKED OBSTRUCTIONS				4	49	53	4	49	53
SOFT SHOULDERS (RUNWAY)				1	8	9	1	8	9
ROUGH WATER				2	21	23	2	21	23
HIGH VEGETATION					1	1		1	1
HIDDEN HAZARD	1		1	6	22	28	6	23	29
POORLY MAINTAINED RUNWAY SURFACE				10	6	16	10	6	16
SOFT RUNWAY	1		1	4	18	22	4	19	23
WET RAMP/TAXIWAY				6	20	26	6	20	26
ICE/SLUSH ON RAMP/TAXIWAY					1	1		1	1
SNOW ON RAMP/TAXIWAY					2	2		2	2
SOFT SHOULDERS (RAMP/TAXIWAY)				1	4	5	1	4	5
SOFT TAXIWAY					4	4		4	4
OTHER					1	1		1	1
AIRWAYS FACILITIES	4		4	9	76	85	9	80	89
H FACILITY									
SUBTOTAL					1	1		1	1
** WEATHER **		9	9	61	348	409	61	357	418
LOW CEILING									
RAIN	1	133	134	1	50	51	2	183	185
FOG		44	44		28	28		72	72
SNOW	2	91	93	1	49	50	3	140	143
HAIL		23	23	1	19	20	1	42	43
ICING CONDITIONS--INCLUDES SLEET, FREEZING RAIN, ETC		2	2					2	2
CONDITIONS CONDUCTIVE TO CARB/INDUCTION SYSTEM ICING	1	17	18	3	22	25	4	39	43
UNFAVORABLE WIND CONDITIONS		5	5		48	48		53	53
WIND SHEAR		13	13	59	221	280	59	234	293
SUDDEN WINDSHIFT	2		2	4	3	7	6	3	9
TURBULENCE IN FLIGHT, CLEAR AIR		1	1	9	10	19	9	11	20
TURBULENCE ASSOCIATED WITH CLOUDS AND/OR THUNDERSTORMS		2	2	4	8	12	4	10	14
DOWNDRAFTS, UPDRAFTS	4	14	18	1	6	7	5	20	25
LOCAL WHIRLWIND	3	13	16	13	34	47	16	47	63
LIGHTNING STRIKE				4	3	7	4	3	7
SQUALL LINE				1		1	1		1
ADVERSE WINDS ALOFT					1	1		1	1
HIGH TEMPERATURE					5	5		5	5
OBSTRUCTIONS TO VISION		3	3		15	15		18	18
HIGH DENSITY ALTITUDE		3	3		9	9		12	12
THUNDERSTORM ACTIVITY	1	22	23		51	51	1	73	74
OTHER	3	22	25	2	17	19	5	39	44
SUBTOTAL		1	1		4	4		5	5
** TERRAIN **		17	409	426	103	603	706	120	1012
1132									
WET, SOFT GROUND									
SNOW-COVERED		2	2	38	83	121	38	85	123
ICY		1	1	8	26	34	8	27	35
HIGH VEGETATION				2	4	6	2	4	6
HIDDEN OBSTRUCTIONS	3	2	5	30	47	77	33	49	82
ROUGH/UNEVEN				9	3	12	9	3	12
ROUGH WATER	1	6	7	103	185	288	104	191	295
GLASSY WATER		1	1	1	4	5	1	5	6
HIGH OBSTRUCTIONS				1	5	6	1	5	6
LOOSE GRAVEL	6	127	133	75	344	419	81	471	552
SANDY					4	4		4	4
OTHER		8	8	4	8	12	4	8	12
SUBTOTAL				20	63	83	20	71	91
** MISCELLANEOUS **		10	147	157	291	776	1067	301	923
1224									
SUICIDE									
FOREIGN OBJECT DAMAGE	1		1				1		1
SMOKE IN COCKPIT				3		3	3		3
					1	1		1	1

CAUSE/FACTOR TABLE

MISCELLANEOUS (CONTINUED)

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
FOREIGN MATERIAL AFFECTING NORMAL OPERATIONS	2		2	31		31	33		33
UNDETERMINED	38		38	22		22	60		60
BIRD COLLISION				2		2	2		2
VORTEX TURBULENCE				6	1	7	6	1	7
PROP/JET/ROTOR BLAST				5		5	5		5
ANIMAL(S) ON RUNWAY/TAXIWAY/RAMP	1		1	5	1	6	6	1	7
EVASIVE MANEUVER TO AVOID COLLISION	4		4	37	10	47	41	10	51
UNQUALIFIED PERSON OPERATED AIRCRAFT	2	2	4	7	6	13	9	8	17
SABOTAGE				3		3	3		3
DIRECT ENTRIES	3	1	4	4	2	6	7	3	10
SUBTOTAL	51	3	54	125	21	146	176	24	200
GRAND TOTAL	1260	750	2010	6025	2258	8283	7285	3008	10293
** MISCELLANEOUS ACTS, CONDITIONS **									
FIRE OF UNDETERMINED ORIGIN		3	3	1	3	4	1	6	7
UNAPPROVED MODIFICATION	1	1	2	1	1	1	1	2	3
IMPROPER/INADEQUATE VENTING				1		1	1		1
ACTION, LACK OF				1		1	1		1
POOR WELD				3		3	3		3
PREVIOUS DAMAGE	1		1	11	6	17	12	6	18
BRAKES FROZEN				1	1	2	1	1	2
LEAK/LEAKAGE	3	1	4	18	4	22	21	5	26
LOW FLUID LEVEL				4	1	5	4	1	5
CIRCUIT BREAKER POPPED					2	2	2	2	2
ARCING				2		2	2		2
LOW COMPRESSION				2	1	3	2	1	3
RUNWAY CLOSED		1	1	2	6	8	2	7	9
DOWNWIND		11	11		104	104		115	115
CARBON DEPOSITS	1		1	1		1	2		2
LANDED IN CONSTRUCTION AREA					2	2		2	2
UNDER TORQUED	1		1	2		2	3		3
LOOSE, PART/FITTING				7		7	7		7
RENT				2	1	3	2	1	3
BINDING	1	1	2	5		5	6	1	7
BUCKLED				1	1	2	1	1	2
BURNED	1		1	2		2	3		3
CHAFFED				7		7	7		7
COLLAPSED				2		2	2		2
DETERIORATED	4		4	4		4	8		8
DISCONNECTED	3		3	32		32	35		35
ELONGATED				2		2	2		2
EXCESSIVE-WEAR/PLAY	2		2	7	4	11	9	4	13
ERRATIC	1	1	2	3	16	19	4	17	21
FLUTTER	1		1	2		2	3		3
FRAYED				1		1	1		1
GROUNDED				6	1	7	6	1	7
IMPROPERLY INSTALLED	2		2	20		20	22		22
JAMMED				3	1	4	3	1	4
NICKED				1		1	1		1
OBSTRUCTED	2		2	20	1	21	22	1	23
OPEN		1	1		1	1		2	2
OVERHEATED				6	1	7	6	1	7
PRESSURE TOO LOW				5	1	6	5	1	6
PRESSURE, NONE				4	2	6	4	2	6
SCORED				1		1	1		1
SHEARED	2		2	6		6	8		8
STICKING				1		1	1		1
STRIPPED					1	1		1	1
STUCK				7	1	8	7	1	8
EXCESSIVE TEMPERATURE		1	1	2		2	2	1	3
TEMPERATURE TOO LOW				1		1	1		1
VIBRATION, EXCESSIVE				1	2	3	1	2	3
CONGESTED RAMP/TAXIWAY				1	2	3	1	2	3
ICE-INDUCTION	1		1	1		1	2		2
FIRE IN WING		1	1					1	1
LOAD NOT JETTISONED					16	16		16	16
FAILED TO USE LANDING LIGHT(S)		1	1					1	1
INTENTIONAL GROUND-WATER LOOP-SWERVE				33	4	37	33	4	37
INTENTIONAL WHEELS UP				13	7	20	13	7	20
RAN OFF END OF RUNWAY					139	139		139	139
ALTITUDE SETTING-INCORRECT	3	1	4	2		2	5	1	6
ANTI-ICING/DEICING EQUIP-IMPRDPER OPER. OF/FAILED TO USE	4		4	43		43	47		47

CAUSE/FACTOR TABLE

MISCELLANEOUS ACTS, CONDITIONS (CONTINUED)

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
CHECKLIST-FAILED TO USE				1	37	38	1	37	38
CREW COORDINATION-POOR				2	2	4	2	2	4
DISREGARD OF GOOD OPERATING PRACTICE	1	11	12	15	12	27	16	23	39
IMPROPER EMERGENCY PROCEDURES	1	1	2	7	4	11	8	5	13
FEATHERED WRONG ENGINE				2	2	2	2	2	2
GUST LOCKS ENGAGED				3		3	3		3
INSTRUCTIONS-MISINTERPRETED				1	1	1	1		1
INSTRUMENTS-MISREAD OR FAILED TO READ	4		4		2	2	4	2	6
SEAT BELT NOT FASTENED	1	3	4				1	3	4
NOT ALLIGNED WITH RUNWAY/INTENDED LANDING AREA	1		1	16	12	28	17	12	29
UNWARRANTED LOW FLYING	38	25	63	30	19	49	68	44	112
FAILED TO EXTEND THE LANDING FLAPS	1	1	2		1	1	1	2	3
FAILED TO USE ALL AVAILABLE RUNWAY				2	3	5	2	3	5
LANDED AT WRONG AIRPORT					3	3		3	3
INATTENTIVE TO FUEL SUPPLY	1	1	2	27	10	37	28	11	39
FLEW INTO BLIND CANYON	7	2	9	8	3	11	15	5	20
PREMATURE FLAP RETRACTION		1	1		1	1		2	2
POORLY PLANNED APPROACH	3	14	17	11	68	79	14	82	96
MISCALCULATED FUEL CONSUMPTION				12	4	16	12	4	16
JETTISONED LOAD				1	20	21	1	20	21
STOLEN OR UNAUTHORIZED USE OF AIRCRAFT		6	6		18	18		24	24
LANDED ON FOAMED RUNWAY					4	4		4	4
IMPROPERLY SECURED	1		1	24	4	28	25	4	29
BOGUS PART					1	1		1	1
COMMUNICATIONS FAILURE					2	2		2	2
ELECTRICAL FAILURE		1	1	3	4	7	3	5	8
ENGINE LOADED UP	1		1	15	1	16	16	1	17
FATIGUE FRACTURE	8		8	27		27	35		35
FUEL GRADE-IMPROPER		1	1	3	2	5	3	3	6
HYDRAULIC FAILURE				6		6	6		6
RPM-UNCONTROLLABLE-OVERSPEED				1		1	1		1
WINDSHIELD, DIRTY, FOGGY, ETC-RESTRICTED VISION				4	11	15	4	11	15
WRONG PART		1	1	6		6	6		6
IMPROPER ALIGNMENT/ADJUSTMENT	1	1	2	12	2	14	13	3	16
FAILURE OF TWO OR MORE ENGINES	3	4	7	4	8	14	9	12	21
SEPARATION IN FLIGHT		31	31	1	17	18	1	48	49
FIRE IN CABIN/ COCKPIT/ BAGGAGE COMPARTMENT	1	1	2	1	2	3	2	3	5
FIRE IN ENGINE				7	4	11	7	4	11
CORRODED/CORROSION	1	1	2	2	1	3	3	2	5
INCORRECT TRIM SETTING	1	1	2	1	4	4	1	5	6
CARGO SHIFTED	1	1	2	1	1	1	1	2	3
CONGESTED TRAFFIC-PATTERN		2	2					2	2
PILOT FATIGUE	1	10	11		14	14	1	24	25
FUEL EXHAUSTION	11		11	202		202	213		213
FUEL CONTAMINATION-EXCLUSIVE OF WATER IN FUEL	1		1	10		10	11		11
PILOT SUFFERED HEART ATTACK	4		4				4		4
ALCOHOLIC IMPAIRMENT OF EFFICIENCY AND JUDGMENT	28	15	43	4	4	8	32	19	51
HYPOXIA	1		1				1		1
CARBON MONOXIDE POISONING		1	1					1	1
ICE-IN FUEL				3	1	4	3	1	4
ICE-ENGINE				2		2	2		2
ICE-CARBURETOR	4		4	42	1	43	46	1	47
ICE-PROPELLER				1		1	1		1
AIRFRAME ICE	10	3	13	13	6	19	23	9	32
ICE-WINDSHIELD	1	1	2	1	5	6	2	6	8
IMPROPERLY LOADED AIRCRAFT-WEIGHT-AND/OR CG	2	14	16	9	5	14	11	19	30
INTERFERENCE WITH FLIGHT CONTROLS	1		1	6	4	10	7	4	11
WHITEDOUT		2	2	3	2	5	3	4	7
SUNGLARE	1	5	6	4	23	27	5	28	33
LACK OF LUBRICATION-SPECIFIC PART, NOT SYSTEM				7		7	7		7
OIL EXHAUSTION-ENGINE LUBRICATION SYSTEM	2		2	24	1	25	26	1	27
SIMULATED CONDITIONS	3	3	6	17	12	29	20	15	35
WATER IN FUEL	2		2	38	1	39	40	1	41
AIRCRAFT CAME TO REST IN WATER		30	30		55	55		85	85
FROZEN, MOISTURE					1	1		1	1
MISSING				11		11	11		11
TOUCH AND GO LANDING		4	4		50	50		54	54
HYDROPLANING ON WET RUNWAY				1	1	2	1	1	2
OVERLOAD FAILURE	12	11	23	14	519	533	26	530	556
MATERIAL FAILURE	8	1	9	138	8	146	146	9	155
FUEL STARVATION	14		14	144	1	145	158	1	159
OIL STARVATION				4		4	4		4
IMPROPER CLEARANCE-TOLERANCE	2		2	4	1	5	6	1	7
FUEL SELECTOR POSITIONED BETWEEN TANKS	1		1	9		9	10		10

CAUSE/FACTOR TABLE

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL

DIRECT ENTRY CAUSES

MISC-FUEL EXHAUSTION FOR UNDETERMINED REASON
 PILOT-DID NOT MAINTAIN POS RATE OF CLB DRG GOARND
 PILOT-VISUAL FLT AT ALT INSUF TO CLR OBST TRRN
 PILOT-ATMTO VFR FLT AT ALT INSUF TO CLR OBST TRRN
 PILOT-METRO COND NOT ADEQUATE FOR VIS REFERENCE
 PILOT-ATMTO VFR FLT AT ALT INSUF TO CLR MI OBSTN
 PILOT-DID NOT MAINTAIN POS RATE OF CLB AFTR TKOP
 PILOT-ATMTO VFR FLT AT ALT INSUF TO CLR OBST TRRN
 PILOT-METRO COND NOT ADEQUATE FOR TRRN ASSESSMENT
 MISC-ONE OF A/S LT BULBS FAILED.UN SEE A/S IND OK.
 MISC - OTHER ACFT BRAKES FAILED
 PILOT-METRO COND NOT ADEQUATE FOR TRRN ASSESSMENT
 PILOT-R SEAT RELUCTANT COPE WITH EMGCY FM THIS PSN
 PILOT-INADVERTENTLY SWITCHED IGN OFF DURING FLIGHT
 MISC-WINDSHIELD ICED OVER DR FOGGED UP
 PILOT FAILED TO MAINTAIN ADEQUATE SEPARATION
 PILOT FAILED TO MAINTAIN ADEQUATE SEPARATION
 PWR PLT-ACTUATING LEVER WORKED OFF METERING SHAFT
 PILOT-DELAYED ACRO MANEUVER RECOVERY
 SYSTEMS-GYRO FLT INST FAILED FOR UNKNOWN REASON
 PILOT-FAILED TO MAINTAIN POSITIVE RATE OF CLIMB
 MISC-AFT CARGO DOOR CAME OPEN DURING TAKEOFF
 PILOT-MISIDENTIFIED POSITION ON AIRPORT
 PERSONNEL - PREHEATING OIL SYSTEM INADEQUATE.
 MISC - JEPPESEN J-AID RECOMMENDED WRONG LANDING RWY
 MISC - JEPPESEN J-AID RECOMMENDED WRONG LANDING RWY
 FLT CONTROL INTERFERENCE BY UNRESTRAINED DOG
 PILOT - FAILED TO MAINTAIN POSITIVE RATE OF CLIMB

