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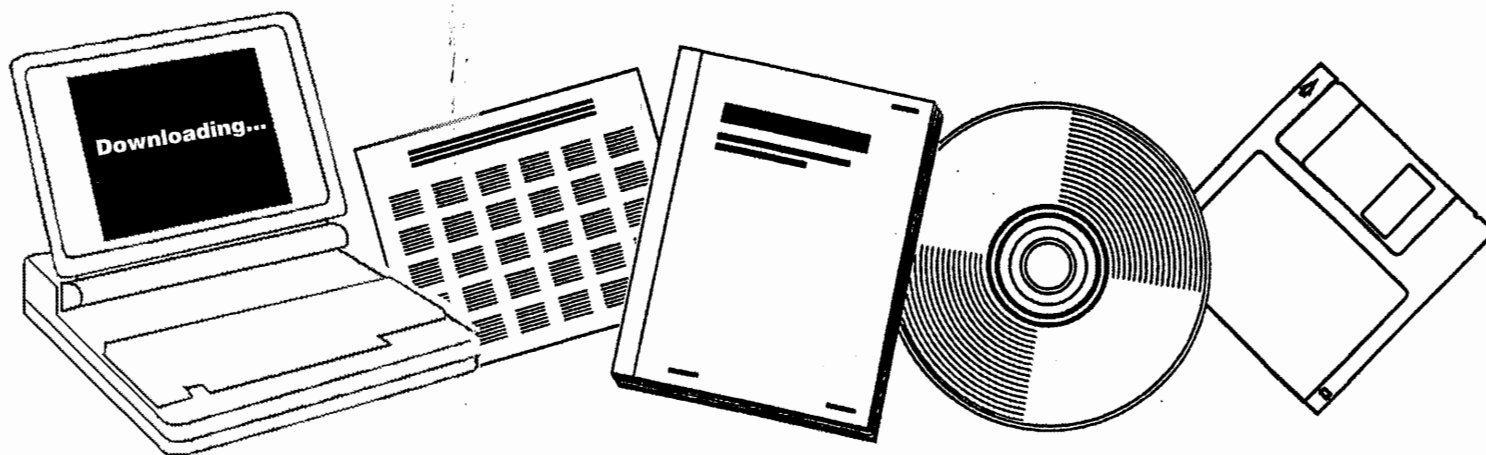
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ANNUAL REVIEW OF AIRCRAFT ACCIDENT DATA. U.S. GENERAL AVIATION CALENDAR YEAR 1971

NATIONAL TRANSPORTATION SAFETY BOARD,
WASHINGTON, D.C. BUREAU OF AVIATION
SAFETY

29 MAY 1974



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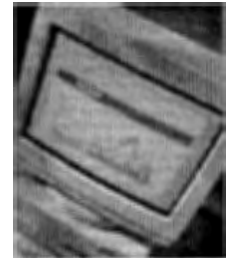


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**ANNUAL REVIEW
OF
AIRCRAFT ACCIDENT DATA**

**U.S. GENERAL AVIATION
CALENDAR YEAR 1971
ADOPTED: MAY 29, 1974**

**NATIONAL TRANSPORTATION SAFETY BOARD
Washington, D.C. 20591**

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FOREWORD

The Statistical Review of General Aviation Accidents is published annually by the National Transportation Safety Board. This publication contains statistical information compiled from reports of 4,648 General Aviation accidents that occurred during the calendar year 1971.

In the analysis of accidents a collision between aircraft is treated as one accident in the overall total. However, a complete analysis and coding is made on each aircraft involved in a collision. This produces two aircraft accident records, 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, phase of operation, etc., may or may not be common to each aircraft. As a result, the number of accidents may differ in the various tables depending upon whether or not collisions are involved and if so, whether or not the selected items of data are common to each aircraft. For example: In a table showing the number of accidents occurring in the various kinds of flying, if each of the colliding aircraft were 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, once in the pleasure flying column, and once in the dual instruction column.

Included in the total number of accidents are 51 collisions between aircraft. By coding each aircraft involved in the collisions an additional 51 records are produced, bringing the total accident records to 4,699. This figure reflects the true number of pilots and aircraft involved in the 4,648 accidents. Three U. S. Air Carrier and one U. S. military aircraft were involved in these collisions. The tabulations of statistical information exclude the three air carrier records, except where noted. The accident record of U. S. Air Carrier operations is contained in a separate publication entitled, Annual Review of Aircraft Accident Data, U. S. Air Carriers.

May 1974



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ANALYSIS OF STATISTICAL INFORMATION

ANALYSIS OF ACCIDENTS

Overview

In U. S. general aviation in 1971, 4,648 accidents occurred, a 1.36 percent-decrease from the 4,712 accidents in 1970. (See Table 1.) 1971 was the third consecutive year for a decrease in the number of accidents. (See Figure 1.)

Since 1961, fatal accidents have increased steadily to a high of 69% in 1968. The 2 years following have shown decreases: 647 fatal accidents in 1969 (6.5 percent-decrease), and 641 fatal accidents in 1970 (0.93-percent decrease). In 1971, however, fatal accidents increased to 661 (3.12 percent-increase).

In 1971, 4,699 aircraft were involved in 4,648 general aviation accidents. Over 22 percent of these aircraft were destroyed, and 76.4 percent were damaged substantially. Of the 4,648 accidents, 661 were fatal (14.2 percent), and 409 resulted in serious injury (8.8 percent.) Serious injury was the highest degree of injury sustained in the 409 accidents while minor injury represented the highest degree of injury in 640 accidents (13.8 percent.) In 2,938 accidents no one was injured, (62.2 percent of the total).

Of the 9,505 persons aboard aircraft involved in accidents in 1971, 1,839 (14.1 percent) were killed and 729 (7.7 percent) were injured seriously. In addition, 1,174 persons, (12.4 percent) received minor injuries, and 6,263 (65.9 percent) were not injured. An average of 2.02 persons were aboard each of the aircraft involved in an accident in 1971.

Fire after impact occurred in 207 (31.3 percent) fatal accidents, but in only 125 (3.1 percent) nonfatal accidents. In other words, 62.3 percent of the accidents in which fire was involved after impact were fatal accidents.

In 1971, the 25.5 million aircraft-hours flown in U. S. general aviation were less than the hours reported for 1970, but nearly double the 1961 total of 13.6 million hours. During the same period, the total accident rate per 100,000 aircraft-hours flown has had a downward trend. There was a substantial decrease in the number of accidents in 1968 compared with the number of accidents in 1967 (Figure 1) and a corresponding decrease in the total accident rate (Figure 2). This decrease resulted primarily because of a change in the definition of "substantial damage" (Section 430.2 of the National Transportation Safety Board's Regulations).