DIRECT ENTRY CAUSES ARE CARRIED UNDER THEIR APPROPRIATE CAUSAL CATEGORIES AND ARE INCLUDED IN THE TOTALS

ANALYTIC TABLE

KIND OF FLYING BY INJURY INDEX
SMALL FIXED WING

KIND OF FLYING	INJURY INDEX				RECORDS	ACCIDENTS	PERCENT
	FATAL	SERIOUS	MINOR	NONE			
<u>INSTRUCTIONAL</u>							
DUAL	28	7	22	119	176	176	4.55
SOLO	12	11	15	132	170	170	4.40
CHECK	3	2	3	6	14	14	.36
TRAINING	13	6	17	101	137	136	3.54
<u>NONCOMMERCIAL</u>							
PLEASURE	405	214	285	1208	2112	2104	54.63
PRACTICE	13	6	18	94	131	130	3.39
BUSINESS	60	21	35	164	280	280	7.24
CORPORATE/EXECUTIVE	10	4	3	28	45	45	1.16
AERIAL SURVEY		4	1	4	9	9	.23
COMPANY FLIGHT							
OTHER	5	2		1	8	8	.21
<u>COMMERCIAL</u>							
AERIAL APPLICATION	28	30	34	135	227	225	5.87
CROP CONTROL RELATED FLIGHT	9	11	18	101	139	139	3.60
FIRE CONTROL	1				1	1	.03
FIRE CONTROL RELATED FLIGHT							
AERIAL MAPPING/PHOTOGRAPHY	2	1		1	4	4	.10
AERIAL ADVERTISING		1	3	3	7	7	.18
POWER AND PIPELINE PATROL	5		1	2	8	8	.21
FISH SPOTTING	1		1	3	5	5	.13
AIR TAXI-PASSENGER OPERATIONS	23	19	10	62	108	106	2.79
AIR TAXI-CARGO OPERATIONS	13	2	7	26	48	48	1.24
CONSTRUCTION WORK							
SCHEDULED PASSENGER SERVICE							
SCHEDULED CARGO SERVICE							
INTRA-STATE CHARTER PASSG.							
INTRA-STATE CHARTER CARGO.							
MILITARY CONTRACT-PASSENGER							
MILITARY CONTRACT-CARGO							
CHARTER CARGO-DOMESTIC				2	2	2	.05
CHARTER PASSG-DOMESTIC							
CHARTER-CARGO-INTERNATIONAL							
CHARTER-PASSG-INTERNATIONAL							
OTHER	1	1	3		5	5	.13
UNKNOWN/NOT REPORTED							

ANALYTIC TABLE

KIND OF FLYING

FATAL
SERIOUS
MINOR
NONE

MISCELLANEOUS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
EXPERIMENTATION	1			1	2	2	.05
TEST	5	4	3	29	41	41	1.06
DEMONSTRATION	1	3	4	9	17	17	.44
FERRY	7	8	10	64	89	89	2.30
SEARCH AND RESCUE	2	1	1	2	6	6	.16
AIR SHOW/AIR RACING	7	1	3	4	15	14	.39
PARACHUTE JUMP	1	1	1	13	16	16	.41
PARACHUTE JUMP-AIR SHOW							
TOWING GLIDERS	1	2	1	3	7	7	.18
SEEDING CLOUDS							
HUNTING	5	1	2	3	11	11	.28
POLICE PATROL		1		1	2	2	.05
HIGHWAY TRAFFIC ADVISORY							
ALL OTHER PUBLIC FLYING	3	2	1	1	7	7	.18
OTHER	1	2	1	2	6	5	.16
UNKNOWN/NOT REPORTED	1	1		9	11	11	.28
RECORDS	667	362	501	2336	3866		
ACCIDENTS	645	360	499	2315		3819	
PERCENTS	17.3	9.4	13.0	60.4			

INJURIES, ACCIDENTS
SMALL FIXED WING

INJURIES

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	606	330	463	2467		3866
COPILOT	31	14	9	44		98
DUAL STUDENT	29	4	20	130		183
CHECK PILOT	2	2	3	5		12
FLIGHT ENGINEER						
NAVIGATOR		1		3		3
CABIN ATTENDANT	3	3		6		12
EXTRA CREW						
PASSENGERS	544	287	405	2114	1	3351
TOTAL	1215	641	900	4769	1	7526
* OTHER AIRCRAFT	1					1
OTHER GROUND	8	9	26	49		92
GRAND TOTAL	1224	650	926	4818	1	7619

INVOLVES 3819 TOTAL ACCIDENTS
INVOLVES 645 FATAL ACCIDENTS

* INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF THE TOTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

GENERAL AVIATION ACCIDENTS

LARGE FIXED-WING AIRCRAFT

ANALYTIC TABLE

TYPE OF ACCIDENT BY AIRCRAFT DAMAGE
LARGE FIXED WING

FIRST TYPE OF ACCIDENT	TYPE OF DAMAGE			RECORDS	ACCIDENTS	PERCENT
	DESTROYED	SUBSTANTIAL	MINOR NONE			
GROUND-WATER LOOP-SWERVE	3			3	3	12.50
DRAGGED WINGTIP PDD OR FLOAT						
WHEELS-UP LANDING	2			2	2	8.33
WHEELS-DOWN LANDING IN WATER						
GEAR COLLAPSED	1			1	1	4.17
GEAR RETRACTED						
HARD LANDING						
NOSE OVER/DOWN	1			1	1	4.17
ROLL OVER						
OVERSHOOT						
UNDERSHOOT	1			1	1	4.17
<u>COLLISION BETWEEN AIRCRAFT</u>						
BOTH IN FLIGHT						
ONE AIRBORNE						
BOTH ON GROUND						
<u>COLLISION WITH GROUND/WATER</u>						
CONTROLLED	2	1		3	3	12.50
UNCONTROLLED						
<u>COLLIDED WITH</u>						
WIRES/POLES						
TREES						
RESIDENCE/S						
BUILDING/S						
FENCE, FENCEPOSTS	1			1	1	4.17
ELECTRONIC TOWERS						
RUNWAY OR APPROACH LIGHTS						
AIRPORT HAZARD						
ANIMALS						
CROP						
FLAGMAN LOADER						
DITCHES	1			1	1	4.17
SNOWBANK						
PARKED AIRCRAFT (UNATTENDED)						
AUTOMOBILE						
DIRT BANK						
OTHER						
BIRD STRIKE	1			1	1	4.17

FIRST TYPE OF ACCIDENT	ANALYTIC TABLE				RECORDS	ACCIDENTS	PERCENT
	DESTROYED	SUBSTANTIAL	MINOR	NONE			
STALL	1				1	1	4.17
SPIN							
SPIRAL					1	1	4.17
MUSH	1						
<u>FIRE OR EXPLOSION</u>					2	2	8.33
IN FLIGHT	1	1					
ON GROUND							
<u>AIRFRAME FAILURE</u>							
IN FLIGHT		1			1	1	4.17
ON GROUND		1			1	1	4.17
ENGINE TEARAWAY					2	2	8.33
ENGINE FAILURE OR MALFUNCTION	1	1					
PROPELLER/ROTOR FAILURE							
PROPELLER							
TAIL ROTOR							
MAIN ROTOR							
PROP ROTOR ACDNT TO PERSON							
JET INTAKE/EXH ACDNT TO PERS							
PROPELLER/JET/ROTOR BLAST							
TURBULENCE							
HAIL DAMAGE TO AIRCRAFT							
LIGHTNING STRIKE							
EVASIVE MANEUVER							
UNCONTROLLED ALT DEVIATION							
DITCHING							
MISSING ACFT NOT RECOVERED					1	1	4.17
MISCELLANEOUS/OTHER			1		1	1	4.17
UNDETERMINED	1						
RECORDS	10	13	1		24		
ACCIDENTS	10	13	1			24	
PERCENTS	41.7	54.2	4.2	0			

ANALYTIC TABLE

PHASE OF OPERATION BY INJURY INDEX
LARGE FIXED WING

FIRST
OPERATIONAL PHASE

FATAL
SERIOUS
MINOR
NONE

RECORDS ACCIDENTS PERCENT

STATIC

STARTING ENGINE/S

IDLING ENGINE/S

1

1

1

4.17

ENGINE RUNUP

IDLING ROTORS

PARKED-ENGINES NOT OPERATING

OTHER

TAXI

TO TAKEOFF

FROM LANDING

1

1

2

2

8.33

OTHER

GROUND TAXI TO TAKEOFF

GROUND TAXI FROM LANDING

GROUND TAXI, OTHER

AERIAL TAXI TO TAKEOFF

AERIAL TAXI TO/FROM LANDING

AERIAL TAXI, OTHER

TAKEOFF

RUN

1

1

1

4.17

INITIAL CLIMB

1

1

2

2

8.33

VERTICAL

RUNNING (ROTORCRAFT/VTOL-STOL)

ABORTED (FIXED-WING)

1

1

2

2

8.33

ABORTED (ROTORCRAFT/VTOL)

ABORTED (ROTORCRAFT/STOL)

OTHER

INFLIGHT

CLIMB TO CRUISE

NORMAL CRUISE

1

1

1

4.17

DESCENDING

HOLDING (IFR)

HOVERING

POWER-ON DESCENT (ROTORCRAFT)

AUTOROTATIVE DESCENT

ACROBATICS

BUZZING

UNCONTROLLED DESCENT

ANALYTIC TABLE

FIRST OPERATIONAL PHASE	FATAL SERIOUS MINOR NONE				RECORDS	ACCIDENTS	PERCENT
EMERGENCY DESCENT	1				1	1	4.17
LOW PASS	1				1	1	4.17
OTHER	1				1	1	4.17
EN ROUTE TO TREAT CROP							
EN ROUTE TO RELOADING AREA							
SURVEY FIELD/AREA							
STARTING SWATH RUN							
SWATH RUN							
FLAREOUT FOR SWATH RUN							
PULLUP FROM SWATH RUN							
PROCEDURE TURNAROUND			1		1	1	4.17
CLEANUP SWATH		1			1	1	4.17
MANEUVER TO AVOID OBSTRUCTION							
RETURN TO STRIP							
<u>LANDING</u>							
TRAFFIC PATTERN-CIRCLING							
FINAL APPROACH (VFR)			2		2	2	8.33
INITIAL APPROACH							
FINAL APPROACH (IFR)	1				1	1	4.17
LEVEL OFF/TOUCHDOWN		1	2		3	3	12.50
ROLL (FIXED WING)			1	2	3	3	12.50
ROLL-ON/RUN-ON (ROTORCRAFT)							
POWER-ON LANDING (ROTORCRAFT)							
POWER-OFF AUTOROTATIVE LDG							
GO-AROUND (VFR)							
MISSED APPROACH (IFR)							
OTHER							
UNKNOWN/NOT REPORTED		1			1	1	4.17
RECORDS	8	3	2	11	24		
ACCIDENTS	8	3	2	11		24	
PERCENTS	33.3	12.5	8.3	45.8			

CAUSE/FACTOR TABLE
 LARGE FIXED WING
 ACCIDENTS WITH ASSIGNED CAUSES ONLY

INVOLVES 23 TOTAL ACCIDENTS
 INVOLVES 7 FATAL ACCIDENTS

BROAD CAUSE/FACTOR	FATAL ACCIDENTS		NONFATAL ACCIDENTS		ALL ACCIDENTS	
	CAUSE	TOTAL*	CAUSE	TOTAL*	CAUSE	TOTAL*
PILOT	6	4	9	1	15	5
	85.71	57.14	56.25	6.25	65.22	21.74
PERSONNEL	1	2	5	1	6	2
	14.29	14.29	31.25	6.25	26.09	8.70
AIRFRAME	.00	.00	1	1	2	1
	.00	.00	6.25	6.25	12.50	4.35
LANDING GEAR	.00	.00	3	.00	3	.00
	.00	.00	18.75	.00	18.75	13.04
POWERPLANT	.00	.00	2	1	3	1
	.00	.00	12.50	6.25	18.75	8.70
SYSTEMS	.00	.00	3	.00	3	.00
	.00	.00	18.75	.00	18.75	13.04
INSTRUMENTS/EQUIPMENT & ACCESSORIES	.00	.00	.00	.00	.00	.00
ROTORCRAFT	.00	.00	.00	.00	.00	.00
AIRPORT/AIRWAYS/FACILITIES	1	2	.00	2	3	4
	14.29	14.29	.00	12.50	4.35	13.04
WEATHER	2	2	1	2	3	4
	.00	28.57	6.25	12.50	18.75	17.39
TERRAIN	1	1	.00	1	1	2
	.00	14.29	.00	6.25	6.25	8.70
MISCELLANEOUS	.00	.00	1	.00	1	.00
	.00	.00	6.25	.00	6.25	4.35
UNDETERMINED	.00	.00	1	1	2	1
	.00	.00	6.25	.00	6.25	4.35

THE FIGURES OPPOSITE EACH CAUSAL CATEGORY REPRESENT THE NUMBER AND PERCENT OF ACCIDENTS IN WHICH THAT PARTICULAR CAUSAL CATEGORY WAS ASSIGNED

* IF AN ACCIDENT INCLUDES BOTH A CAUSE AND RELATED FACTOR IN THE SAME CAUSAL CATEGORY, THE ACCIDENT IS REPRESENTED ONCE UNDER THE TOTAL FOR THAT CATEGORY

CAUSE/FACTOR TABLE
LARGE FIXED WING
ACCIDENTS WITH ASSIGNED CAUSES ONLY

INVOLVES 23 TOTAL ACCIDENTS
INVOLVES 7 FATAL ACCIDENTS

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
** PILOT **									
PILOT IN COMMAND									
ATTEMPTED OPERATION W/KNOWN DEFICIENCIES IN EQUIPMENT		1	1					1	1
DELAYED ACTION IN ABORTING TAKEOFF	1		1	1		1	2		2
FAILED TO OBTAIN/MAINTAIN FLYING SPEED	2		2				2		2
FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES ETC	2		2	4	1	5	6	1	7
IMPROPER OPERATION OF POWERPLANT + POWERPLANT CONTROLS				1		1	1		1
IMPROPER OPERATION OF FLIGHT CONTROLS				2		2	2		2
IMPROPER IFR OPERATION	1		1				1		1
IMPROPER IN-FLIGHT DECISIONS OR PLANNING	1	1	2				1	1	2
IMPROPER COMPENSATION FOR WIND CONDITIONS				1		1	1		1
INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING	2	2	4	1	1	2	3	2	5
INADEQUATE SUPERVISION OF FLIGHT				1		1	1		1
LACK OF FAMILIARITY WITH AIRCRAFT		1	1					1	1
SELECTED UNSUITABLE TERRAIN	1		1				1		1
FAILED TO ASSURE THE GEAR WAS DOWN AND LOCKED				2		2	2		2
MISJUDGED DISTANCE, SPEED, AND ALTITUDE				1		1	1		1
MISJUDGED ALTITUDE AND CLEARANCE	1		1				1		1
FAILED TO MAINTAIN DIRECTIONAL CONTROL				1		1	1		1
DIRECT ENTRIES	1		1				1		1
SUBTOTAL	12	5	17	15	1	16	27	6	33
** PERSONNEL **									
FLIGHT INSTRUCTOR									
MAINTENANCE, SERVICING, INSPECTION									
IMPROPER MAINTENANCE(MAINTENANCE PERSONNEL)				1		1	1		1
INADEQUATE INSPECTION OF AIRCRAFT(MAINTENANCE PERSONNEL)				1		1	1		1
INADEQUATE MAINTENANCE AND INSPECTION		1	1	1		1	1	1	2
OPERATIONAL SUPERVISORY PERSONNEL									
FAILURE TO PROVIDE ADEQ DIRECTIVES, MANUALS, EQUIPMENT				1		1	1		1
DEFICIENCY, COMPANY MAINTAINED EQMT, SERV, REGULATIONS				1		1	1		1
WEATHER PERSONNEL									
TRAFFIC CONTROL PERSONNEL									
AIRPORT SUPERVISORY PERSONNEL									
FAILURE TO NOTIFY OF UNSAFE COND/AND OR FAILURE TO MARK	1		1		1	1	1	1	2
AIRWAYS FACILITIES PERSONNEL									
PRODUCTION-DESIGN-PERSONNEL					1	1		1	1
SUBSTANDARD QUALITY CONTROL									
MISCELLANEOUS-PERSONNEL									
GROUND SIGNALMAN	1		1				1		1
THIRD PILOT									
FLIGHT ENGINEER									
FLIGHT PERSONNEL									
DISPATCHING (AIR CARRIER ONLY)									
SUBTOTAL	2	1	3	5	2	7	7	3	10
** AIRFRAME **									
WINGS									
SPARS				1		1	1		1
FUSELAGE									
SEATS					1	1		1	1
LANDING GEAR									
EMERGENCY/EXTENSION ASSEMBLY				1		1	1		1
NOSEWHEEL ASSEMBLIES				1		1	1		1
NOSEWHEEL STEERING				1		1	1		1
FLIGHT CONTROL SURFACES									
SUBTOTAL				4	1	5	4	1	5
** POWERPLANT **									
ENGINE STRUCTURE									

CAUSE/FACTOR TABLE

POWERPLANT (CONTINUED)

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
VALVE ASSEMBLIES									
IGNITION SYSTEM				1		1	1		1
FUEL SYSTEM									
LUBRICATING SYSTEM									
LINES, HOSES, FITTINGS				1		1	1		1
COOLING SYSTEM									
PROPELLER AND ACCESSORIES									
EXHAUST SYSTEM									
ENGINE ACCESSORIES									
CONWL FLAP ACTUATING ASSEMBLY				1		1	1		1
ENGINE CONTROLS									
POWERPLANT-INSTRUMENTS									
MISCELLANEDUS									
BIRD INGESTION					1	1		1	1
REDUCTION GEAR ASSEMBLY									
COMPRESSOR ASSEMBLY									
COMBUSTION ASSEMBLY									
TURBINE ASSEMBLY									
ACCESSORY DRIVE ASSEMBLY									
LUBRICATING SYSTEM									
FUEL SYSTEM									
SAFETY SYSTEM									
IGNITION SYSTEM									
TORQUEMETER									
AIR BLEED									
EXHAUST SYSTEM									
THRUST REVERSER									
PROPELLER SYSTEM									
CONSTANT SPEED DRIVE									
POWER LEVER									
PROPELLER LEVER									
REVERSE THRUST LEVER									
ENGINE INDICATING EQUIPMENT									
ENGINE INSTALLATION									
SUBTOTAL				3	1	4	3	1	4
** SYSTEMS **									
ELECTRICAL SYSTEM									
GENERATORS/ALTERNATORS				1		1	1		1
HYDRAULIC SYSTEM									
RESERVOIR, LINES, FITTINGS				1		1	1		1
FLIGHT CONTROL SYSTEMS									
ELEVATOR AND ELEVATOR TAB CONTROL SYSTEM				1		1	1		1
ANTI-ICING, DE-ICING SYSTEMS									
AIR CONDITION, HEATING AND PRESSURIZATION									
AUTO PILOT									
FIRE WARNING SYSTEM									
FIRE EXTINGUISHER SYSTEM									
OXYGEN SYSTEM									
OTHER SYSTEMS									
SUBTOTAL				3		3	3		3
** AIRPORTS/AIRWAYS/FACILITIES **									
AIRPORT FACILITIES									
AIRPORT CONDITIONS									
WET RUNWAY					1	1		2	2
ICE/SLUSH ON RUNWAY		1	1		1	1		1	1
HIGH VEGETATION		1	1					1	1
OTHER	1	1	2					2	3
AIRWAYS FACILITIES							1		
SUBTOTAL	1	3	4		3	3	1	6	7
** WEATHER **									
LOW CEILING		1	1					1	1
FOG		1	1					1	1
UNFAVORABLE WIND CONDITIONS					2	2		2	2
WIND SHEAR				1		1	1		1
HIGH DENSITY ALTITUDE		1	1					1	1
SUBTOTAL		3	3	1	2	3	1	5	6

DETAILED CAUSE/FACTOR	CAUSE/FACTOR TABLE								
	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
** TERRAIN **									
ROUGH/UNEVEN HIGH OBSTRUCTIONS		1	1		1	1		1	1
SUBTOTAL		1	1		1	1		2	2
** MISCELLANEDUS **									
FOREIGN MATERIAL AFFECTING NORMAL OPERATIONS UNDETERMINED				1		1	1		1
SUBTOTAL				2		2	2		2
GRAND TOTAL	15	13	28	33	11	44	48	24	72
** MISCELLANEDUS ACTS, CONDITIONS **									
FIRE OF UNDETERMINED ORIGIN				1		1	1		1
UNAPPROVED MODIFICATION				1		1	1		1
LEAK/LEAKAGE				1		1	1		1
DISCONNECTED				1		1	1		1
INTENTIONAL WHEELS UP					2	2		3	3
RAN OFF END OF RUNWAY		1	1		1	1		1	1
CHECKLIST-FAILED TO USE					1	1		1	1
IMPROPER EMERGENCY PROCEDURES					1	1	1		1
FLEW INTO BLIND CANYON	1		1					1	1
JETTISONED LOAD		1	1		1	1		1	1
LANDED ON FOAMED RUNWAY				1		1	1		1
HYDRAULIC FAILURE				1	1	2	1	1	2
FIRE IN ENGINE			1				1		1
FIRE IN BRAKES/ WHEEL ASSEMBLY/ WHEEL WELL	1		1				1		1
FUEL EXHAUSTION	1		1				2		2
IMPROPERLY LOADED AIRCRAFT-WEIGHT-AND/OR CG	1		1	2		2	2		2
FROZEN, MOISTURE					1	1		1	1
HYDROPLANING ON WET RUNWAY					2	2		2	2
OVERLOAD FAILURE				4	1	5	4	1	5
MATERIAL FAILURE									

DIRECT ENTRY CAUSES

PILOT-MADE NAVIGATIONAL ERROR

DIRECT ENTRY CAUSES ARE CARRIED UNDER THEIR APPROPRIATE CAUSAL CATEGORIES AND ARE INCLUDED IN THE TOTALS

ANALYTIC TABLE

KIND OF FLYING BY INJURY INDEX
LARGE FIXED WING

KIND OF FLYING	INJURY INDEX				RECORDS	ACCIDENTS	PERCENT
	FATAL	SERIOUS	MINOR	NONE			
<u>INSTRUCTIONAL</u>							
DUAL							
SOLO							
CHECK							
TRAINING							
<u>NONCOMMERCIAL</u>							
PLEASURE			2		2	2	8.33
PRACTICE							
BUSINESS				1	1	1	4.17
CORPORATE/EXECUTIVE	2	2	1	1	6	6	25.00
AERIAL SURVEY							
COMPANY FLIGHT							
OTHER		1			1	1	4.17
<u>COMMERCIAL</u>							
AERIAL APPLICATION			1	1	2	2	8.33
CROP CONTROL RELATED FLIGHT							
FIRE CONTROL	2				2	2	8.33
FIRE CONTROL RELATED FLIGHT							
AERIAL MAPPING/PHOTOGRAPHY							
AERIAL ADVERTISING							
POWER AND PIPELINE PATROL							
FISH SPOTTING							
AIR TAXI-PASSENGER OPERATIONS	2		1		3	3	12.50
AIR TAXI-CARGO OPERATIONS			2		2	2	8.33
CONSTRUCTION WORK							
SCHEDULED PASSENGER SERVICE							
SCHEDULED CARGO SERVICE							
INTRA-STATE CHARTER PASSG.							
INTRA-STATE CHARTER CARGO.							
MILITARY CONTRACT-PASSENGER							
MILITARY CONTRACT-CARGO							
CHARTER CARGO-DOMESTIC							
CHARTER PASSG-DOMESTIC							
CHARTER-CARGO-INTERNATIONAL							
CHARTER-PASSG-INTERNATIONAL							
OTHER							
UNKNOWN/NOT REPORTED							

ANALYTIC TABLE

KIND OF FLYING	ANALYTIC TABLE				RECORDS	ACCIDENTS	PERCENT
	FATAL	SERIOUS	MINOR	NONE			
<u>MISCELLANEOUS</u>							
EXPERIMENTATION							
TEST			1		1	1	4.17
DEMONSTRATION							
FERRY	1				1	1	4.17
SEARCH AND RESCUE							
AIR SHOW/AIR RACING							
PARACHUTE JUMP							
PARACHUTE JUMP-AIR SHOW							
TOWING GLIDERS							
SEEDING CLOUDS							
HUNTING							
POLICE PATROL							
HIGHWAY TRAFFIC ADVISORY							
ALL OTHER PUBLIC FLYING			1		1	1	4.17
OTHER			1		1	1	4.17
UNKNOWN/NOT REPORTED	1				1	1	4.17
RECORDS.	8	3	2	11	24		
ACCIDENTS	8	3	2	11		24	
PERCENTS	33.3	12.5	8.3	45.8			

INJURIES, ACCIDENTS
LARGE FIXED WING

INJURIES

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	7	2	1	14		24
COPILOT	4	2	2	12		20
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER		1	1			2
NAVIGATOR						
CABIN ATTENDANT				2		2
EXTRA CREW	1			2		3
PASSENGERS	7	11		27		45
TOTAL	19	16	4	57		96
ABOARD						
OTHER AIRCRAFT						
OTHER GROUND	1					1
GRAND TOTAL	20	16	4	57		97

INVOLVES 24 TOTAL ACCIDENTS
INVOLVES 8 FATAL ACCIDENTS

GENERAL AVIATION ACCIDENTS

ROTORCRAFT

ANALYTIC TABLE

TYPE OF ACCIDENT BY AIRCRAFT DAMAGE
ROTORCRAFT

FIRST TYPE OF ACCIDENT	DAMAGE		RECORDS	ACCIDENTS	PERCENT
	DESTROYED	SUBSTANTIAL MINOR NONE			
GROUND-WATER LOOP-SWERVE	1		1	1	.37
DRAGGED WINGTIP POD OR FLOAT					
WHEELS-UP LANDING					
WHEELS-DOWN LANDING IN WATER					
GEAR COLLAPSED					
GEAR RETRACTED					
HARD LANDING	4	22	26	26	9.52
NOSE OVER/DOWN		2	2	2	.73
ROLL OVER	8	20	28	28	10.26
OVERSHOOT					
UNDERSHOOT					
<u>COLLISION BETWEEN AIRCRAFT</u>					
BOTH IN FLIGHT					
ONE AIRBORNE					
BOTH ON GROUND					
<u>COLLISION WITH GROUND/WATER</u>					
CONTROLLED	3	10	13	13	4.76
UNCONTROLLED	8	12	20	20	7.33
<u>COLLIDED WITH</u>					
WIRES/POLES	16	15	31	31	11.36
TREES	3	3	6	6	2.20
RESIDENCE/S					
BUILDING/S					
FENCE, FENCEPOSTS					
ELECTRONIC TOWERS					
RUNWAY OR APPROACH LIGHTS					
AIRPORT HAZARD					
ANIMALS					
CROP	1	2	3	3	1.10
FLAGMAN LOADER					
DITCHES					
SNOWBANK					
PARKED AIRCRAFT (UNATTENDED)					
AUTOMOBILE					
DIRT BANK					
OTHER	5	5	10	10	3.66
BIRD STRIKE		1	1	1	.37

ANALYTIC TABLE

FIRST
TYPE OF ACCIDENT

DESTROYED
SUBSTANTIAL
MINOR
NONE

RECORDS ACCIDENTS PERCE

FIRST TYPE OF ACCIDENT	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS	PERCE
STALL							
SPIN							
SPIRAL							
MUSH		1			1	1	.37
<u>FIRE OR EXPLOSION</u>							
IN FLIGHT	1				1	1	.37
ON GROUND	1	1			2	2	.73
<u>AIRFRAME FAILURE</u>							
IN FLIGHT	4				4	4	1.47
ON GROUND		1			1	1	.37
ENGINE TEARAWAY							
ENGINE FAILURE OR MALFUNCTION	14	70			84	84	30.77
PROPELLER/ROTOR FAILURE							
PROPELLER							
TAIL ROTOR	9	15			24	24	8.79
MAIN ROTOR	5	6			11	11	4.03
PROP ROTOR ACNT TO PERSON							
JET INTAKE/EXH ACNT TO PERS							
PROPELLER/JET/ROTOR BLAST							
TURBULENCE							
HAIL DAMAGE TO AIRCRAFT							
LIGHTNING STRIKE							
EVASIVE MANEUVER							
UNCONTROLLED ALT DEVIATION							
DITCHING		1			1	1	.37
MISSING ACFT NOT RECOVERED							
MISCELLANEOUS/OTHER	1	2			3	3	1.10
UNDETERMINED							
RECORDS	83	190			273		
ACCIDENTS	83	190				273	
PERCENTS	30.4	69.6	.0	.0			

ANALYTIC TABLE

PHASE OF OPERATION BY INJURY INDEX
ROTORCRAFT

FIRST OPERATIONAL PHASE	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
<u>STATIC</u>							
STARTING ENGINE/S							
IDLING ENGINE/S							
ENGINE RUNUP			1		1	1	.37
IDLING ROTORS				2	2	2	.73
PARKED-ENGINES NOT OPERATING							
OTHER			1	1	2	2	.73
<u>TAXI</u>							
TO TAKEOFF							
FROM LANDING							
OTHER							
GROUND TAXI TO TAKEOFF				2	2	2	.73
GROUND TAXI FROM LANDING			1		1	1	.37
GROUND TAXI, OTHER							
AERIAL TAXI TO TAKEOFF		1	1	2	4	4	1.47
AERIAL TAXI TO/FROM LANDING							
AERIAL TAXI, OTHER		1	1		2	2	.73
<u>TAKEOFF</u>							
RUN							
INITIAL CLIMB	1	3	4	6	14	14	5.13
VERTICAL		2	7	13	22	22	8.06
RUNNING (ROTORCRAFT/VTOL-STOL)	1		2		3	3	1.10
ABORTED (FIXED-WING)							
ABORTED (ROTORCRAFT/VTOL)				1	1	1	.37
ABORTED (ROTORCRAFT/STOL)			1		1	1	.37
OTHER	1	1	1		3	3	1.10
<u>INFLIGHT</u>							
CLIMB TO CRUISE	1	1	2	2	6	6	2.20
NORMAL CRUISE	12	10	3	23	48	48	17.58
DESCENDING							
HOLDING (IFR)							
HOVERING	1	4	5	15	25	25	9.16
POWER-ON DESCENT (ROTORCRAFT)			2	1	3	3	1.10
AUTOROTATIVE DESCENT				2	2	2	.73
ACROBATICS							
BUZZING							
UNCONTROLLED DESCENT	1	3			4	4	1.47

ANALYTIC TABLE

FIRST
OPERATIONAL PHASE

FATAL
SERIOUS
MINOR
NONE

RECORDS ACCIDENTS PERCENT

OPERATIONAL PHASE	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
EMERGENCY DESCENT							
LOW PASS	4	1	2	1	8	8	2.93
OTHER	4	3	3	2	12	12	4.40
EN ROUTE TO TREAT CROP		1	1		2	2	.73
EN ROUTE TO RELOADING AREA				1	1	1	.37
SURVEY FIELD/AREA							
STARTING SWATH RUN		1		6	7	7	2.56
SWATH RUN			1	16	17	17	6.23
FLAREOUT FOR SWATH RUN			1	3	4	4	1.47
PULLUP FROM SWATH RUN		2	1	2	5	5	1.83
PROCEDURE TURNAROUND		1	1	8	10	10	3.66
CLEANUP SWATH							
MANEUVER TO AVOID OBSTRUCTION		1			1	1	.37
RETURN TO STRIP				2	2	2	.73
<u>LANDING</u>							
TRAFFIC PATTERN-CIRCLING	2	1	1	2	6	6	2.20
FINAL APPROACH (VFR)	1			7	8	8	2.93
INITIAL APPROACH							
FINAL APPROACH (IFR)							
LEVEL OFF/TOUCHDOWN				6	6	6	2.20
ROLL (FIXED WING)							
ROLL-ON/RUN-ON (ROTORCRAFT)				3	3	3	1.10
POWER-ON LANDING (ROTORCRAFT)	3	3	6	11	23	23	8.42
POWER-OFF AUTOROTATIVE LG			1	10	11	11	4.03
GO-AROUND (VFR)				1	1	1	.37
MISSED APPROACH (IFR)							
OTHER							
UNKNOWN/NOT REPORTED							
RECORDS	32	40	50	151	273		
ACCIDENTS	32	40	50	151		273	
PERCENTS	11.7	14.7	18.3	55.3			

CAUSE/FACTOR TABLE

ROTORCRAFT
ACCIDENTS WITH ASSIGNED CAUSES ONLY

INVOLVES 270 TOTAL ACCIDENTS
INVOLVES 31 FATAL ACCIDENTS

BROAD CAUSE/FACTOR	FATAL ACCIDENTS		NONFATAL ACCIDENTS		ALL ACCIDENTS	
	CAUSE	TOTAL*	CAUSE	TOTAL*	CAUSE	TOTAL*
PILOT	23	5	25	164	187	23
	74.19	16.13	80.65	68.62	69.26	8.52
PERSONNEL	7	1	8	24	31	4
	22.58	3.23	25.81	10.04	11.48	1.48
AIRFRAME	1	1	2	1	2	2
	3.23	.00	3.23	.42	.74	.00
LANDING GEAR	.00	.00	.00	.00	.00	.00
POWERPLANT	3	3	6	2	5	2
	9.68	.00	9.68	20.50	19.26	.74
SYSTEMS	.00	.00	.00	1	1	1
	.00	.00	.00	.42	.42	.00
INSTRUMENTS/EQUIPMENT & ACCESSORIES	.00	.00	.00	3	3	1
	.00	.00	.00	1.26	1.67	1.48
ROTORCRAFT	10	10	20	32	42	1
	32.26	.00	32.26	13.39	15.56	.37
AIRPORT/AIRWAYS/FACILITIES	.00	.00	.00	3	3	3
	.00	.00	.00	1.26	1.26	1.11
WEATHER	1	5	6	23	29	7
	3.23	16.13	19.35	2.51	12.13	2.59
TERRAIN	1	10	11	19	30	20
	3.23	32.26	35.48	7.95	33.89	7.41
MISCELLANEOUS	1	1	2	13	15	2
	3.23	.00	3.23	5.44	6.28	.74
UNDETERMINED	.00	.00	.00	6	6	6
	.00	.00	.00	2.51	2.22	.00