From 1968 to 1971, the accident trend was downward -- from 4,968 accidents in 1968 to 4,648 in 1971. Likewise, the total accident rate per 100,000 aircraft-hours flown has had a decreasing trend.

The fatal accident rate per 100,000 aircraft-hours flown fluctuated little from year to year during 1961-71 (Figure 2). Since 1964, the fatal accident rate has had a decreasing trend, 3.34 in 1964 to 2.59 in 1971 with a low of 2.46 in 1970.

Table 1

Overview
U. S. General Aviation

1970-1971

	<u>1970</u>	<u>1971</u>	<u>Percentage Change</u>
<u>Aircraft-hours flown</u>	26,030,414	25,512,000	- 1.99
<u>Eligible aircraft</u>	131,743	131,149	- 0.45
<u>Total accidents</u>	4,712	4,648	- 1.36
<u>Aircraft involved</u>	4,775	4,699	- 1.59
<u>Aircraft damage</u>			
Destroyed	1,034	1,060	+ 2.51
Substantial	3,697	3,591	- 2.87
Minor/none	43	48	+ 11.63
Unknown/not reported	1	0	-100.00
<u>Injury index</u>			
Fatal	641	661	+ 3.12
Serious	388	409	+ 5.41
Minor	644	640	- 0.62
None	3,039	2,938	- 3.32
<u>Injuries</u>			
Fatal	1,310	1,355	+ 3.44
Serious	715	745	+ 4.20
Minor	1,179	1,207	+ 2.37
None	6,800	6,413	- 5.69
<u>Total aboard</u>	9,935	9,505	- 4.33
<u>Fine after impact</u>			
Fatal accidents	202	207	+ 2.48
Nonfatal accidents	142	125	- 11.97

FIGURE 1

ACCIDENTS, FATALITIES U. S. GENERAL AVIATION 1961 - 1971

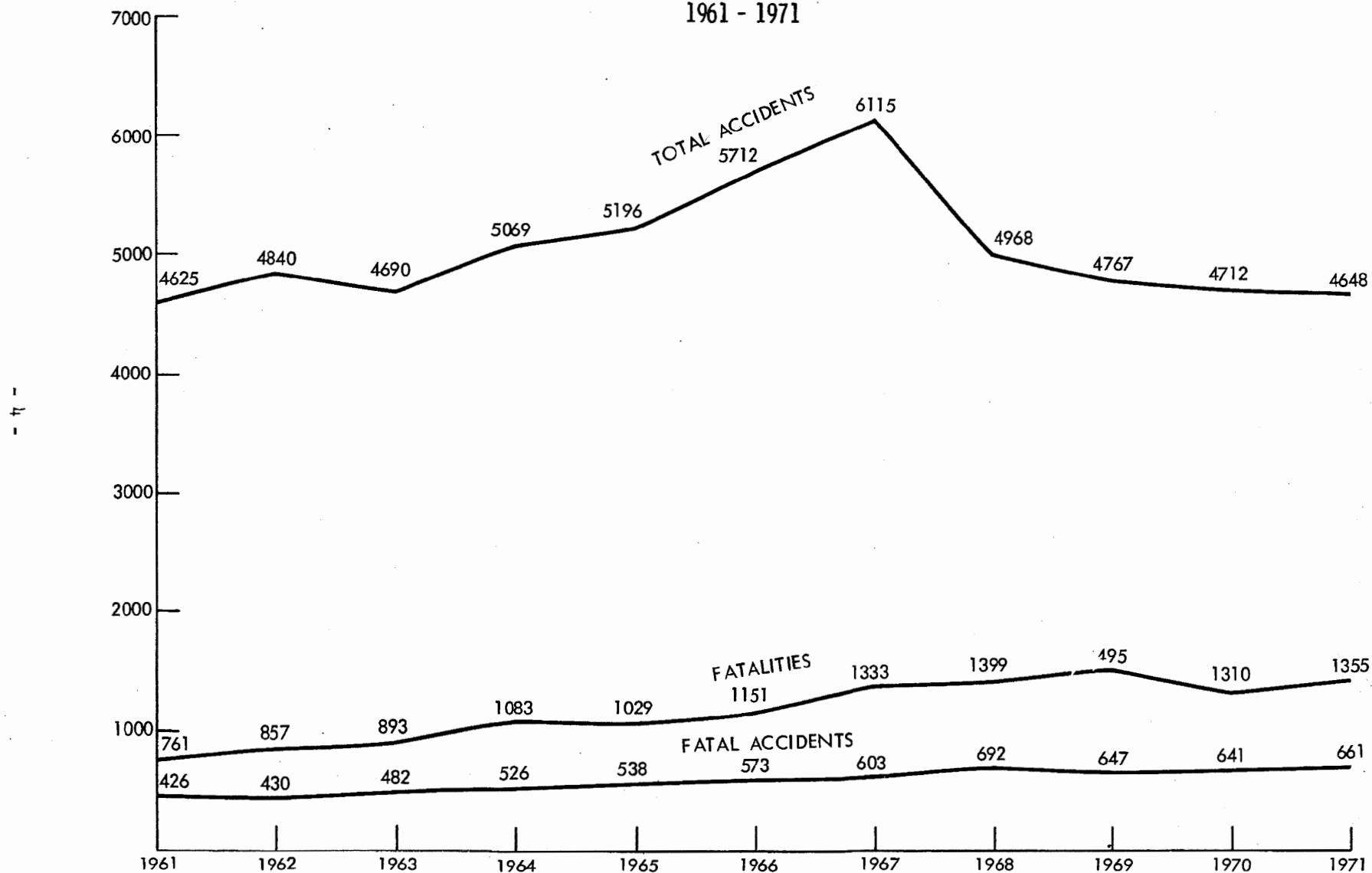
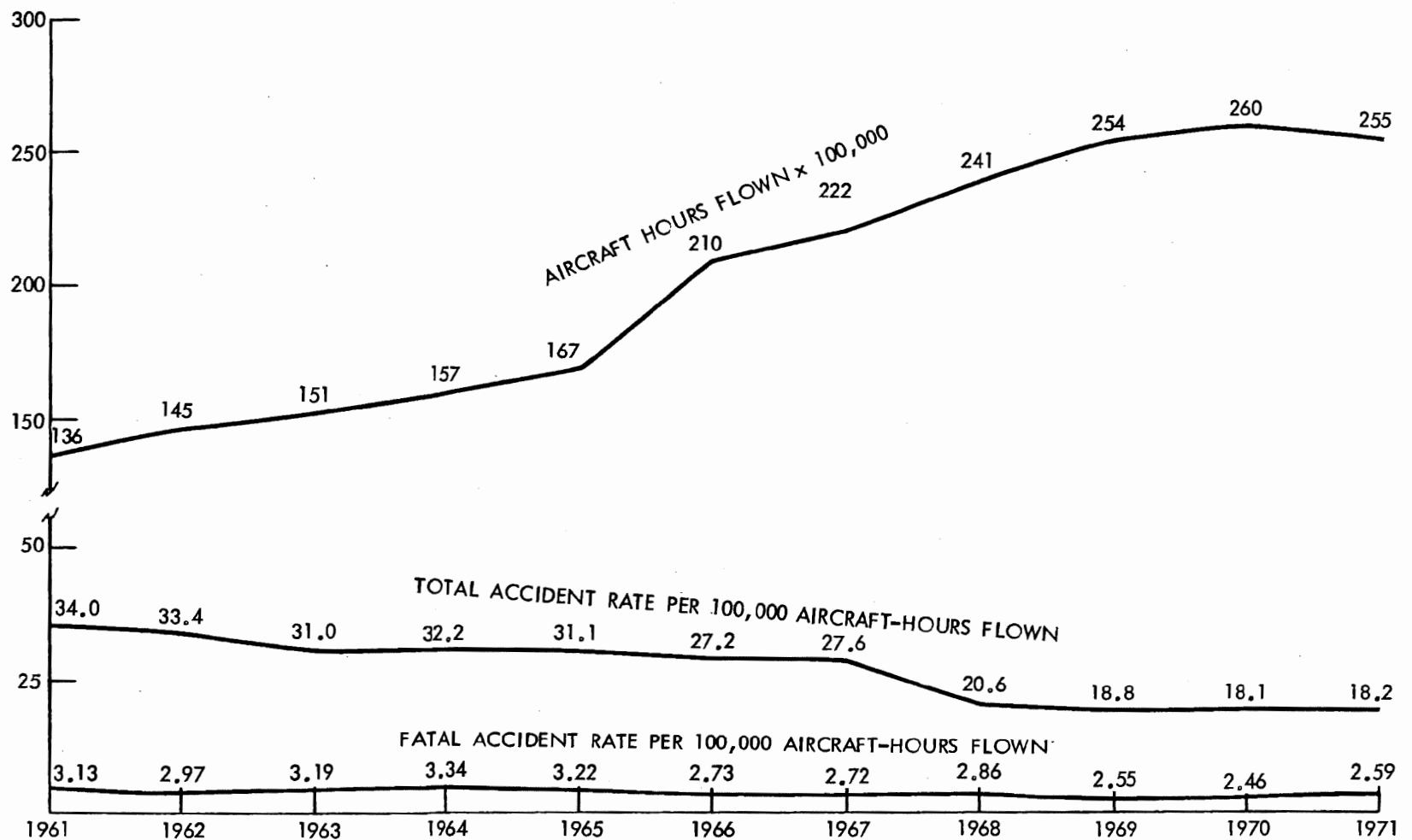