THE FIGURES OPPOSITE EACH CAUSAL CATEGORY REPRESENT THE NUMBER AND PERCENT OF ACCIDENTS IN WHICH THAT PARTICULAR CAUSAL CATEGORY WAS ASSIGNED

* IF AN ACCIDENT INCLUDES BOTH A CAUSE AND RELATED FACTOR IN THE SAME CAUSAL CATEGORY, THE ACCIDENT IS REPRESENTED ONCE UNDER THE TOTAL FOR THAT CATEGORY

CAUSE/FACTOR TABLE
 ROTORCRAFT
 ACCIDENTS WITH ASSIGNED CAUSES ONLY

INVOLVES 270 TOTAL ACCIDENTS
 INVOLVES 31 FATAL ACCIDENTS

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
** PILOT **									
PILOT IN COMMAND									
ATTEMPTED OPERATION W/KNOWN DEFICIENCIES IN EQUIPMENT					1	1		1	1
ATTEMPTED OPERATION BEYOND EXPERIENCE/ABILITY LEVEL	1		1	2		2	3		3
CONTINUED VFR FLIGHT INTO ADVERSE WEATHER CONDITIONS				2		2	2		2
DIVERTED ATTENTION FROM OPERATION OF AIRCRAFT				2	2	4	2	2	4
EXCEEDED DESIGN STRESS LIMITS OF AIRCRAFT	1		1				1		1
FAILED TO SEE AND AVOID OBJECTS OR OBSTRUCTIONS	7		7	28		28	35		35
MISJUDGED, SPEED, ALTITUDE OR CLEARANCE	1		1	1		1	2		2
FAILED TO MAINTAIN ADEQUATE ROTOR RPM	2		2	31	1	32	33	1	34
FAILED TO USE OR INCORRECTLY USED MISC EQUIPMENT		2	2				2	2	2
FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES ETC	2	1	3	5		5	7	1	8
IMPROPER OPERATION OF POWERPLANT + POWERPLANT CONTROLS				5	2	7	5	2	7
IMPROPER OPERATION OF BRAKES AND/OR FLIGHT CONTROLS				1		1	1		1
IMPROPER OPERATION OF FLIGHT CONTROLS	5		5	27	1	28	32	1	33
IMPROPER LEVEL OFF				8	1	9	8	1	9
IMPROPER IN-FLIGHT DECISIONS OR PLANNING	5		5	8		8	13		13
IMPROPER COMPENSATION FOR WIND CONDITIONS				6		6	6		6
INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING	1		1	32	2	34	33	2	35
INADEQUATE SUPERVISION OF FLIGHT		1	1	11		11	11	1	12
LACK OF FAMILIARITY WITH AIRCRAFT				3	4	7	3	4	7
MISMANAGEMENT OF FUEL				12		12	12		12
EXERCISED POOR JUDGMENT		1	1	3	1	4	3	2	5
OPERATED CARELESSLY				1		1	1		1
SELECTED UNSUITABLE TERRAIN	1		1	4	1	5	5	1	6
INITIATED FLIGHT IN ADVERSE WEATHER CONDITIONS				1	1	2	1	1	2
SPONTANEOUS-IMPROPER ACTION				1	1	2	1	1	2
MISJUDGED DISTANCE AND SPEED				2		2	2		2
MISJUDGED DISTANCE AND ALTITUDE				2		2	2		2
MISJUDGED SPEED AND ALTITUDE				24		24	24		24
MISJUDGED SPEED				1		1	1		1
MISJUDGED ALTITUDE AND CLEARANCE	1		1	1		1	2		2
MISJUDGED ALTITUDE				1		1	1		1
MISJUDGED CLEARANCE	1		1	9		9	10		10
PHYSICAL IMPAIRMENT	1		1	1		1	2		2
SPATIAL DISORIENTATION				2		2	2		2
SELECTED WRONG RUNWAY RELATIVE TO EXISTING WIND				1		1	1		1
DIRECT ENTRIES	1		1				1		1
SUBTOTAL	30	5	35	237	18	255	267	23	290
COPILOT									
IMPROPER OPERATION OF FLIGHT CONTROLS				1		1	1		1
SUBTOTAL				1		1	1		1
DUAL STUDENT									
FAILED TO MAINTAIN ADEQUATE ROTOR RPM				4		4	4		4
IMPROPER OPERATION OF FLIGHT CONTROLS				4		4	4		4
IMPROPER LEVEL OFF				1		1	1		1
IMPROPER COMPENSATION FOR WIND CONDITIONS				1		1	1		1
LACK OF FAMILIARITY WITH AIRCRAFT				1		1	1		1
SELECTED UNSUITABLE TERRAIN				1		1	2		2
FAILURE TO RELINQUISH CONTROL				2		2	2		2
MISJUDGED CLEARANCE	1		1	1		1	2		2
SUBTOTAL	1		1	15		15	16		16
CHECK PILOT									
INADEQUATE SUPERVISION OF FLIGHT				1	2	3	1	2	3
LACK OF FAMILIARITY WITH AIRCRAFT					1	1		1	1
SUBTOTAL				1	3	4	1	3	4
** PERSONNEL **									

CAUSE/FACTOR TABLE

PERSONNEL (CONTINUED)

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
FLIGHT INSTRUCTOR									
MAINTENANCE, SERVICING, INSPECTION									
IMPROPER MAINTENANCE (MAINTENANCE PERSONNEL)	1		1	5		5	6		6
IMPROPERLY SERVICED AIRCRAFT (GROUND CREW)	1		1	1		1	2		2
INADEQUATE INSPECTION OF AIRCRAFT (MAINTENANCE PERSONNEL)				1		1	1		1
INADEQUATE MAINTENANCE AND INSPECTION	1		1	11	1	12	12	1	13
OTHER				1		1	1		1
OPERATIONAL SUPERVISORY PERSONNEL									
DEFICIENCY, COMPANY MAINTAINED EOMT, SERV, REGULATIONS				1		1	1		1
WEATHER PERSONNEL									
TRAFFIC CONTROL PERSONNEL									
AIRPORT SUPERVISORY PERSONNEL									
AIRWAYS FACILITIES PERSONNEL									
PRODUCTION-DESIGN-PERSONNEL									
SUBSTANDARD QUALITY CONTROL	2		2				2		2
INCORRECT FACTORY INSTALLATION	1		1				1		1
POOR/INADEQUATE DESIGN	1		1	1	1	2	2	1	3
MISCELLANEOUS-PERSONNEL									
GROUND CREWMAN					1	1		1	1
PASSENGER		1	1	4		4	4	1	5
THIRD PILOT									
FLIGHT ENGINEER									
FLIGHT PERSONNEL									
DISPATCHING (AIR CARRIER ONLY)									
SUBTOTAL	7	1	8	25	3	28	32	4	36
** AIRFRAME **									
WINGS									
FUSELAGE									
WINDSHIELDS, WINDOWS, CANOPIES				1		1	1		1
OTHER	1		1				1		1
LANDING GEAR									
FLIGHT CONTROL SURFACES									
SUBTOTAL	1		1	1		1	2		2
** POWERPLANT **									
ENGINE STRUCTURE									
MASTER AND CONNECTING RODS				6		6	6		6
CYLINDER ASSEMBLY				2		2	2		2
VALVE ASSEMBLIES				1		1	1		1
MOUNT AND VIBRATION ISOLATORS				1		1	1		1
IGNITION SYSTEM									
MAGNETOES				1		1	1		1
SPARK PLUG				2		2	2		2
FUEL SYSTEM									
LINES AND FITTINGS				1		1	1		1
PUMPS				2		2	2		2
FUEL INJECTION SYSTEM				2		2	2		2
OTHER				1		1	1		1
LUBRICATING SYSTEM									
COOLING SYSTEM									
PROPELLER AND ACCESSORIES									
EXHAUST SYSTEM									
ENGINE ACCESSORIES									
ENGINE CONTROLS									
THROTTLE-POWER LEVER ASSEMBLIES				1		1	1		1
POWERPLANT-INSTRUMENTS									
FUEL QUANTITY GAUGE					1	1		1	1
MISCELLANEOUS									
POWERPLANT FAILURE FOR UNDETERMINED REASONS	2		2	21		21	23		23
OTHER				1		1	1		1
DIRECT ENTRIES				1		1	1		1
REDUCTION GEAR ASSEMBLY									
COMPRESSOR ASSEMBLY									
OTHER				1		1	1		1
COMBUSTION ASSEMBLY									
TURBINE ASSEMBLY									
WHEEL, TURBINE				1		1	1		1
BLADE, TURBINE WHEEL				2		2	2		2
ACCESSORY DRIVE ASSEMBLY									
LUBRICATING SYSTEM									
FUEL SYSTEM									

CAUSE/FACTOR TABLE

POWERPLANT (CONTINUED)

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
PUMP, FUEL					1	1		1	1
FUEL CONTROL				3		3	3		3
OTHER	1		1				1		1
SAFETY SYSTEM									
IGNITION SYSTEM									
TORQUEMETER									
AIR BLEED									
EXHAUST SYSTEM									
THRUST REVERSER									
PROPELLER SYSTEM									
CONSTANT SPEED DRIVE									
POWER LEVER									
PROPELLER LEVER									
REVERSE THRUST LEVER									
ENGINE INDICATING EQUIPMENT									
ENGINE INSTALLATION									
SUBTOTAL	3		3	50	2	52	53	2	55
** SYSTEMS **									
ELECTRICAL SYSTEM									
HYDRAULIC SYSTEM									
RESERVOIR, LINES, FITTINGS				1		1	1		1
FLIGHT CONTROL SYSTEMS									
FLIGHT CONTROL BOOST SYSTEM (HYDRAULIC)				1		1	1		1
ANTI-ICING, DE-ICING SYSTEMS									
AIR CONDITION, HEATING AND PRESSURIZATION									
AUTO PILOT									
FIRE WARNING SYSTEM									
FIRE EXTINGUISHER SYSTEM									
OXYGEN SYSTEM									
OTHER SYSTEMS									
SUBTOTAL				2		2	2		2
** INSTRUMENTS/EQUIPMENT AND ACCESSORIES **									
FLIGHT AND NAVIGATION INSTRUMENTS									
COMMUNICATIONS AND NAVIGATION EQUIPMENT									
MISCELLANEOUS EQUIPMENT				3		3	3		3
SPRAY, DUSTING EQUIPMENT					1	1		1	1
OTHER									
SUBTOTAL				3	1	4	3	1	4
** ROTORCRAFT **									
ROTOR ASSEMBLIES									
MAIN ROTOR BLADES	2		2	1		1	3		3
TAIL ROTOR BLADES	3		3	3	1	4	6	1	7
MAIN ROTOR HEAD ASSEMBLIES				5		5	5		5
BEARINGS				2		2	2		2
OTHER	1		1				1		1
TRANSMISSION ROTOR DRIVE SYSTEM									
FREE WHEEL UNIT				1		1	1		1
TAIL ROTOR DRIVE SHAFT ASSEMBLY	1		1	4		4	5		5
TAIL ROTOR GEAR BOX	1		1	4		4	5		5
CLUTCH ASSEMBLY				2		2	2		2
FLIGHT CONTROL SYSTEMS									
CYCLIC PITCH CONTROL SYSTEM	1		1	3		3	4		4
COLLECTIVE PITCH CONTROL SYSTEM				1		1	1		1
TAIL ROTOR PITCH CONTROL SYSTEM				5		5	5		5
STABILIZING SURFACES-DAMPERS				1		1	1		1
MISCELLANEOUS UNITS AND ASSEMBLIES									
TAIL BOOMS/PYLONS/CONES	1		1				1		1
SUBTOTAL	10		10	32	1	33	42	1	43
** AIRPORTS/AIRWAYS/FACILITIES **									
AIRPORT FACILITIES									
AIRPORT CONDITIONS									
UNMARKED OBSTRUCTIONS						1	1	1	1
SOFT RUNWAY						1	1	1	1
OTHER						1	1	1	1

CAUSE/FACTOR TABLE

AIRPORTS/AIRWAYS/FACILITIES (CONTINUED)

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
AIRWAYS FACILITIES									
SUBTOTAL					3	3		3	3
** WEATHER **									
LOW CEILING		2	2		5	5		7	7
FOG		1	1		2	2		3	3
SNOW		1	1		1	1		2	2
ICING CONDITIONS—INCLUDES SLEET, FREEZING RAIN, ETC				1	1	1	1	1	1
CONDITIONS CONDUCTIVE TO CARB/INDUCTION SYSTEM ICING					3	3		3	3
UNFAVORABLE WIND CONDITIONS		2	2	2	7	9	2	9	11
WIND SHEAR				1	1	1	1	1	1
SUDDEN WINDSHIFT				1	1	1	1	1	1
DOWNDRAFTS, UPDRAFTS		1	1	3	1	4	3	2	5
OBSTRUCTIONS TO VISION					1	1		1	1
HIGH DENSITY ALTITUDE	1	1	2		7	7	1	8	9
SUBTOTAL	1	8	9	8	27	35	9	35	44
** TERRAIN **									
WET, SOFT GROUND				1	2	3	1	2	3
SNOW-COVERED					3	3		3	3
HIGH VEGETATION					2	2		2	2
HIDDEN OBSTRUCTIONS					1	1		1	1
ROUGH/UNEVEN		2	2	9	14	23	9	16	25
HIGH OBSTRUCTIONS	1	7	8	9	33	42	10	40	50
SANDY					1	1		1	1
OTHER		2	2		6	6		8	8
SUBTOTAL	1	11	12	19	62	81	20	73	93
** MISCELLANEOUS **									
FOREIGN OBJECT DAMAGE				2		2	2		2
SMOKE IN COCKPIT					1	1		1	1
FOREIGN MATERIAL AFFECTING NORMAL OPERATIONS				1		1	1		1
UNDETERMINED				6		6	6		6
BIRD COLLISION				1		1	1		1
EVASIVE MANEUVER TO AVOID COLLISION	1		1	5	1	6	6	1	7
UNQUALIFIED PERSON OPERATED AIRCRAFT				1		1	1		1
DIRECT ENTRIES				3		3	3		3
SUBTOTAL	1		1	19	2	21	20	2	22
GRAND TOTAL	55	25	80	413	122	535	468	147	615
** MISCELLANEOUS ACTS, CONDITIONS **									
LEAK/LEAKAGE				1		1	1		1
DOWNWIND					8	8		8	8
CARBON DEPOSITS				2		2	2		2
LOOSE, PART/FITTING				1		1	1		1
BINDING				1		1	1		1
DISCONNECTED				6		6	6		6
ELONGATED				1		1	1		1
ERRATIC					1	1		1	1
FRAYED				1		1	1		1
IMPROPERLY INSTALLED				4		4	4		4
OVERHEATED				1	1	2	1	1	2
PRESSURE, NONE					1	1		1	1
SCORED				1		1	1		1
STRIPPED				1		1	1		1
STUCK				2		2	2		2
VIBRATION, EXCESSIVE					2	2		2	2
LOAD NOT JETTISONED					6	6		6	6
ANTI-ICING/DEICING EQUIP—IMPROPER OPER. OF/FAILED TO USE				3		3	3		3
DISREGARD OF GOOD OPERATING PRACTICE				1		1	1		1
IMPROPER EMERGENCY PROCEDURES					1	1		1	1
UNWARRANTED LOW FLYING	2		2	2	1	3	4	1	5
INATTENTIVE TO FUEL SUPPLY				2		2	2		2
POORLY PLANNED APPROACH	1		1				1		1
JETTISONED LOAD					2	2		2	2
IMPROPERLY SECURED				3		3	3		3
FATIGUE FRACTURE	5		5	7		7	12		12

CAUSE/FACTOR TABLE

MISCELLANEOUS ACTS, CONDITIONS (CONTINUED)

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
RPM-UNCONTROLLABLE-OVERSPEED	1		1	1		1	2		2
IMPROPER ALIGNMENT/ADJUSTMENT	1		1	1		1	2		2
SEPARATION IN FLIGHT		6	6	1	6	7	1	12	13
FIRE IN CABIN/ COCKPIT/ BAGGAGE COMPARTMENT				1	1	1		1	1
FIRE IN ENGINE				1	1	2	1	1	2
CORRODED/CORROSION	1		1	1		1	2		2
CARGO SHIFTED				1		1	1		1
CONGESTED TRAFFIC-PATTERN		1	1					1	1
PILOT FATIGUE					1	1		1	1
FUEL EXHAUSTION				14		14	14		14
FUEL CONTAMINATION-EXCLUSIVE OF WATER IN FUEL				6		6	6		6
ALCOHOLIC IMPAIRMENT OF EFFICIENCY AND JUDGMENT	1		1	1		1	2		2
ICE-IN FUEL				1		1	1		1
ICE-CARBURETOR				3		3	3		3
ICE-WINDSHIELD				1		1	1		1
IMPROPERLY LOADED AIRCRAFT-WEIGHT-AND/OR CG				1		1	1		1
INTERFERENCE WITH FLIGHT CONTROLS				4		4	4		4
WHITEOUT				1		1	1		1
SUNGLARE				1	4	2	1	4	2
SIMULATED CONDITIONS				2	4	4	2	4	4
WATER IN FUEL				7		7	7		7
AIRCRAFT CAME TO REST IN WATER		8	8		9	9		17	17
MISSING				1	1	2	1	1	2
TOUCH AND GO LANDING					1	1		1	1
OVERLOAD FAILURE	2		2		6	6	2	6	8
MATERIAL FAILURE	2		2	30		30	32		32
FUEL STARVATION				8		8	8		8
OIL STARVATION	1		1				1		1
IMPROPER CLEARANCE-TOLERANCE	1		1	1		1	2		2

DIRECT ENTRY CAUSES

PILOT-LOSS OF CONTROL-REASON UNKNOWN
 MISC-HOSE IGNITED DRG ROTOR ENGAGEMENT.
 MISC-SETTLING WITH POWER
 PWR PLT-PRIOR ENG OVERSPEED
 MISC-LOSS OF ROTOR RPM FOR UNDETERMINED REASON

DIRECT ENTRY CAUSES ARE CARRIED UNDER THEIR APPROPRIATE CAUSAL CATEGORIES AND ARE INCLUDED IN THE TOTALS

ANALYTIC TABLE

KIND OF FLYING BY INJURY INDEX
ROTORCRAFT

KIND OF FLYING	INJURY INDEX				RECORDS	ACCIDENTS	PERCENT
	FATAL	SERIOUS	MINOR	NONE			
<u>INSTRUCTIONAL</u>							
DUAL	1	1	5	15	22	22	8.06
SOLO			1		1	1	.37
CHECK			1	3	4	4	1.47
TRAINING				2	2	2	.73
<u>NONCOMMERCIAL</u>							
PLEASURE	8	7	7	22	44	44	16.12
PRACTICE	3			12	15	15	5.49
BUSINESS	1	3	2	7	13	13	4.76
CORPORATE/EXECUTIVE	1	1		4	6	6	2.20
AERIAL SURVEY				1	1	1	.37
COMPANY FLIGHT							
OTHER							
<u>COMMERCIAL</u>							
AERIAL APPLICATION		5	5	33	43	43	15.75
CROP CONTROL RELATED FLIGHT		2	6	12	20	20	7.33
FIRE CONTROL							
FIRE CONTROL RELATED FLIGHT	1				1	1	.37
AERIAL MAPPING/PHOTOGRAPHY	1		2	3	6	6	2.20
AERIAL ADVERTISING							
POWER AND PIPELINE PATROL		1		2	3	3	1.10
FISH SPOTTING							
AIR TAXI-PASSENGER OPERATIONS	8	5	4	12	29	29	10.62
AIR TAXI-CARGO OPERATIONS							
CONSTRUCTION WORK	1	5	1	2	9	9	3.30
SCHEDULED PASSENGER SERVICE							
SCHEDULED CARGO SERVICE	1				1	1	.37
INTRA-STATE CHARTER PASSG.							
INTRA-STATE CHARTER CARGO.							
MILITARY CONTRACT-PASSENGER							
MILITARY CONTRACT-CARGO							
CHARTER CARGO-DOMESTIC				1	1	1	.37
CHARTER PASSG-DOMESTIC	2		3	3	8	8	2.93
CHARTER-CARGO-INTERNATIONAL							
CHARTER-PASSG-INTERNATIONAL							
OTHER	3	2	5	2	12	12	4.40
UNKNOWN/NOT REPORTED							

ANALYTIC TABLE

<u>KIND OF FLYING</u>					RECORDS	ACCIDENTS	PERCENT
	FATAL	SERIOUS	MINOR	NONE			
<u>MISCELLANEOUS</u>							
EXPERIMENTATION							
TEST	2	1	4		7	7	2.56
DEMONSTRATION	1		1		2	2	.73
FERRY	1	3	4	3	11	11	4.03
SEARCH AND RESCUE				1	1	1	.37
AIR SHOW/AIR RACING							
PARACHUTE JUMP							
PARACHUTE JUMP-AIR SHOW							
TOWING GLIDERS							
SEEDING CLOUDS							
HUNTING		1	1		2	2	.73
POLICE PATROL				2	2	2	.73
HIGHWAY TRAFFIC ADVISORY							
ALL OTHER PUBLIC FLYING	2	2	3		7	7	2.56
OTHER							
UNKNOWN/NOT REPORTED							
RECORDS	32	40	50	151	273		
ACCIDENTS	32	40	50	151		273	
PERCENTS	11.7	14.7	18.3	55.3			

INJURIES, ACCIDENTS
ROTORCRAFT

	INJURIES					TOTAL
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	
PILOT	24	40	39	170		273
COPILOT	1		1	2		4
DUAL STUDENT						
CHECK PILOT		1	3	16		20
FLIGHT ENGINEER				4		4
NAVIGATOR				1		1
CABIN ATTENDANT						
EXTRA CREW	2		2	5		9
PASSENGERS	36	36	51	90		213
TOTAL	63	77	96	288		524
OTHER AIRCRAFT						
OTHER GROUND						
GRAND TOTAL	63	77	96	288		524

INVOLVES 273 TOTAL ACCIDENTS
INVOLVES 32 FATAL ACCIDENTS

GENERAL AVIATION ACCIDENTS

GLIDER AIRCRAFT

ANALYTIC TABLE

TYPE OF ACCIDENT BY AIRCRAFT DAMAGE
GLIDER

FIRST
TYPE OF ACCIDENT

DESTROYED
SUBSTANTIAL
MINOR
NONE

RECORDS ACCIDENTS PERCENT

FIRST TYPE OF ACCIDENT	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
GROUND-WATER LOOP-SWERVE				3	3	3	4.62
DRAGGED WINGTIP POD OR FLOAT							
WHEELS-UP LANDING							
WHEELS-DOWN LANDING IN WATER							
GEAR COLLAPSED							
GEAR RETRACTED							
HARD LANDING		2	1		3	3	4.62
NOSE OVER/OWN							
ROLL OVER							
OVERSHOOT	1	3			4	4	6.15
UNDERSHOOT		8			8	8	12.31
<u>COLLISION BETWEEN AIRCRAFT</u>							
BOTH IN FLIGHT	1				1	1	1.54
ONE AIRBORNE							
BOTH ON GROUND							
<u>COLLISION WITH GROUND/WATER</u>							
CONTROLLED			6		6	6	9.23
UNCONTROLLED	1	1			2	2	3.08
<u>COLLIDED WITH</u>							
WIRES/POLES			2		2	2	3.08
TREES	1	6			7	7	10.77
RESIDENCE/S							
BUILDING/S							
FENCE, FENCEPOSTS	1				1	1	1.54
ELECTRONIC TOWERS							
RUNWAY OR APPROACH LIGHTS							
AIRPORT HAZARD							
ANIMALS							
CROP							
FLAGMAN LOADER							
DITCHES							
SNOWBANK							
PARKED AIRCRAFT (UNATTENDED)		1			1	1	1.54
AUTOMOBILE							
DIRT BANK		1			1	1	1.54
OTHER		4			4	4	6.15
AIRD STRIKE							

ANALYTIC TABLE

FIRST TYPE OF ACCIDENT	ANALYTIC TABLE			RECORDS	ACCIDENTS	PERCENT
	DESTROYED	SUBSTANTIAL	MINOR NONE			
STALL	1	6		7	7	10.77
SPIN	2	6		8	8	12.31
SPIRAL						
MUSH						
<u>FIRE OR EXPLOSION</u>						
IN FLIGHT						
ON GROUND						
<u>AIRFRAME FAILURE</u>						
IN FLIGHT	2	3		5	5	7.69
ON GROUND						
ENGINE TEARAWAY						
ENGINE FAILURE OR MALFUNCTION						
PROPELLER/ROTOR FAILURE						
PROPELLER						
TAIL ROTOR						
MAIN ROTOR						
PROP ROTOR ACNT TO PERSON						
JET INTAKE/EXH ACNT TO PERS						
PROPELLER/JET/ROTOR BLAST						
TURBULENCE		1		1	1	1.54
HAIL DAMAGE TO AIRCRAFT						
LIGHTNING STRIKE						
EVASIVE MANEUVER						
UNCONTROLLED ALT DEVIATION						
DITCHING						
MISSING ACFT NOT RECOVERED				1	1	1.54
MISCELLANEOUS/OTHER			1			
UNDETERMINED						
RECORDS	11	52	2	65		
ACCIDENTS	11	52	2		65	
PERCENTS	16.9	80.0	3.1			

ANALYTIC TABLE

PHASE OF OPERATION BY INJURY INDEX
GLIDER

FIRST
OPERATIONAL PHASE

FATAL
SERIOUS
MINOR
NONE

REGORIS ACCIDENTS PERCENT

STATIC

STARTING ENGINE/S
IDLING ENGINE/S
ENGINE RUNUP
IDLING ROTORS
PARKED-ENGINES NOT OPERATING
OTHER

TAXI

TO TAKEOFF
FROM LANDING
OTHER
GROUND TAXI TO TAKEOFF
GROUND TAXI FROM LANDING
GROUND TAXI, OTHER
AERIAL TAXI TO TAKEOFF
AERIAL TAXI TO/FROM LANDING
AERIAL TAXI, OTHER

TAKEOFF

RUN

INITIAL CLIMB	3	1	4	4	6.15
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VERTICAL

RUNNING (ROTORCRAFT/VTOL-STOL)

ABORTED (FIXED-WING)	1	1	2	2	3.08
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ABORTED (ROTORCRAFT/VTOL)

ABORTED (ROTORCRAFT/STOL)

OTHER	1	1	2	2	3.08
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INFLIGHT

CLIMB TO CRUISE	1		1	1	1.54
-----------------	---	--	---	---	------

NORMAL CRUISE	1	1	3	3	4.62
---------------	---	---	---	---	------

DESCENDING

HOLDING (IFR)

HOVERING

POWER-DN DESCENT (ROTORCRAFT)

AUTOROTATIVE DESCENT

ACROBATICS

BUZZING

UNCONTROLLED DESCENT

ANALYTIC TABLE

FIRST OPERATIONAL PHASE

FATAL
SERIOUS
MINOR
NONE

RECORDS ACCIDENTS PERCENT

EMERGENCY DESCENT

LOW PASS

4 1 2 2

9 9 13.85

OTHER

EN ROUTE TO TREAT CRDP

EN ROUTE TO RELOADING AREA

SURVEY FIELD/AREA

STARTING SWATH RUN

SWATH RUN

FLAREOUT FOR SWATH RUN

PULLUP FROM SWATH RUN

PROCEDURE TURNAROUND

CLEANUP SWATH

MANEUVER TO AVOID OBSTRUCTION

RETURN TO STRIP

LANDING

TRAFFIC PATTERN-CIRCLING

1 2 1

4 4 6.15

FINAL APPROACH (VFR)

2 2 10

14 14 21.54

INITIAL APPROACH

1

1 1 1.54

FINAL APPROACH (IFR)

4 3 9

16 16 24.62

LEVEL OFF/TOUCHDOWN

2 1 4

7 7 10.77

ROLL (FIXED WING)

ROLL-ON/RUN-ON (ROTORCRAFT)

POWER-ON LANDING (ROTORCRAFT)

POWER-OFF AUTOROTATIVE LDG

GO-AROUND (VFR)

MISSED APPROACH (IFR)

2

2 2 3.08

OTHER

UNKNOWN/NOT REPORTED

RECORDS

8 15 11 31

65

ACCIDENTS

8 15 11 31

61

PERCENTS

12.3 23.1 16.9 47.7

CAUSE/FACTOR TABLE

GLIDER

ACCIDENTS WITH ASSIGNED CAUSES ONLY

INVOLVES 65 TOTAL ACCIDENTS
 INVOLVES 8 FATAL ACCIDENTS

BROAD CAUSE/FACTOR	FATAL ACCIDENTS		NONFATAL ACCIDENTS		ALL ACCIDENTS	
	CAUSE	TOTAL*	CAUSE	TOTAL*	CAUSE	TOTAL*
PILOT	7	87.50	48	49	55	56
	87.50	.00	84.21	85.96	84.62	86.15
PERSONNEL	1	12.50	4	0	7	10
	12.50	.00	10.53	15.79	10.77	15.38
AIRFRAME	1	12.50	2	2	3	3
	12.50	.00	3.51	3.51	4.62	4.62
LANDING GEAR	.00	.00	.00	.00	.00	.00
POWERPLANT	.00	.00	.00	.00	.00	.00
SYSTEMS	.00	.00	1	1	1	1
	.00	.00	1.75	1.75	1.54	1.54
INSTRUMENTS/EQUIPMENT & ACCESSORIES	.00	.00	.00	1	.00	1
	.00	.00	.00	1.75	.00	1.54
ROTORCRAFT	.00	.00	.00	.00	.00	.00
AIRPORT/AIRWAYS/FACILITIES	.00	.00	1	1	1	1
	.00	.00	1.75	1.75	1.54	1.54
WEATHER	1	25.00	3	20	4	23
	12.50	25.00	5.26	35.09	6.15	35.38
TERRAIN	.00	12.50	2	16	2	17
	.00	12.50	3.51	28.07	3.08	26.15
MISCELLANEOUS	.00	.00	4	4	4	4
	.00	.00	7.02	7.02	6.15	6.15
UNDETERMINED	1	12.50	.00	.00	1	1
	12.50	.00	.00	.00	1.54	1.54

THE FIGURES OPPOSITE EACH CAUSAL CATEGORY REPRESENT THE NUMBER AND PERCENT OF ACCIDENTS IN WHICH THAT PARTICULAR CAUSAL CATEGORY WAS ASSIGNED

* IF AN ACCIDENT INCLUDES BOTH A CAUSE AND RELATED FACTOR IN THE SAME CAUSAL CATEGORY, THE ACCIDENT IS REPRESENTED ONCE UNDER THE TOTAL FOR THAT CATEGORY

CAUSE/FACTOR TABLE
GLIDER
ACCIDENTS WITH ASSIGNED CAUSES ONLY

INVOLVES 65 TOTAL ACCIDENTS
INVOLVES 8 FATAL ACCIDENTS

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
** PILOT **									
PILOT IN COMMAND									
ATTEMPTED OPERATION BEYOND EXPERIENCE/ABILITY LEVEL				2		2	2		2
BECAME LOST/DISORIENTED					1	1		1	1
CONTINUED VFR FLIGHT INTO ADVERSE WEATHER CONDITIONS				1		1	1		1
DELAYED ACTION IN ABORTING TAKEOFF					1	1		1	1
EXCEEDED DESIGN STRESS LIMITS OF AIRCRAFT	2		2	1		1	3		3
FAILED TO SEE AND AVOID OTHER AIRCRAFT	1		1				1		1
FAILED TO SEE AND AVOID OBJECTS OR OBSTRUCTIONS				1		1	1		1
FAILED TO OBTAIN/MAINTAIN FLYING SPEED	3		3	10		10	13		13
FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES ETC				2	1	3	2	1	3
IMPROPER OPERATION OF FLIGHT CONTROLS	1		1	10		10	11		11
IMPROPER LEVEL OFF				2		2	2		2
IMPROPER IN-FLIGHT DECISIONS OR PLANNING	1		1	8	1	9	9	1	10
IMPROPER COMPENSATION FOR WIND CONDITIONS				3		3	3		3
INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING				2	5	7	2	5	7
INADEQUATE SUPERVISION OF FLIGHT				2		2	2		2
LACK OF FAMILIARITY WITH AIRCRAFT	1		1	2	7	9	3	7	10
SELECTED UNSUITABLE TERRAIN				4		4	4		4
MISJUDGED DISTANCE, SPEED, AND ALTITUDE				1		1	1		1
MISJUDGED DISTANCE AND SPEED				5		5	5		5
MISJUDGED DISTANCE AND ALTITUDE				8		8	8		8
MISJUDGED ALTITUDE				1		1	1		1
MISJUDGED CLEARANCE	1		1	2		2	3		3
FAILED TO MAINTAIN DIRECTIONAL CONTROL				3		3	3		3
SELECTED WRONG RUNWAY RELATIVE TO EXISTING WIND				2		2	2		2
DIRECT ENTRIES				1		1	1		1
SUBTOTAL	10		10	73	16	89	83	16	99
DUAL STUDENT									
IMPROPER OPERATION OF FLIGHT CONTROLS				1		1	1		1
LACK OF FAMILIARITY WITH AIRCRAFT					1	1		1	1
SPONTANEOUS-IMPROPER ACTION				1		1	1		1
SUBTOTAL				2	1	3	2	1	3
** PERSONNEL **									
FLIGHT INSTRUCTOR									
INADEQUATE TRAINING OF STUDENT				1	1	2	1	1	2
MAINTENANCE, SERVICING, INSPECTION									
IMPROPER MAINTENANCE (OWNER PERSONNEL)					1	1		1	1
INADEQUATE MAINTENANCE AND INSPECTION				1		1	1		1
OPERATIONAL SUPERVISORY PERSONNEL									
INADEQUATE GROUND TRAINING-PROCEDURES				1		1	1		1
WEATHER PERSONNEL									
TRAFFIC CONTROL PERSONNEL									
AIRPORT SUPERVISORY PERSONNEL									
AIRWAYS FACILITIES PERSONNEL									
PRODUCTION-DESIGN-PERSONNEL									
MISCELLANEOUS-PERSONNEL									
PILOT OF OTHER AIRCRAFT	1		1	1	1	2	2	1	3
GROUND CREWMAN				1	1	2	1	1	2
PASSENGER				1	1	2	1	1	2
THIRD PILOT									
FLIGHT ENGINEER									
FLIGHT PERSONNEL									
DISPATCHING (AIR CARRIER ONLY)									
SUBTOTAL	1		1	6	5	11	7	5	12
** AIRFRAME **									
WINGS									
SPARS	1		1				1		1