FIGURE 2

AIRCRAFT - HOURS FLOWN, RATES
U. S. GENERAL AVIATION
1961 - 1971



Type of Accident

The 10 types of accidents which occurred most frequently in 1971 are listed below in descending order of frequency:

Table 2 Ten Most Frequent First Types of Accidents
 In Descending Order

Total Accidents = 4,648

<u>First Type of Accident</u>	<u>Frequency</u>	<u>Percent of Total</u>
Engine failure or malfunction	1,034	22.25
Ground-water loop-swerve	632	13.60
Hard landing	359	7.72
Stall	261	5.61
Overshoot	225	4.84
Collision with ground/water, uncontrolled	201	4.32
Collision with ground/water, controlled	166	3.57
Collided with trees	156	3.36
Nose over/down	155	3.33
Undershoot	150	3.23

An analysis of the accident record of the types of certificate held by the pilots involved in the 10 most frequent accident types is summarized in Table 3. The qualitative ratings of Table 3 were derived from numerical values (Table 4) which were calculated using a single degree of freedom chi-square analysis. The formula for the numerical rating is:

$$X^2 = \frac{(F_o - F_e)^2}{F_e}$$

where F_o = the observed number of accident records for the given pilot certificate and given category of accident. F_e = the number of accident records that would have been expected if the percentage of accident records falling in the pilot certificate category in question had been the same as the percentage of the accident records of all pilot certificates that fell in the given accident type. When the result of the chi-square equation was > 3.84 but \leq or < 10.8 , a qualitative rating of low (L) or high (H) was recorded, depending on whether the sign of the difference between $F_o - F_e$ was negative or positive. When numerical rating was > 10.8 , a qualitative rating of very low (VL) or very high (VH) was given. When the numerical rating was \leq or $= 3.84$, a qualitative rating of average (a) was assigned. A rating of L or H means that the statistical difference between F_o and F_e would have a probability between 0.05 and 0.001 of occurring by chance alone if there really was no difference. A rating of VL or VH means that the difference would have a probability of less than 0.001 of occurring by chance.

Table 3

Analysis of Accident Records by
Accident Type and Pilot Certificate

	Pilot Certificate					
	Student	Private	Commercial	Airline Transport	Comm./Flight Instructor	Airline Transport/ Flight Instructor
First Type of Accident						
Engine failure or malfunction	VL	a	H	a	VH	a
Ground-water loop-swerve	VH	a	L	a	L	a
Hard landing	VH	a	VL	a	L	L
Stall	a	a	a	a	a	a
Overshoot	H	VH	VL	a	L	a
Collision with ground/water, uncontrolled	a	a	a	a	a	a
Collision with ground/water, controlled	VL	a	H	a	a	a
Collided with trees	a	a	a	a	a	a
Nose over /down	a	a	a	a	a	a
Undershoot	H	a	a	a	a	a

Table 4

Reported Accident Records by Accident Type
and Pilot Certificate
(Expected Values in Parenthesis)