CAUSE/FACTOR TABLE

AIRFRAME (CONTINUED)

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
FUSELAGE									
LANDING GEAR									
FLIGHT CONTROL SURFACES									
RUDDER, SURFACES ATTACHMENTS				2		2	2		2
VERTICAL STABILIZER, ATTACHMENTS				1		1	1		1
SUBTOTAL	1		1	3		3	4		4
** SYSTEMS **									
ELECTRICAL SYSTEM									
HYDRAULIC SYSTEM									
FLIGHT CONTROL SYSTEMS									
RUDDER AND RUDDER TAB CONTROL SYSTEM				1		1	1		1
ANTI-ICING, DE-ICING SYSTEMS									
AIR CONDITION, HEATING AND PRESSURIZATION									
AUTO PILOT									
FIRE WARNING SYSTEM									
FIRE EXTINGUISHER SYSTEM									
OXYGEN SYSTEM									
OTHER SYSTEMS									
SUBTOTAL				1		1	1		1
** INSTRUMENTS/EQUIPMENT AND ACCESSORIES **									
FLIGHT AND NAVIGATION INSTRUMENTS									
COMMUNICATIONS AND NAVIGATION EQUIPMENT									
MISCELLANEOUS EQUIPMENT									
GLIDER LAUNCH/TOW EQUIPMENT					1	1		1	1
SUBTOTAL					1	1		1	1
** AIRPORTS/AIRWAYS/FACILITIES **									
AIRPORT FACILITIES									
AIRPORT CONDITIONS									
UNMARKED OBSTRUCTIONS				1		1	1		1
AIRWAYS FACILITIES									
SUBTOTAL				1		1	1		1
** WEATHER **									
LOW CEILING					2	2		2	2
UNFAVORABLE WIND CONDITIONS					7	9		7	9
TURBULENCE IN FLIGHT, CLEAR AIR		1	1	2			2		
DOWNDRAFTS, UPDRAFTS	1		1	1	10	11	2	10	12
HIGH TEMPERATURE		1	1					1	1
HIGH DENSITY ALTITUDE					1	1		1	1
SUBTOTAL	1	2	3	3	20	23	4	22	26
** TERRAIN **									
WET, SOFT GROUND					1	1		1	1
HIGH VEGETATION					1	1		1	1
HIDDEN OBSTRUCTIONS				1		1	1		1
ROUGH/UNEVEN					1	1		1	1
HIGH OBSTRUCTIONS		1	1	1	11	12	1	12	13
SUBTOTAL		1	1	2	14	16	2	15	17
** MISCELLANEOUS **									
UNDETERMINED	1		1				1		1
VORTEX TURBULENCE				1		1	1		1
EVASIVE MANEUVER TO AVOID COLLISION				2		2	2		2
UNQUALIFIED PERSON OPERATED AIRCRAFT				1		1	1		1
SUBTOTAL	1		1	4		4	5		5
GRAND TOTAL	14	3	17	95	57	152	109	60	169
** MISCELLANEOUS ACTS, CONDITIONS **									

CAUSE/FACTOR TABLE

MISCELLANEOUS ACTS, CONDITIONS (CONTINUED)

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
DOWNWIND					1	1		1	1
DISCONNECTED				1		1			1
JAMMED				1		1	1		1
RAN OFF END OF RUNWAY					1	1		1	1
NOT ALLIGNED WITH RUNWAY/INTENDED LANDING AREA					2	2		2	2
POORLY PLANNED APPROACH		1	1	1	6	7	1	7	8
SEPARATION IN FLIGHT		2	2					2	2
IMPROPERLY LOADED AIRCRAFT-WEIGHT-AND/OR CG					2	2		2	2
INTERFERENCE WITH FLIGHT CONTROLS				1	1	2	1	1	2
OVERLOAD FAILURE	2		2		1	1	2	1	3
MATERIAL FAILURE				1	1	2	1	1	2

DIRECT ENTRY CAUSES

PILOT-ATTEMPTD TKOF WITH SPOILERS EXTENDED.

DIRECT ENTRY CAUSES ARE CARRIED UNDER THEIR APPROPRIATE CAUSAL CATEGORIES AND ARE INCLUDED IN THE TOTALS

ANALYTIC TABLE

KIND OF FLYING BY INJURY INDEX
GLIDER

KIND OF FLYING	INJURY INDEX				RECORDS	ACCIDENTS	PERCENT
	FATAL	SERIOUS	MINOR	NONE			
<u>INSTRUCTIONAL</u>							
DUAL	3	1	3		7	7	10.77
SOLO		1	4		5	5	7.69
CHECK							
TRAINING	2		2		4	4	6.15
<u>NONCOMMERCIAL</u>							
PLEASURE	7	7	8	19	41	41	63.08
PRACTICE	2		2		4	4	6.15
BUSINESS							
CORPORATE/EXECUTIVE							
AERIAL SURVEY							
COMPANY FLIGHT							
OTHER							
<u>COMMERCIAL</u>							
AERIAL APPLICATION							
CROP CONTROL RELATED FLIGHT							
FIRE CONTROL							
FIRE CONTROL RELATED FLIGHT							
AERIAL MAPPING/PHOTOGRAPHY							
AERIAL ADVERTISING							
POWER AND PIPELINE PATROL							
FISH SPOTTING							
AIR TAXI-PASSENGER OPERATIONS							
AIR TAXI-CARGO OPERATIONS							
CONSTRUCTION WORK							
SCHEDULED PASSENGER SERVICE							
SCHEDULED CARGO SERVICE							
INTRA-STATE CHARTER PASSG.							
INTRA-STATE CHARTER CARGO.							
MILITARY CONTRACT-PASSENGER							
MILITARY CONTRACT-CARGO							
CHARTER CARGO-DOMESTIC							
CHARTER PASSG-DOMESTIC							
CHARTER-CARGO-INTERNATIONAL							
CHARTER-PASSG-INTERNATIONAL							
OTHER							
UNKNOWN/NOT REPORTED							

ANALYTIC TABLE

KIND OF FLYING					RECORDS	ACCIDENTS	PERCENT
	FATAL	SERIOUS	MINOR	NONE			
<u>MISCELLANEOUS</u>							
EXPERIMENTATION							
TEST			1		1	1	1.54
DEMONSTRATION							
FERRY							
SEARCH AND RESCUE							
AIR SHOW/AIR RACING	1	1		1	3	3	4.62
PARACHUTE JUMP							
PARACHUTE JUMP-AIR SHOW							
TOWING GLIDERS							
SEEDING CLOUDS							
HUNTING							
POLICE PATROL							
HIGHWAY TRAFFIC ADVISORY							
ALL OTHER PUBLIC FLYING							
OTHER							
UNKNOWN/NOT REPORTED							
RECORDS	8	15	11	31	65		
ACCIDENTS	8	15	11	31		65	
PERCENTS	12.3	23.1	16.9	47.7			

INJURIES, ACCIDENTS
GLIDERS

INJURIES

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	8	12	11	34		65
COPILOT				1		1
DUAL STUDENT		2	1	4		7
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS		3	2	8		13
TOTAL	8	17	14	47	ABOARD	86
* OTHER AIRCRAFT	1					1
OTHER GROUND		2				2
GRAND TOTAL	9	19	14	47		89

INVOLVES 65 TOTAL ACCIDENTS
INVOLVES 8 FATAL ACCIDENTS

* INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF THE TOTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

COLLISIONS BETWEEN AIRCRAFT

ANALYTIC TABLE

TYPE OF COLLISION (1ST) VS INJURY INDEX

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
BOTH IN FLIGHT	46	2	2	10	60	30	62.50
ONE AIRBORNE			2	4	6	3	6.25
BOTH ON GROUND		2		28	30	15	31.25
RECORDS	46	4	4	42	96		
ACCIDENTS	23	2	2	21		48	
PERCENTS	47.9	4.2	4.2	43.8			

ANALYTIC TABLE

PHASE OF OPERATION BY INJURY INDEX
COLLISIONS

FIRST
OPERATIONAL PHASE

FATAL
SERIOUS
MINOR
NONE

RECORDS ACCIDENTS PERCENT

STATIC

STARTING ENGINE/S

IDLING ENGINE/S

ENGINE RUNUP

IDLING ROTORS

PARKED-ENGINES NOT OPERATING

OTHER

TAXI

TO TAKEOFF

FROM LANDING

OTHER

GROUND TAXI TO TAKEOFF

GROUND TAXI FROM LANDING

GROUND TAXI, OTHER

AERIAL TAXI TO TAKEOFF

AERIAL TAXI TO/FROM LANDING

AERIAL TAXI, OTHER

TAKEOFF

RUN

INITIAL CLIMB

VERTICAL

RUNNING (ROTORCRAFT/VTOL-STOL)

ABORTED (FIXED-WING)

ABORTED (ROTORCRAFT/VTOL)

ABORTED (ROTORCRAFT/STOL)

OTHER

INFLIGHT

CLIMB TO CRUISE

NORMAL CRUISE

DESCENDING

HOLDING (IFR)

HOVERING

POWER-ON DESCENT (ROTORCRAFT)

AUTOROTATIVE DESCENT

ACROBATICS

BUZZING

UNCONTROLLED DESCENT

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
STARTING ENGINE/S							
IDLING ENGINE/S			4		4	4	4.17
ENGINE RUNUP			1		1	1	1.04
IDLING ROTORS							
PARKED-ENGINES NOT OPERATING							
OTHER							
<u>TAXI</u>							
TO TAKEOFF	1	6			7	7	7.29
FROM LANDING	1	4			5	5	5.21
OTHER			1		1	1	1.04
GROUND TAXI TO TAKEOFF							
GROUND TAXI FROM LANDING							
GROUND TAXI, OTHER							
AERIAL TAXI TO TAKEOFF							
AERIAL TAXI TO/FROM LANDING							
AERIAL TAXI, OTHER							
<u>TAKEOFF</u>							
RUN			3		3	3	3.13
INITIAL CLIMB	1	2			3	2	3.13
VERTICAL							
RUNNING (ROTORCRAFT/VTOL-STOL)							
ABORTED (FIXED-WING)			1		1	1	1.04
ABORTED (ROTORCRAFT/VTOL)							
ABORTED (ROTORCRAFT/STOL)							
OTHER							
<u>INFLIGHT</u>							
CLIMB TO CRUISE	1	1			2	2	2.08
NORMAL CRUISE	19				19	11	19.79
DESCENDING	1				1	1	1.04
HOLDING (IFR)							
HOVERING							
POWER-ON DESCENT (ROTORCRAFT)							
AUTOROTATIVE DESCENT							
ACROBATICS			1		1	1	1.04
BUZZING							
UNCONTROLLED DESCENT							

ANALYTIC TABLE

FIRST OPERATIONAL PHASE					RECORDS	ACCIDENTS	PERCENT
	FATAL	SERIOUS	MINOR	NONE			
<u>EMERGENCY DESCENT</u>							
LOW PASS			1		1	1	1.04
OTHER	7		1		8	5	8.33
EN ROUTE TO TREAT CROP							
EN ROUTE TO RELOADING AREA							
SURVEY FIELD/AREA							
STARTING SWATH RUN							
SWATH RUN	3				3	2	3.13
FLAREOUT FOR SWATH RUN							
PULLUP FROM SWATH RUN	1				1	1	1.04
PROCEDURE TURNAROUND							
CLEANUP SWATH							
MANEUVER TO AVOID OBSTRUCTION							
RETURN TO STRIP							
<u>LANDING</u>							
TRAFFIC PATTERN-CIRCLING	3				3	2	3.13
FINAL APPROACH (VFR)	10	2		7	19	10	19.79
INITIAL APPROACH							
FINAL APPROACH (IFR)							
LEVEL OFF/TOUCHDOWN			1	1	2	2	2.08
ROLL (FIXED WING)			1	10	11	7	11.46
ROLL-ON/RUN-ON (ROTORCRAFT)							
POWER-ON LANDING (ROTORCRAFT)							
POWER-OFF AUTOROTATIVE LDG							
GO-AROUND (VFR)							
MISSED APPROACH (IFR)							
OTHER							
UNKNOWN/NOT REPORTED							
RECORDS	46	4	4	42	96		
ACCIDENTS	23	2	2	21		48	
PERCENTS	47.9	4.2	4.2	43.7			

CAUSE/FACTOR TABLE
COLLISIONS
ACCIDENTS WITH ASSIGNED CAUSES ONLY

INVOLVES 47 TOTAL ACCIDENTS
INVOLVES 22 FATAL ACCIDENTS

BROAD CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
PILOT	22	1	22	24	2	24	46	3	46
	100.00	4.55	100.00	96.00	8.00	96.00	97.87	6.34	97.87
PERSONNEL	22	1	22	25	4	25	47	5	47
	100.00	4.55	100.00	100.00	16.00	100.00	100.00	10.64	100.00
AIRFRAME	1	1	2	.00	.00	.00	1	1	2
	4.55	4.55	9.09	.00	.00	.00	2.13	2.13	4.26
LANDING GEAR	.00	.00	.00	1	.00	1	1	.00	1
	.00	.00	.00	4.00	.00	4.00	2.13	.00	2.13
POWERPLANT	.00	.00	.00	.00	.00	.00	.00	.00	.00
SYSTEMS	.00	.00	.00	.00	.00	.00	.00	.00	.00
INSTRUMENTS/EQUIPMENT & ACCESSORIES	.00	.00	.00	.00	.00	.00	.00	.00	.00
ROTORCRAFT	.00	.00	.00	.00	.00	.00	.00	.00	.00
AIRPORT/AIRWAYS/FACILITIES	.00	.00	.00	.00	.00	.00	.00	.00	.00
WEATHER	.00	.00	.00	.00	.00	.00	.00	.00	.00
	.00	.00	.00	.00	.00	.00	.00	.00	.00
TERRAIN	.00	.00	.00	.00	.00	.00	.00	.00	.00
MISCELLANEOUS	1	.00	1	1	1	2	2	1	3
	4.55	.00	4.55	4.00	4.00	8.00	4.26	2.13	6.34
UNDETERMINED	.00	.00	.00	.00	.00	.00	.00	.00	.00

THE FIGURES OPPOSITE EACH CAUSAL CATEGORY REPRESENT THE NUMBER AND PERCENT OF ACCIDENTS IN WHICH THAT PARTICULAR CAUSAL CATEGORY WAS ASSIGNED

* IF AN ACCIDENT INCLUDES BOTH A CAUSE AND RELATED FACTOR IN THE SAME CAUSAL CATEGORY, THE ACCIDENT IS REPRESENTED ONCE UNDER THE TOTAL FOR THAT CATEGORY