First Type of Accident	Pilot Certificate						Total (All Pilot Certificates)
	Student	Private	Commercial	Airline Transport	Commercial With Flight Instructor	Airline Trans. With Flight Instructor	
Engine failure or malfunction	72 (130)	430 (462)	279 (235)	22 (26)	186 (145)	35 (26)	1,034
Ground-water loop-swerve	166 (79)	277 (282)	105 (144)	11 (16)	59 (88)	9 (16)	632
Hard landing	102 (45)	176 (160)	39 (82)	5 (9)	32 (50)	2 (9)	359
Stall	27 (33)	115 (117)	70 (59)	3 (7)	36 (37)	7 (7)	261
Overshoot	39 (28)	135 (100)	25 (51)	2 (6)	19 (31)	4 (6)	225
Collision with ground/ water, uncontrolled	29 (25)	104 (90)	39 (46)	1 (5)	21 (28)	2 (5)	201
Collision with ground/ water, controlled	4 (21)	71 (74)	55 (38)	3 (4)	25 (23)	5 (4)	166
Collided with trees	15 (20)	64 (70)	43 (35)	5 (4)	23 (22)	4 (4)	156
Nose over/down	16 (19)	80 (69)	29 (35)	4 (4)	24 (22)	2 (4)	155
Undershoot	30 (19)	64 (67)	28 (34)	2 (4)	21 (21)	3 (4)	150
Total (all accident types)	589	2,097	1,068	120	657	120	4,696

The eight pilot certificate - type of accident combinations which received a rating of H or VH were further examined for the specific causes or related factors of the accidents. The following is a summary of the most frequent cited causes/factors for each combination.

Student -- Ground-water Loop-swerve

Pilot - failed to maintain directional control
Weather - unfavorable wind conditions
Pilot - improper operation of brakes or flight controls
Miscellaneous acts, conditions - touch and go landing

Student -- Hard Landing

Pilot - improper level off
Weather - unfavorable wind conditions
Pilot - improper recovery from bounced landing

Student -- Overshoot

Pilot - misjudged distance and speed
Pilot - failed to initiate go-around

Student -- Undershoot

Pilot - misjudged distance and altitude
Pilot - attempted operation beyond experience/ability level
Terrain - high obstructions

Private -- Overshoot

Pilot - misjudged distance and speed
Pilot - failed to initiate go-around
Miscellaneous acts, conditions - downwind (takeoff or landing)
Pilot - delayed in initiating go-around
Pilot - selected wrong runway relative to existing wind

Commercial -- Engine Failure or Malfunction

Pilot - mismanagement of fuel
Miscellaneous acts, conditions - fuel exhaustion
Powerplant - powerplant failure for undetermined reasons
Pilot - inadequate preflight preparation or planning
Miscellaneous acts, conditions - material failure
Miscellaneous acts, conditions - fuel starvation

Commercial -- Collision with
Ground/Water, Controlled

Pilot - continued VFR flight into adverse weather conditions
Weather - low ceiling
Pilot - misjudged altitude
Pilot - misjudged clearance

Commercial with Flight Instructor --
Engine Failure or Malfunction

Miscellaneous acts, conditions - fuel exhaustion
Pilot - mismanagement of fuel
Powerplant - powerplant failure for undetermined reasons
Pilot - inadequate preflight preparation or planning
Pilot - improper operation of powerplant or powerplant controls

Accident Causes/Factors

In 1971, a causal determination was made in 647 fatal accidents and 3,928 nonfatal accidents.

The 10 most frequently cited causes or related factors of fatal accidents are given in Table 5. "Failed to obtain/maintain flying speed" was assigned as a cause/factor in 155 (23.96 percent) of the 647 fatal accidents. The same was true for "low ceiling." The majority of the 10 leading causal citations involved the weather or the pilot either by something he did or by something he failed to do; for example, "continued VFR flight into adverse weather conditions."

In Table 6, the 10 most frequently assigned causes/factors of the 3,928 nonfatal accidents are given. "Overload failure" leads the list with a frequency of 620 (15.78 percent) nonfatal accidents. Four of the 10 leading causes/factors in Table 6 were not pilot related, i.e., "overload failure," "high obstructions," "unfavorable wind conditions," and "rough/uneven terrain."

Table 5 Ten Most Frequently Cited Causes/Factors
of Fatal Accidents
All Operations

Fatal Accidents = 647

<u>10 Most Frequently Cited Causes/Factors</u>	<u>Frequency</u>	<u>Percentage of Fatal Accidents</u>
Pilot - failed to obtain/maintain flying speed	155	23.96
Weather - low ceiling	155	23.96
Pilot - continued VFR flight into adverse weather conditions	140	21.64
Pilot - spatial disorientation	109	16.85
Pilot - inadequate preflight preparation or planning	102	15.77
Weather - fog	98	15.15
Terrain - high obstructions	81	12.52
Weather - rain	70	10.82
Pilot - physical impairment	55	8.50
Miscellaneous acts, conditions - alcoholic impairment of efficiency and judgment	48	7.42

Table 6 Ten Most Frequently Cited Causes/Factors
 of Nonfatal Accidents
 All Operations

Nonfatal Accidents = 3,928

<u>10 Most Frequently Cited Causes/Factors</u>	<u>Frequency</u>	<u>Percentage of Nonfatal Accidents</u>
Miscellaneous acts, conditions - overload failure	620	15.78
Pilot - inadequate preflight preparation or planning	489	12.45
Pilot - failed to maintain directional control	392	9.98
Terrain - high obstructions	388	9.88
Pilot - failed to obtain/maintain flying speed	375	9.55
Pilot - improper level off	322	8.20
Weather - unfavorable wind conditions	317	8.07
Terrain - rough/uneven	280	7.13
Pilot - mismanagement of fuel	268	6.82
Pilot - misjudged distance and speed	230	5.86

Kinds of Flying

Kinds of flying include instructional, pleasure, business/corporate, aerial application, and air taxi. Total and fatal accident rates per 100,000 aircraft-hours flown are given in Tables 7 and 8, respectively, by kind of flying.

The total accident rates for 1968 through 71 cannot be compared with the rates from previous years because of a change in the Safety Board's definition of "substantial damage," which was incorporated January 1, 1968. However, the relative heights of the plotted lines (accident rates) for each kind of flying can be compared with each other. Pleasure flying consistently had the highest accident rate each year followed by aerial application and instructional flying. Business/corporate flying accident rates were always higher than air taxi rates except in 1970 and 1971. (Figure 3).

The fatal accident rates per 100,000 aircraft-hours flown are plotted in Figure 4. Fatal accident rates for pleasure flying are significantly higher than for the remaining kinds of flying. (The 0.05 level of significance was used which means that there is a probability of 0.05 that the difference is due to chance.) Aerial application fatal accident rates are significantly higher than business/corporate, air taxi, and instructional flying rates. There was no significant difference detected between the fatal accident rates for business/corporate and air taxi flying. The instructional flying fatal accident rates are significantly lower than for any kind of flying. Although instructional flying ranked third in total accident rates, it had the lowest fatal accident rates from 1964 through 1971.