CAUSE/FACTOR TABLE
COLLISIONS
ACCIDENTS WITH ASSIGNED CAUSES ONLY

INVOLVES 47 TOTAL ACCIDENTS

INVOLVES 22 FATAL ACCIDENTS

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
** PILOT **									
PILOT IN COMMAND									
DIVERTED ATTENTION FROM OPERATION OF AIRCRAFT	1		1	1	1	2	2	1	3
FAILED TO SEE AND AVOID OTHER AIRCRAFT	29		29	25	1	25	54		54
MISJUDGED, SPEED, ALTITUDE OR CLEARANCE	2		2			2	2		2
FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES ETC	5		5	7		7	12		12
IMPROPER IN-FLIGHT DECISIONS OR PLANNING				1		1	1		1
INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING	2		2	2		2	4		4
INADEQUATE SUPERVISION OF FLIGHT	1		1				1		1
LACK OF FAMILIARITY WITH AIRCRAFT					1	1		1	1
EXERCISED POOR JUDGMENT		1	1	1		1	1	1	2
TAXIED/PARKED WITHOUT PROPER ASSISTANCE				1		1	1		1
MISJUDGED CLEARANCE	2		2	2		2	4		4
INADEQUATE TRAINING OF STUDENT				1		1	1		1
SELECTED WRONG RUNWAY RELATIVE TO EXISTING WIND				1		1	1		1
FAILED TO INITIATE GO-AROUND				1		1	1		1
DIRECT ENTRIES				1		1	1		1
SUBTOTAL	42	1	43	44	2	46	86	3	89
DUAL STUDENT									
FAILED TO SEE OTHER AIRCRAFT	1		1	1		1	2		2
SUBTOTAL	1		1	1		1	2		2
** PERSONNEL **									
FLIGHT INSTRUCTOR									
MAINTENANCE, SERVICING, INSPECTION									
INADEQUATE MAINTENANCE AND INSPECTION				1		1	1		1
OPERATIONAL SUPERVISORY PERSONNEL									
INADEQUATE SUPERVISION OF FLIGHT CREW		2	2					2	2
WEATHER PERSONNEL									
TRAFFIC CONTROL PERSONNEL									
FAILURE TO ADVISE OF OTHER TRAFFIC				2	2	4	2	2	4
INADEQUATE SPACING OF AIRCRAFT				2		2	2		2
OTHER									
AIRPORT SUPERVISORY PERSONNEL									
AIRWAYS FACILITIES PERSONNEL									
PRODUCTION-DESIGN-PERSONNEL									
MISCELLANEOUS-PERSONNEL									
PILOT OF OTHER AIRCRAFT	34		34	32	2	34	66	2	68
THIRD PILOT									
FLIGHT ENGINEER									
FLIGHT PERSONNEL									
DISPATCHING (AIR CARRIER ONLY)									
SUBTOTAL	34	2	36	37	6	43	71	8	79
** AIRFRAME **									
WINGS									
FUSELAGE									
LANDING GEAR									
BRAKING SYSTEM (NORMAL)				1		1	1		1
FLIGHT CONTROL SURFACES									
HORIZONTAL STABILIZER, ATTACHMENTS	1	1	2				1	1	2
SUBTOTAL	1	1	2	1		1	2	1	3
** WEATHER **									
LOW CEILING									
					2	2		2	2
RAIN									
					2	2		2	2
OBSTRUCTIONS TO VISION									
					2	2		2	2
SUBTOTAL					6	6		6	6

CAUSE/FACTOR TABLE

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
** MISCELLANEOUS **									
DIRECT ENTRIES	2		2	1	2	3	3	2	5
SUBTOTAL	2		2	1	2	3	3	2	5
GRAND TOTAL	80	4	84	84	16	100	164	20	184
** MISCELLANEOUS ACTS, CONDITIONS **									
LOW FLUID LEVEL				1		1	1		1
DOWNWIND					1	1		1	1
DISREGARD OF GOOD OPERATING PRACTICE		1	1	1	1	2	1	2	3
UNWARRANTED LOW FLYING		2	2	1		1	1	2	1
POORLY PLANNED APPROACH		2	2					2	2
SEPARATION IN FLIGHT		2	2					2	2
CONGESTED TRAFFIC-PATTERN		2	2					2	2
SUNGLARE		2	2		1	1		3	3
AIRCRAFT CAME TO REST IN WATER		3	3					3	3
TOUCH AND GO LANDING		2	2					2	2

DIRECT ENTRY CAUSES

MISC - OTHER ACFT BRAKES FAILED
 PILOT FAILED TO MAINTAIN ADEQUATE SEPARATION
 PILOT FAILED TO MAINTAIN ADEQUATE SEPARATION
 PILOT-MISIDENTIFIED POSITION ON AIRPORT
 MISC - JEPPESEN J-AID RECOMMENDED WRONG LANDING RWY
 MISC - JEPPESEN J-AID RECOMMENDED WRONG LANDING RWY

DIRECT ENTRY CAUSES ARE CARRIED UNDER THEIR APPROPRIATE CAUSAL CATEGORIES AND ARE INCLUDED IN THE TOTALS

ANALYTIC TABLE

KIND OF FLYING BY INJURY INDEX COLLISIONS

KIND OF FLYING	KIND OF FLYING BY INJURY INDEX COLLISIONS				RECORDS	ACCIDENTS	PERCENT
	FATAL	SERIOUS	MINOR	NONE			
<u>INSTRUCTIONAL</u>							
DUAL	7	1	5				
SOLO	3		1		13	13	13.54
CHECK					4	4	4.17
TRAINING	2		3				
					5	4	5.21
<u>NONCOMMERCIAL</u>							
PLEASURE	19	2	1	16			
PRACTICE			1	3	38	30	39.58
BUSINESS			1	3	4	3	4.17
CORPORATE/EXECUTIVE	2			1	4	4	4.17
AERIAL SURVEY					3	3	3.13
COMPANY FLIGHT							
OTHER							
<u>COMMERCIAL</u>							
AERIAL APPLICATION	4				4	2	4.17
CROP CONTROL RELATED FLIGHT		1		2	3	3	3.13
FIRE CONTROL							
FIRE CONTROL RELATED FLIGHT							
AERIAL MAPPING/PHOTOGRAPHY							
AERIAL ADVERTISING							
POWER AND PIPELINE PATROL	1						
FISH SPOTTING					1	1	1.04
AIR TAXI-PASSENGER OPERATIONS	3	1		4	8	6	8.33
AIR TAXI-CARGO OPERATIONS							
CONSTRUCTION WORK							
SCHEDULED PASSENGER SERVICE							
SCHEDULED CARGO SERVICE							
INTRA-STATE CHARTER PASSG.							
INTRA-STATE CHARTER CARGO.							
MILITARY CONTRACT-PASSENGER							
MILITARY CONTRACT-CARGO							
CHARTER CARGO-DOMESTIC							
CHARTER PASSG-DOMESTIC							
CHARTER-CARGO-INTERNATIONAL							
CHARTER-PASSG-INTERNATIONAL							
OTHER							
UNKNOWN/NOT REPORTED							

ANALYTIC TABLE

KIND OF FLYING					RECORDS	ACCIDENTS	PERCENT
	FATAL	SERIOUS	MINOR	NONE			
<u>MISCELLANEOUS</u>							
EXPERIMENTATION					1	1	1.04
TEST			1				
DEMONSTRATION							
FERRY							
SEARCH AND RESCUE	1				1	1	1.04
AIR SHOW/AIR RACING	2				2	1	2.08
PARACHUTE JUMP	1				1	1	1.04
PARACHUTE JUMP-AIR SHOW							
TOWING GLIDERS	1				1	1	1.04
SEEDING CLOUDS							
HUNTING							
POLICE PATROL							
ALL OTHER PUBLIC FLYING							
OTHER			2		2	1	2.08
UNKNOWN/NDT REPORTED			1		1	1	1.04
RECORDS	46	4	4	42	96		
ACCIDENTS	23	2	2	21		48	
PERCENTS	47.9	4.2	4.2	43.8			

ANALYTIC TABLE

KIND OF FLYING BY AIRCRAFT DAMAGE
COLLISIONS

KIND OF FLYING	KIND OF FLYING BY AIRCRAFT DAMAGE COLLISIONS			RECORDS	ACCIDENTS	PERCENT
	DESTROYED	SUBSTANTIAL	MINOR NONE			
<u>INSTRUCTIONAL</u>						
DUAL	7	5	1	13	13	13.54
SOLO	3		1	4	4	4.17
CHECK						
TRAINING	1	4		5	4	5.21
<u>NONCOMMERCIAL</u>						
PLEASURE	14	19	5	38	30	39.58
PRACTICE		3	1	4	3	4.17
BUSINESS		3	1	4	4	4.17
CORPORATE/EXECUTIVE	2		1	3	3	3.13
AERIAL SURVEY						
COMPANY FLIGHT						
OTHER						
<u>COMMERCIAL</u>						
AERIAL APPLICATION	2	1	1	4	2	4.17
CROP CONTROL RELATED FLIGHT	1	1	1	3	3	3.13
FIRE CONTROL						
FIRE CONTROL RELATED FLIGHT						
AERIAL MAPPING/PHOTOGRAPHY						
AERIAL ADVERTISING						
POWER AND PIPELINE PATROL	1			1	1	1.04
FISH SPOTTING						
AIR TAXI-PASSENGER OPERATIONS	2	6		8	6	8.33
AIR TAXI-CARGO OPERATIONS						
CONSTRUCTION WORK						
SCHEDULED PASSENGER SERVICE						
SCHEDULED CARGO SERVICE						
INTRA-STATE CHARTER PASSG.						
INTRA-STATE CHARTER CARGO.						
MILITARY CONTRACT-PASSENGER						
MILITARY CONTRACT-CARGO						
CHARTER CARGO-DOMESTIC						
CHARTER PASSG-DOMESTIC						
CHARTER-CARGO-INTERNATIONAL						
CHARTER-PASSG-INTERNATIONAL						
OTHER						
UNKNOWN/NOT REPORTED						

ANALYTIC TABLE

DESTROYED
SUBSTANTIAL
MINOR
NONE

<u>KIND OF FLYING</u>				RECORDS	ACCIDENTS	PERCENT
<u>MISCELLANEOUS</u>						
EXPERIMENTATION						
TEST	1			1	1	1.04
DEMONSTRATION						
FFRRY						
SEARCH AND RESCUE	1			1	1	1.04
AIR SHOW/AIR RACING	2			2	1	2.08
PARACHUTE JUMP	1			1	1	1.04
PARACHUTE JUMP-AIR SHOW						
TOWING GLIDERS	1			1	1	1.04
SEEDING CLOUDS						
HUNTING						
POLICE PATROL						
HIGHWAY TRAFFIC ADVISORY						
ALL OTHER PUBLIC FLYING						
OTHER	2			2	1	2.08
UNKNOWN/NOT REPORTED	1			1	1	1.04
RECORDS	38	46	11	1	96	
ACCIDENTS	23	31	11	1	48	
PERCENTS	39.6	47.9	11.5	1.0		

ANALYTIC TABLE

SEGMENTS OF AVIATION INVOLVED BY INJURY INDEX COLLISIONS

	INJURY INDEX				RECORDS	ACCIDENTS	PERCENT
	FATAL	SERIOUS	MINOR	NONE			
SML US GEN AVN-COLLISION SAME	46	4	4	42	96	48	100.00
SML US GEN AVN-LRG US GEN AVN							
SML US GEN AVN-US AIR CARRIER							
SML US GEN AVN-US MILITARY							
SML US GEN AVN-FOREIGN GEN AV							
SML US GEN AVN-FOREIGN ACR							
SML US GEN AVN-FOREIGN MIL							
LRG US GEN AVN-COLLISION SAME							
LRG US GEN AVN-US AIR CARRIER							
LRG US GEN AVN-US MILITARY							
LRG US GEN AVN-FOREIGN GEN AV							
LRG US GEN AVN-FOREIGN ACR							
LRG US GEN AVN-FOREIGN MIL							
US AIR CARRIER-US AIR CARRIER							
U.S.AIR CARRIER-U.S.MILITARY							
US ACR-FOREIGN GEN AVIATION							
US AIR CARRIER-FOREIGN ACR							
US AIR CARRIER-FOREIGN MIL							
RECORDS	46	4	4	42	96		
ACCIDENTS	23	2	2	21		48	
PERCENTS	47.9	4.2	4.2	43.8			

ANALYTIC TABLE

PILOT AGE BY INJURY INDEX
COLLISIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
14							
15							
16				1	1	1	1.04
17							
18							
19				3	3	2	3.13
20	1			1	2	2	2.08
21	1			1	2	2	2.08
22	1		1	2	4	4	4.17
23	1				1	1	1.04
24				1	1	1	1.04
25	1			1	2	2	2.08
26	2				2	2	2.08
27	4				4	4	4.17
28	2	1			3	3	3.13
29	2	1		1	4	4	4.17
30	2				2	2	2.08
31				3	3	3	3.13
32	3			1	4	4	4.17
33							
34				2	2	2	2.08
35	1				1	1	1.04
36	1		1		2	2	2.08
37				1	1	1	1.04
38	1			2	3	3	3.13
39	1			1	2	2	2.08
40	4				4	4	4.17
41	1			2	3	3	3.13
42	1			1	2	2	2.08
43	2			2	4	4	4.17
44	2				2	2	2.08
45	2			2	4	4	4.17
46	2			2	4	4	4.17
47		1			1	1	1.04
48	2			1	3	3	3.13
49	1				1	1	1.04
50				1	1	1	1.04

ANALYTIC TABLE

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
51	1			2	3	3	3.13
52	1			3	4	4	4.17
53							
54	1			1	2	2	2.08
55				2	2	2	2.08
56							
57		1			1	1	1.04
58			1		1	1	1.04
59							
60	1				1	1	1.04
61							
62							
63	1				1	1	1.04
64				1	1	1	1.04
65				1	1	1	1.04
66							
67							
68							
69							
70							
71							
74							
75							
76							
78							
UNKNOWN			1		1	1	1.04
RECORDS	46	4	4	42	96		
ACCIDENTS	23	2	2	21		48	
PERCENTS	47.9	4.2	4.2	43.8			

ANALYTIC TABLE

PILOT CERTIFICATE BY INJURY INDEX COLLISIONS

PILOT CERTIFICATE	INJURY INDEX COLLISIONS				RECORDS	ACCIDENTS	PERCENT
	FATAL	SERIOUS	MINOR	NONE			
STUDENT	4			5	9	9	9.38
PRIVATE	15	2	2	14	33	29	34.38
COMMERCIAL	12	2	1	12	27	23	28.13
AIRLINE TRANSPORT	3			2	5	5	5.21
PRIVATE W/FLIGHT INSTRUCTOR							
COML WITH FLT INSTRUCTOR	11		1	5	17	16	17.71
ATR W/FLIGHT INSTRUCTOR	1			4	5	4	5.21
OTHER							
NONE							
UNKNOWN/NOT REPORTED							
RECORDS	46	4	4	42	96		
ACCIDENTS	23	2	2	21		48	
PERCENTS	47.9	4.2	4.2	43.8			

ANALYTIC TABLE

MONTH OF OCCURRENCE BY INJURY INDEX COLLISIONS

MONTH	INJURY INDEX COLLISIONS				RECORDS	ACCIDENTS	PERCENT
	FATAL	SERIOUS	MINOR	NONE			
01	2			2	4	2	4.17
02	2	2	2	10	16	8	16.67
03	4				4	2	4.17
04	6				6	3	6.25
05	2				2	1	2.08
06	4			8	12	6	12.50
07	12	2		6	20	10	20.83
08	2			2	4	2	4.17
09				2	2	1	2.08
10	4		2	6	12	6	12.50
11	6			2	8	4	8.33
12	2			4	6	3	6.25
RECORDS	46	4	4	42	96		
ACCIDENTS	23	2	2	21		48	
PERCENTS	47.9	4.2	4.2	43.8			

ANALYTIC TABLE

STATE OF OCCURRENCE BY INJURY INDEX
COLLISIONS

FATAL
SERIOUS
MINOR
NONE

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
ALABAMA	2				2	1	2.08
ALASKA	4		2		6	3	6.25
ARIZONA			2		2	1	2.08
CALIFORNIA	10		8		18	9	18.75
COLORADO			4		4	2	4.17
DELAWARE		2			2	1	2.08
FLORIDA			4		4	2	4.17
HAWAII		2			2	1	2.08
ILLINOIS	4		2		6	3	6.25
INDIANA	2				2	1	2.08
IOWA			2		2	1	2.08
KENTUCKY	2		2		4	2	4.17
LOUISIANA	2		2		4	2	4.17
MINNESOTA	4				4	2	4.17
MISSISSIPPI			2	2	4	2	4.17
MISSOURI	2	2	2		6	3	6.25
NEW JERSEY	2				2	1	2.08
NEW YORK	4		4		8	4	8.33
OKLAHOMA	4				4	2	4.17
SOUTH DAKOTA			2		2	1	2.08
TEXAS	4		2		6	3	6.25
VIRGINIA			2		2	1	2.08
RECORDS	46	4	4	42	96		
ACCIDENTS	23	2	2	21		48	
PERCENTS	47.9	4.2	4.2	43.8			

ANALYTIC TABLE

STATE OF OCCURRENCE BY AIRCRAFT DAMAGE COLLISIONS

	STATE OF OCCURRENCE BY AIRCRAFT DAMAGE COLLISIONS				RECORDS	ACCIDENTS	PERCENT
	DESTROYED	SUBSTANTIAL	MINOR	NONE			
ALABAMA	1			1	2	1	2.08
ALASKA	2	3	1		6	3	6.25
ARIZONA		1	1		2	1	2.08
CALIFORNIA	9	6	3		18	9	18.75
COLORADO		4			4	2	4.17
DELAWARE	2				2	1	2.08
FLORIDA		3	1		4	2	4.17
HAWAII		2			2	1	2.08
ILLINOIS	3	2	1		6	3	6.25
INDIANA	2				2	1	2.08
IOWA		2			2	1	2.08
KENTUCKY	2	1	1		4	2	4.17
LOUISIANA	1	2	1		4	2	4.17
MINNESOTA	4				4	2	4.17
MISSISSIPPI		4			4	2	4.17
MISSOURI	3	3			6	3	6.25
NEW JERSEY		2			2	1	2.08
NEW YORK	3	5			8	4	8.33
OKLAHOMA	3		1		4	2	4.17
SOUTH DAKOTA		2			2	1	2.08
TEXAS	3	2	1		6	3	6.25
VIRGINIA		2			2	1	2.08
RECORDS	38	46	11	1	96		
ACCIDENTS	23	31	11	1		48	
PERCENTS	39.6	47.9	11.5	1.0			

ANALYTIC TABLE

TYPE AIRCRAFT BY AIRCRAFT DAMAGE COLLISIONS

	DAMAGE				RECORDS	ACCIDENTS	PERCENT
	DESTROYED	SUBSTANTIAL	MINOR	NONE			
FIXED-WING	37	46	11	1	95	48	98.96
HELICOPTER							
GLIDER	1				1	1	1.04
BALLOON							
BLIMP							
DIRIGIBLE							
ROCKET							
CONVERTIPLANE							
GYROPLANE							
OTHER							
RECORDS	38	46	11	1	96	48	
ACCIDENTS	23	31	11	1			
PERCENTS	39.6	47.9	11.5	1.0			

ANALYTIC TABLE

TYPE OF POWER BY INJURY INDEX COLLISIONS

	INJURY INDEX				RECORDS	ACCIDENTS	PERCENT
	FATAL	SERIOUS	MINOR	NONE			
RECIPROCATING ENGINE	44	4	4	40	92	47	95.83
TURBOJET ENGINE							
TURBOPROP ENGINE	1			2	3	2	3.13
TURBOFAN ENGINE							
NONE	1				1	1	1.04
TURBOSHAFT							
RECORDS	46	4	4	42	96	48	
ACCIDENTS	23	2	2	21			
PERCENTS	47.9	4.2	4.2	43.8			

ANALYTIC TABLE

TYPE OF FLIGHT PLAN BY INJURY INDEX COLLISIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
NONE	40	2	4	35	81	44
VFR	5	1		6	12	9
IFR	1			1	2	2
CONTROLLED VFR						
IFR (VFR CONDITIONS ON TOP)						
TOWER EN ROUTE CONTROL SERVICE						
DVFR						
VFR FLIGHT FOLLOWING SERVICE						
SPECIAL VFR						
OTHER						
UNKNOWN/NOT REPORTED		1			1	1
RECORDS	46	4	4	42	96	
ACCIDENTS	23	2	2	21		48

ANALYTIC TABLE

TYPE OF WEATHER BY INJURY INDEX COLLISIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
VFR	46	4	4	42	96	48
IFR						
BELOW MINIMUMS						
UNKNOWN/NOT REPORTED						
RECORDS	46	4	4	42	96	
ACCIDENTS	23	2	2	21		48

ANALYTIC TABLE

AIRPORT PROXIMITY BY INJURY INDEX COLLISIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
ON AIRPORT	6	2	4	38	50	25	52.00
ON SEAPLANE BASE							
ON HELIPORT							
ON BARGE/SHIP/PLATFORM							
IN TRAFFIC PATTERN	5	2			7	4	7.00
WITHIN 1/4 MILE	2				2	1	2.00
WITHIN 1/2 MILE	2				2	1	2.00
WITHIN 3/4 MILE	2				2	1	2.00
WITHIN 1 MILE							
WITHIN 2 MILES							
WITHIN 3 MILES	1			1	2	2	2.00
WITHIN 4 MILES	2				2	1	2.00
WITHIN 5 MILES				1	1	1	1.00
BEYOND 5 MILES	26				26	13	27.00
UNKNOW/NOT REPORTED				2	2	1	2.00
RECORDS	46	4	4	42	96		
ACCIDENTS	23	2	2	21		48	
PERCENTS	47.9	4.2	4.2	43.8			

ANALYTIC TABLE

CONTROLLED/UNCONTROLLED AIRPORT BY INJURY INDEX COLLISIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
CONTROLLED AIRPORT	9	2		12	23	12	36.51
UNCONTROLLED AIRPORT	12	2	4	22	40	20	63.49
RECORDS	21	4	4	34	63		
ACCIDENTS	11	2	2	17		32	
PERCENTS	33.3	6.3	6.3	54.0			

ANALYTIC TABLE

CONDITIONS OF LIGHT BY INJURY INDEX COLLISIONS

	INJURY INDEX				RECORDS	ACCIDENTS
DAWN						
DAYLIGHT	42	4	4	40	90	45
DUSK	2			2	4	2
NIGHT (DARK)						
NIGHT (MOONLIGHT-BRIGHT)	2				2	1
UNKNOWN/NOT REPORTED						
RECORDS	46	4	4	42	96	
ACCIDENTS	23	2	2	21		48

ANALYTIC TABLE

FIRE AFTER IMPACT BY INJURY INDEX COLLISIONS

	INJURY INDEX				RECORDS	ACCIDENTS	PERCENT
YES					7	5	100.00
UNKNOWN/NOT REPORTED							
RECORDS					7		
ACCIDENTS						5	
PERCENTS	100.0	.0	.0	.0			

INJURIES, ACCIDENTS
COLLISIONS

	INJURIES					TOTAL
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	
PILOT	36	2	3	55		96
COPilot				3		3
DUAL STUDENT	7			6		13
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT	1			1		2
EXTRA CREW	15	1	14	50		80
PASSENGERS						
TOTAL	59	3	17	115		194
ABOARD						
OTHER AIRCRAFT						
OTHER GROUND			6			6
GRAND TOTAL	59	3	23	115		200

INVOLVES 48 TOTAL ACCIDENTS
INVOLVES 23 FATAL ACCIDENTS

INJURIES, ACCIDENTS
BOTH AIRCRAFT AIRBORNE
COLLISIONS

	INJURIES					TOTAL
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	
PILOT	36	2	2	20		60
COPILOT	7			1		8
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR	1					1
CABIN ATTENDANT	15		5	16		36
EXTRA CREW						
PASSENGERS						
TOTAL	59	2	7	37		105
ABOARD						
OTHER AIRCRAFT						
OTHER GROUND			6			6
GRAND TOTAL	59	2	13	37		111

INVOLVES 30 TOTAL ACCIDENTS
INVOLVES 23 FATAL ACCIDENTS

**INJURIES, ACCIDENTS
ONE AIRCRAFT AIRBORNE
COLLISIONS**

	INJURIES					TOTAL
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	
PILOT			1	5		6
COPILOT						
DUAL STUDENT				1		1
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS			1	4		5
TOTAL			2	10		12
ABOARD						
OTHER AIRCRAFT						
OTHER GROUND						
GRAND TOTAL			2	10		12

INVOLVES 3 TOTAL ACCIDENTS
INVOLVES FATAL ACCIDENTS

INJURIES, ACCIDENTS
COLLISIONS
BOTH AIRCRAFT ON GROUND

	INJURIES				TOTAL
	FATAL	SERIOUS	MINOR	NONE	
PILOT				30	30
COPILOT				3	3
DUAL STUDENT				4	4
CHECK PILOT					
FLIGHT ENGINEER					
NAVIGATOR					
CABIN ATTENDANT				1	1
EXTRA CREW	1	8		30	39
PASSENGERS					
TOTAL	1	8	68	77	77
ABOARD					77
OTHER AIRCRAFT					
OTHER GROUND					
GRAND TOTAL	1	8	68	77	77

INVOLVES 15 TOTAL ACCIDENTS
INVOLVES FATAL ACCIDENTS

YEARLY ACCIDENT RECORD

ACCIDENTS, FATALITIES, RATES
U. S. GENERAL AVIATION

1967 - 1976

Year	Accidents		Fatalities	Aircraft- Hours Flown (000) c/	Aircraft- Miles Flown (000) c/	Accident Rates			
	Total	Fatal				Per 100,000 Aircraft- Hours Flown Total	Per Million Aircraft- Miles Flown Total		
1967	6,115	603	1,229	22,153	3,439,964	27.6	2.72	1.78	0.175
1968	4,968 a/	692 a/	1,399	24,053	3,700,864	20.6	2.86	1.34	0.186
1969	4,767	647	1,413 b/	25,351	3,926,461	18.8	2.55	1.21	0.164
1970	4,712 a/	641 a/	1,310	26,030	3,207,127	18.1	2.46	1.47	0.200
1971	4,648	661	1,355	25,512	3,143,181	18.2	2.59	1.48	0.211
1972	4,256 a/	695 a/	1,421 b/	26,974	3,317,100	15.8	2.57	1.28	0.209
1973	4,255 a/	723 a/	1,412	30,048	3,728,500	14.2	2.40	1.14	0.193
1974	4,425 a/	729 a/	1,438	32,475	4,042,700	13.6	2.24	1.04	0.180
1975	4,237 a/	675 a/	1,345	34,165	4,238,400	12.4	1.97	1.00	0.159
1976	4,193	695	1,320	36,128	4,476,014	11.6	1.92	0.94	0.155

a/ Suicide/sabotage accidents included in all computations except rates (1968-3, 1970-1, 1972-3, 1973-2, 1974-2, 1975-2, 1976-4).

b/ Excludes air carrier fatalities --- 1967-104, 1969-82, 1972-5) when in collision with general aviation aircraft.

c/ Source: FAA

d/ Commencing January 1, 1968, the definition of substantial damage was changed; therefore, fewer accidents were reported. Care should be used in comparing with similar data for prior years.

e/ Beginning in 1970, the decrease in aircraft-miles flown is the result of a change in the FAA standard for estimating miles flown.

EXPLANATORY NOTES

EXPLANATORY NOTES

GENERAL AVIATION

General Aviation refers to the operation of U. S. Civil Aircraft owned and operated by persons, corporations, etc., other than those engaged in U. S. air carrier operations. (U. S. air carrier operations include the certificated route air carriers, supplemental air carriers, and commercial operators of large aircraft).

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 total number of accidents shown in this publication should not be compared with the total number of accidents for any year prior to 1968. This is because of the effect of an amendment to Section 430.2 of Part 430 of the National Transportation Safety Board's Regulations, effective January 1, 1968. The change which influenced the decrease in the number of total accidents was to "substantial damage" to aircraft of 12,500 pounds maximum certificated takeoff weight or less, as follows:

Before January 1, 1968, the definition of substantial damage was:

- (1) Except as provided in subparagraph (2) of this paragraph:
 - (i) Substantial damage in aircraft of 12,500 pounds maximum certificated takeoff weight or less means damage or structural failure reasonably estimated to cost \$300 or more to repair.
 - (ii) Substantial damage in aircraft of more than 12,500 pounds maximum certificated takeoff weight means damage or structural failure which adversely affects the structural strength, performance, or flight characteristics of the aircraft, and which would normally require major repairs 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, taxiing damage to propeller blades, damage to tires, engine accessories, brakes or wingtips are not considered "substantial damage" for the purpose of this part.

The amendment, however, changed the definition of substantial damage. Effective January 1, 1968, the definition of substantial damage was changed to read:

- (1) Except as provided in subparagraph (2) of this paragraph,

AIRCRAFT ACCIDENT (Cont'd)

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

(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" for this part.

INJURY INDEX

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

TYPE OF ACCIDENT

Type of accident relates to the immediate circumstances of the occurrence. Many accidents involve a series of circumstances and therefore require a second type to more fully describe the sequence of events. The fold out page shows the relationship of first and second accident types. Some examples of types of accidents are as follows:

Gear Collapsed

Collapse of the landing gear due to mechanical failure other than a malfunction of the retracting mechanism.

Gear Retracted

Retraction of the landing gear due to malfunction or failure of the retracting mechanism or to inadvertent retraction by the crew. Excludes intentional gear retraction and wheels-up landing.

Airframe Failure

Occurrences resulting from failure of any part of the airframe while in flight or in motion on the ground. Excludes failure resulting from contact with another airplane or object, or impact with the ground, or damage from landing gear collapse or retraction.

Engine Failure/Malfunction

Occurrences of engine failure or malfunction for any reason. Includes engine stoppage, power interruption or power loss.

EXPLANATORY NOTES

PHASE OF OPERATION

The phase of operation relates to the particular segment of the flight or operation during which the circumstances of the accident occur.

KIND OF FLYING

Refers to the purpose for which the aircraft is being operated at the time of the accident. There are four broad categories of kind of flying.

1. Instructional Flying

Refers to flying accomplished in supervised training under the direction of an accredited instructor.

2. Noncommercial Flying

Refers to the use of an aircraft for purposes of pleasure, personal transportation or in connection with a private business, in corporate/executive operations, and in other operations, wherein there is no direct monetary fee charged. It includes the following categories:

Pleasure

Flying by individuals in their own or rented aircraft for pleasure, or personal transportation not in furtherance of their occupation or company business.

Business

The use of aircraft by pilots (not receiving direct salary or compensation for piloting) in connection with their occupation or in the furtherance of a private business.

Corporate/Executive Operations

The use of aircraft owned or leased, and operated by a corporation or business firm for the transportation of personnel or cargo in furtherance of the corporation's or firm's business, and which are flown by professional pilots receiving a direct salary or compensation for piloting.

3. Commercial Flying

Commercial flying includes all general aviation flying normally conducted for direct financial return, except instructional flying. It includes air taxi operations, aerial application, fire control, aerial mapping or photography, aerial advertising, power/pipeline patrol and fish spotting.

EXPLANATORY NOTES

4. Miscellaneous Flying

Includes other kinds of flying not covered under the other three broad categories. In some instances, the criterion of direct financial return may or may not be present.

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 (parked, unoccupied aircraft). A collision between aircraft is treated as one accident in the overall total. However, each aircraft involved in a collision is analyzed completely and coded, thus two aircraft accident records are produced -- one for each aircraft. These records contain the same broad categories of coded data; however, the specific entries, such as type of aircraft, kind of flying, and phase of operation, may not be common to each aircraft. As a result, the number of accidents may differ in the various tables depending on whether collisions are involved. If collisions are involved, the number of accidents would depend on whether the selected data are common to each aircraft. For example, in a table which shows the number of accidents in the various kinds of flying, if each of the colliding aircraft was conducting pleasure flying, one accident would appear in the pleasure flying column. However, if one aircraft was engaged in pleasure flying and the other was conducting dual instruction, the accident would appear twice -- in the pleasure flying column and in the dual instruction column.

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-effect relationships in the accident sequence about which something can be done to prevent recurrence of the type of accident under consideration. For statistical purposes where two or more causes exist in an accident, each is recorded and no attempt is made to establish a primary cause. Therefore, in the cause/related factor tables, the figures shown in the columns dealing with cause may exceed the total number of accidents. The term "factor" is used, in general, to denote those elements of an accident which further explain or supplement the probable cause(s). This provision was incorporated in the coding system to increase flexibility and to provide a means for collecting essential items of information which could not be readily categorized elsewhere in the system.

The number of total accidents and fatal accidents shown in the cause/factor tables may not agree with the number of total accidents or fatal accidents in other tables covering the same basic aircraft category or operational segment of General Aviation. This is because accidents that occurred on foreign soil were investigated and analyzed for cause by the government of the country involved, and in many cases the final report has been received. All accidents awaiting final causal determination were excluded from the cause/factor tables.

SMALL FIXED-WING AIRCRAFT

Aircraft which have a certificated maximum gross takeoff weight of 12,500 pounds, or less.

LARGE FIXED-WING AIRCRAFT

Aircraft which have a certificated maximum gross takeoff weight in excess of 12,500 pounds.

ROTORCRAFT

Aircraft which in all usual flight attitudes are supported in the air wholly or in part by a rotor or rotors, i.e., by airfoils rotating or revolving about an axis.

ABBREVIATIONS

AIRCRAFT

SFW - Small Fixed-Wing
LFW - Large Fixed-Wing
ROTOR - Rotorcraft

ENGINES

SE - Single Engine
ME - Multiengine

AIRCRAFT DAMAGE

DEST - Destroyed
SUBST - Substantial

WEATHER CONDITIONS AND/OR TYPE OF FLIGHT PLAN

VFR - Visual Flight Rules
IFR - Instrument Flight Rules
DVFR - Defense Visual Flight Rules

MISCELLANEOUS

EST - Estimated
FAA - Federal Aviation Administration
FAR - Federal Aviation Regulations
NA - Not Available
PASSG - Passenger
UNK - Unknown

EMBRY-RIDDLE AERO U. DAYTONA BEACH
3 1745 00070 9751

NTSB Annual Review of Aircraft
ARG Accident Data for 1976
78-1

NTSB Annual Review of Aircraft
ARG Accident Data for 1976
78-1

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