Table 7

Kind of Flying
Total Accident Rates Per
100,000 Aircraft - Hours Flown

	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>
Instructional	21.20	20.59	15.71	22.65	15.16	12.24	15.11	11.11
Pleasure	58.14	52.96	40.63	38.75	30.93	29.56	30.53	33.51
Business/Corporate	16.52	16.72	15.45	19.38	13.18	9.92	6.90	6.88
Aerial Applications	38.03	30.62	31.12	35.82	28.63	27.31	23.88	28.00
Air Taxi	10.07	10.65	12.44	13.25	8.80	9.20	7.66	7.19

Table 8

Kind of Flying
Fatal Accident Rates Per
100,000 Aircraft - Hours Flown

	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>
Instructional	0.79	0.99	0.68	0.89	0.99	0.83	1.12	0.86
Pleasure	6.67	6.87	5.36	4.49	5.17	4.60	4.51	5.20
Business/Corporate	1.72	1.40	1.45	2.07	1.84	1.52	1.14	1.15
Aerial Applications	4.30	3.32	4.24	3.72	3.04	2.45	2.70	2.84
Air Taxi	1.39	1.39	1.43	1.87	2.25	1.30	1.53	1.55

FIGURE 3

KIND OF FLYING
TOTAL ACCIDENT RATES
PER 100,000 AIRCRAFT - HOURS FLOWN
1964 - 1971

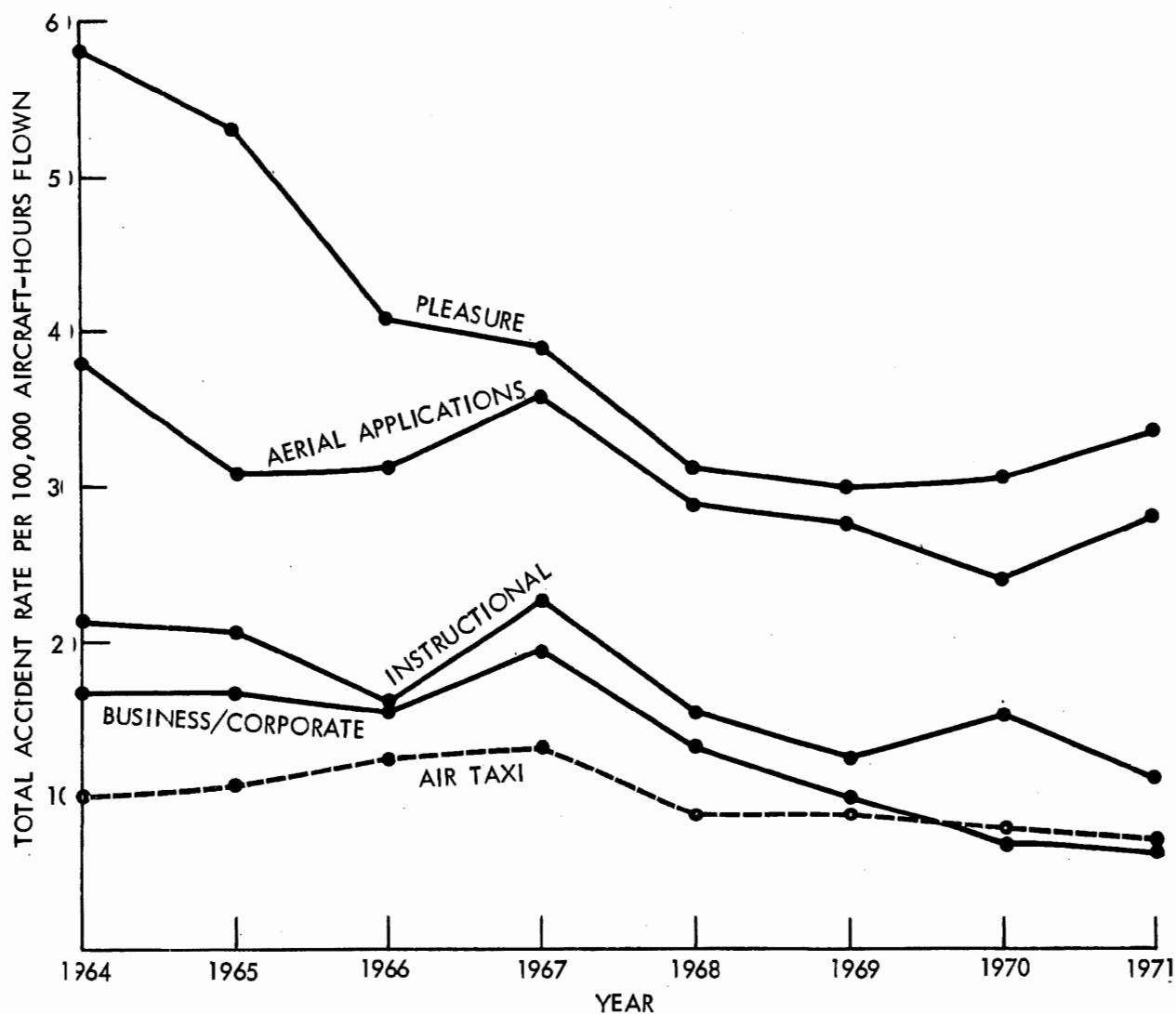
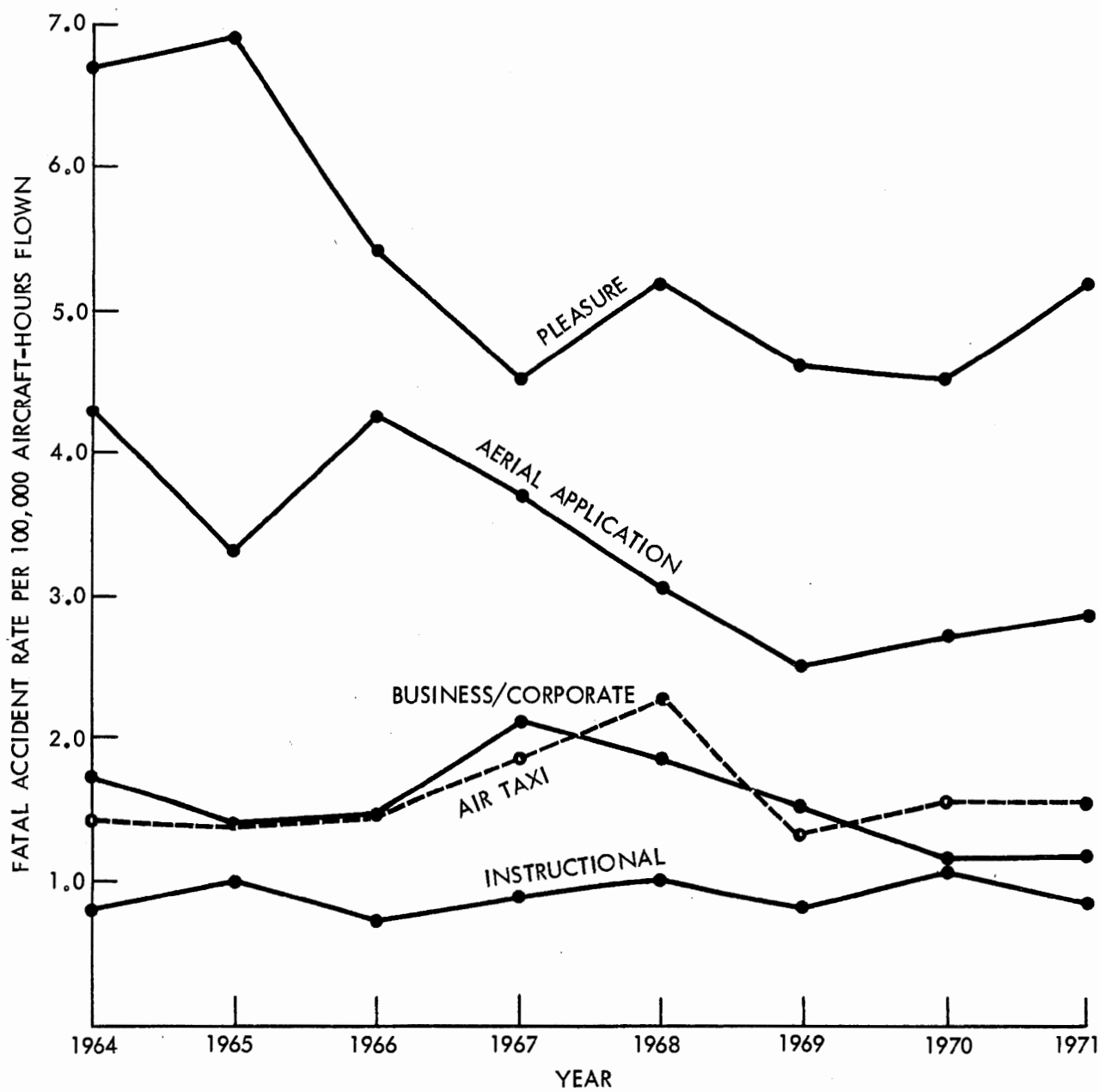


FIGURE 4

KIND OF FLYING
FATAL ACCIDENT RATES
PER 100,000 AIRCRAFT - HOURS FLOWN
1964 - 1971



STATISTICAL INFORMATION

-18a-

GENERAL AVIATION ACCIDENTS

ALL CATEGORIES OF AIRCRAFT

STATISTICAL RECAPITULATION OF ACCIDENTS
U. S. GENERAL AVIATION
ALL OPERATIONS

1970-1971

	<u>1970</u>	<u>1971</u>
<u>Total Accidents</u>	4,712	4,648
<u>Aircraft Involved</u> ^{a/}	4,775	4,699
<u>Injury Index</u>		
Fatal	641	661
Serious	388	409
Minor	644	640
None	3,039	2,938
<u>Injuries</u> ^{a/}		
Fatal	1,310	1,355
Serious	715	745
Minor	1,179	1,207
None	6,800	6,413
<u>Total Aboard</u> ^{a/}	9,935	9,505
<u>Aircraft Damage</u> ^{a/}		
Destroyed	1,034	1,060
Substantial	3,697	3,591
Minor/None	43	48
Not Reported	1	0
<u>File After Impact</u> ^{a/}		
Fatal Accidents	202	207
Nonfatal Accidents	142	125
<u>Active Aircraft (Est.)</u> ^{b/}	131,743	131,149
<u>Hours Flown (Est.)</u> ^{b/}	26,030,414	25,512,000
<u>Accident Rates Per 100,000 Hours Flown</u>		
Total	18.1	18.2
Fatal	2.5	2.6

a/ Includes all aircraft involved in collisions

b/ Source: FAA

ACCIDENTS, RATES, ACTIVE AIRCRAFT

ALL OPERATIONS

1971

	FIXED-WING			BALLOON/ BLIMP	ROTORCRAFT	
	Single Engine	Multi- Engine	Glider		Heli- copter	Gyro- copter
ACCIDENTS	3,876	475	55	1	218	27
AIRCRAFT INVOLVED ^{a/}	3,916	476	55	1	220	27
<u>INJURY INDEX</u>						
Fatal.....	521	105	10	0	21	5
Serious.....	336	37	9	1	23	2
Minor.....	559	38	5	0	36	3
None.....	2,460	295	31	0	138	17
ACTIVE AIRCRAFT (est) ^{b/}	109,257	17,855	1,607	78	2,352	
<u>AIRCRAFT DAMAGE^{a/}</u>						
Destroyed.....	832	147	11	0	59	9
Substantial.....	3,046	322	44	1	159	18
Minor/None.....	21	4	0	0	2	0
Unknown/Not Reported	17	3	0	0	0	0
HOURS FLOWN (est) ^{b/}	18,989,000	5,468,000	155,900	8,100	891,000	
<u>ACCIDENT RATES PER 100,000 HOURS FLOWN</u>						
Total.....	20.40	8.69	35.26	12.35	27.49	
Fatal.....	2.74	1.92	6.41	0	2.92	

^{b/} Source: FAA

ACCIDENTS, RATES, INJURY INDEX, AIRCRAFT DAMAGE

BY KIND OF FLYING:

All Operations^{a/}

1971

KIND OF FLYING

	NONCOMMERCIAL				Aerial Appli- cation	COMMERCIAL			
	Instruc- tional	Pleasure	Business	Corporate		AIR TAXI			
						SCHEDULED		NONSCHEDULED	
						Passg.	Cargo	Passg.	Cargo
<u>ACCIDENTS</u>	713	2,437	415	76	394	18	9	98	23
<u>HOURS FLOWN (Thousands of hrs.)^{b/}</u>	6,416	7,272	7,141		1,407	2,059			
<u>ACCIDENT RATES PER 100,000 HRS.</u>									
Total Accidents	11.11	33.51	6.88		28.00	7.19			
Fatal Accidents	.86	5.20	1.15		2.84	1.55			
<u>ACCIDENT INJURY INDEX</u>									
Fatal	55	378	74	8	40	2	2	22	6
Serious	49	216	28	7	42	4	1	9	1
Minor	88	342	48	8	49	2	1	13	2
None	521	1,501	265	53	263	10	5	54	14
Unknown/not reported	0	0	0	0	0	0	0	0	0
<u>AIRCRAFT DAMAGE</u>									
Destroyed	92	549	108	15	115	5	3	23	7
Substantial	618	1,873	306	59	276	14	6	74	15
Minor	5	13	1	1	1	0	0	1	1
None	1	12	0	1	4	0	0	0	0
Unknown/not reported	0	0	0	0	0	0	0	0	0
Total	716	2,447	415	76	396	19	9	98	23

^{b/} Source: FAA

ANALYTIC TABLE

TYPE OF ACCIDENT VS INJURY INDEX (ALL OPERATIONS)

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
GROUND-WATER LOOP-SWERVE	12	59	561		632	632
DRAINED WINGTIP POD OR FLOAT			5		5	5
WHEELS-UP LANDING		2	136		138	138
WHEELS-DOWN LANDING IN WATER			1		1	1
GEAR COLLAPSED	1	10	87		98	98
GEAR RETRACTED		3	68		71	71
HARD LANDING	2	13	24	320	359	359
NOSE OVER/DOWN	2	2	13	138	155	155
ROLL OVER			2	2	4	4
OVERSHOOT	5	13	29	178	225	225
UNDERSHOOT	9	19	20	102	150	150
COLLISION BETWEEN AIRCRAFT						
BOTH IN FLIGHT	36	7	4	12	59	31
ONE AIRBORNE		2	2	8	12	6
BOTH ON GROUND		2	8	17	27	14
COLLISION WITH GROUND/WATER						
CONTROLLED	78	20	18	50	166	166
UNCONTROLLED	141	18	15	27	201	201
COLLIDED WITH						
WIRES/POLES	31	33	26	57	147	147
TREES	61	26	35	34	156	156

ANALYTIC TABLE

TYPE OF ACCIDENT VS INJURY INDEX (ALL OPERATIONS)
(CONTINUED)

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
RESIDENCE/S	2			1	3	3
BUILDING/S	1	1		5	7	7
FENCE FENCEPOSTS	1		6	52	59	59
ELECTRONIC TOWERS	4	1		1	6	6
RUNWAY OR APPROACH LIGHTS			1	2	3	3
AIRPORT HAZARD				15	15	15
ANIMALS			2	6	8	8
CROP	1	2	1	12	16	16
FLAGMAN LOADER	2				2	2
DITCHES	1		8	26	35	35
SNOWBANK			1	24	25	25
PARKED AIRCRAFT			3	23	26	26
AUTOMOBILE	1	4	4	11	20	20
DIRT BANK		3	3	14	20	20
OBJEC	8	7	10	114	139	139
BIRD STRIKE						
STALL	72	59	46	84	261	261
SPIN	60	8	3	3	74	74
SPIRAL	5	5	2	2	14	14
MUSH	1	14	31	63	109	109
FIRE OR EXPLOSION						

ANALYTIC TABLE

TYPE OF ACCIDENT VS INJURY INDEX(ALL OPERATIONS)
(CONTINUED)

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
IN FLIGHT	5	2	2	10	19	19
ON GROUND			1	4	5	5
AIRFRAME FAILURE						
IN FLIGHT	36	4	7	9	56	56
ON GROUND			1	4	5	5
ENGINE TEARAWAY						
ENGINE FAILURE OR MALFUNCTION	74	115	229	616	1034	1034
PROPELLER/ROTOR FAILURE						
PROPELLER	1	2	3	18	24	24
TAIL ROTOR			4	1	5	5
MAIN ROTOR	2		1	1	4	4
PROP ROTOR ACNT TO PERSON	12	14			26	26
JET INTAKE/EXH ACNT TO PERS						
PROPELLER/JET/ROTOR BLAST			1	6	7	7
TURBULENCE	3	3	5	6	17	17
HAIL DAMAGE TO AIRCRAFT						
LIGHTNING STRIKE						
EVASIVE MANEUVER	1			1	2	2
UNCONTROLLED ALT DEVIATION						
DITCHING	1			2	3	3
MISSING ACFT NOT RECOVERED	11				11	11
MISCELLANEOUS/OTHER	5	2	1	16	24	24
UNDETERMINED	3	1		2	6	6

ANALYTIC TABLE

TYPE OF ACCIDENT VS AIRCRAFT DAMAGE (ALL OPERATIONS)

	<div>DESTROYED</div> <div>SUBSTANTIAL</div> <div>MINOR</div> <div>NONE</div>				RECORDS	ACCIDENTS
GROUND-WATER LOOP-SWERVE	19	613			632	632
DROGGED WINGTIP POD OR FLOAT		5			5	5
WHEELS-UP LANDING		138			138	138
WHEELS-DOWN LANDING IN WATER		1			1	1
GEAR COLLAPSED	3	95			98	98
GEAR RETRACTED	2	69			71	71
HARD LANDING	18	340	1		359	359
NOSE OVER/DOWN	2	152	1		155	155
ROLL OVER		4			4	4
OVERSHOOT	15	210			225	225
UNDERSHOOT	16	133	1		150	150
COLLISION BETWEEN AIRCRAFT						
BOTH IN FLIGHT	32	22	5		59	31
ONE AIRBORNE		12			12	6
BOTH ON GROUND		21	5	1	27	14
COLLISION WITH GROUND/WATER						
CONTROLLED	101	65			166	166
UNCONTROLLED	154	47			201	201
COLLIDED WITH						
WIRES/POLES	66	81			147	147
TREES	89	67			156	156

ANALYTIC TABLE

TYPE OF ACCIDENT VS AIRCRAFT DAMAGE (ALL OPERATIONS)
(CONTINUED)

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS
RESIDENCE/S	1	2			3	3
BUILDING/S	1	6			7	7
FENCE, FENCEPOSTS	4	55			59	59
ELECTRONIC TOWERS	6				6	6
RUNWAY OR APPROACH LIGHTS		3			3	3
AIRPORT HAZARD		15			15	15
ANIMALS		8			8	8
CROP	3	13			16	16
FLAGMAN LOADER				2	2	2
DITCHES		34	1		35	35
SNOWBANK		25			25	25
PARKED AIRCRAFT	1	25			26	26
AUTOMOBILE	2	17	1		20	20
DIRT BANK	1	19			20	20
OBJECT	9	128	1	1	139	139
BIRD STRIKE						
STALL	125	136			261	261
SPIN	67	7			74	74
SPIRAL	9	5			14	14
MUSH	24	85			109	109
FIKE OR EXPLOSION						
OTHER						

ANALYTIC TABLE

TYPE OF ACCIDENT VS AIRCRAFT DAMAGE(ALL OPERATIONS)
(CONTINUED)

	<div>DESTROYED</div> <div>SUBSTANTIAL</div> <div>MINOR</div> <div>NONE</div>				RECORDS	ACCIDENTS
IN FLIGHT	10	9			19	19
ON GROUND	2	3			5	5
AIRFRAME FAILURE						
IN FLIGHT	44	12			56	56
ON GROUND	1	4			5	5
ENGINE TEARAWAY						
ENGINE FAILURE OR MALFUNCTION	199	835			1034	1034
PROPELLER/ROTOR FAILURE						
PROPELLER	4	20			24	24
TAIL ROTOR	1	4			5	5
MAIN ROTOR	3	1			4	4
PROP ROTOR ACNT TO PERSON	1	1	8	16	26	26
JET INTAKE/EXH ACNT TO PERS						
PROPELLER/JET/ROTOR BLAST		7			7	7
TURBULENCE	3	12	2		17	17
HAIL DAMAGE TO AIRCRAFT						
LIGHTNING STRIKE						
EVASIVE MANEUVER	1	1			2	2
UNCONTROLLED ALT DEVIATION						
DITCHING	1	2			3	3
MISSING ACFT NOT RECOVERED	11				11	11
MISCELLANEOUS/OTHER	4	18	2		24	24
UNDETERMINED	3	3			6	6

FIRST ACCIDENT TYPE vs. SECOND ACCIDENT TYPE

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ANALYTIC TABLE

PHASE OF OPERATION VS INJURY INDEX (ALL OPERATIONS)

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
STATIC						
START NG ENGINE/S	2	4		4	10	10
IDLING ENGINE/S	5	8		7	20	20
ENGINE RUNUP		1		2	3	3
IDLING ROTORS	3	1	3	3	10	10
PARKED-ENGINES NOT OPERATING						
OTHER						
TAXI						
TO TAKEOFF	1	1	5	54	61	58
FROM LANDING	1	1	5	76	83	82
OTHER	1	2	4	25	32	32
GROUND TAXI TO TAKEOFF				1	1	1
GROUND TAXI FROM LANDING				2	2	2
GROUND TAXI, OTHER				1	1	1
AERIAL TAXI TO TAKEOFF				1	1	1
AERIAL TAXI TO/FROM LANDING				1	1	1
AERIAL TAXI, OTHER	1			1	2	2
TAKEOFF						
RUN	6	5	25	221	257	257
INITIAL CLIMB	59	70	114	282	525	525
VERTICAL			1	5	6	6

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ANALYTIC TABLE

PHASE OF OPERATION VS INJURY INDEX (ALL OPERATIONS)
(CONTINUED)

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
RUNNING	1	3	7		11	11
ABORTED	4	15	68		87	87
ABORTED						
ABORTED			3		3	3
OTHER	2	1	4		7	7
INFLIGHT						
CLIMB TO CRUISE	10	4	8	14	36	36
NORMAL CRUISE	113	57	106	282	558	556
DESCENDING	8	7	9	21	45	45
HOLDING						
HOVERING	2	3	1	9	15	15
POWER-ON DESCENT	1		1	1	3	3
AUTOROTATIVE DESCENT			1		1	1
ACROBATICS	28	2	2	6	38	38
BUZZING	9	3	3	4	19	19
UNCONTROLLED DESCENT	115	7	2	9	133	133
EMERGENCY DESCENT		1		1	2	2
LOW PASS	24	18	16	21	79	79
OTHER	134	34	23	47	238	236
EN ROUTE TO TREAT CROP	1	2	2	3	8	8
EN ROUTE TO RELOADING AREA	2			4	6	6

ANALYTIC TABLE

PHASE OF OPERATION VS INJURY INDEX (ALL OPERATIONS)
(CONTINUED)

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
SURVEY FIELD/AREA			1	2	3	3
STARTING SWATH RUN	3	3	4	20	30	30
SWATH RUN	10	7	10	51	78	78
FLARE OUT FOR SWATH RUN				2	2	2
PULL UP FROM SWATH RUN	3	8	5	12	28	28
PROCEDURE TURNAROUND	14	13	13	36	76	76
CLEAR UP SWATH	1		1	3	5	5
MANEUVER TO AVOID OBSTRUCTION			1		1	1
RETURN TO STRIP			1	10	11	11
LANDING				1	1	1
TRAFFIC PATTERN-CIRCLING	21	22	15	31	89	86
FINAL APPROACH	34	52	60	163	309	302
INITIAL APPROACH	5	1	4	3	13	13
FINAL APPROACH	12	8	4	4	28	28
LEVEL OFF/TOUCHDOWN	10	30	76	727	843	843
ROLL	4	11	60	598	673	671
ROLL ON/RUN-ON				2	2	2
POWER-ON LANDING	1	1	5	12	19	19
POWER-OFF AUTOMATIC LANDING			1	22	23	23
GO-AROUND	10	13	30	53	106	106
MISSED APPROACH	3		1		4	4
OTHER	2	6	6	10	24	24
UNKNOWN/NOT REPORTED	17	2		5	24	24

ANALYTIC TABLE

PHASE OF OPERATION VS AIRCRAFT DAMAGE(ALL OPERATIONS)

	<div>DESTROYED</div> <div>SUBSTANTIAL</div> <div>MINOR</div> <div>NONE</div>				RECORDS	ACCIDENTS
STATIC						
STARTING ENGINE/S	2	2	1	5	10	10
IDLING ENGINE/S		8	4	8	20	20
ENGINE RUNUP		2	1		3	3
IDLING ROTORS	2	6		2	10	10
PARKED-ENGINES NOT OPERATING						
OTHER						
TAXI						
TO TAKEOFF		59	2		61	58
FROM LANDING		80	2	1	83	82
OTHER	2	28	1	1	32	32
GROUND TAXI TO TAKEOFF		1			1	1
GROUND TAXI FROM LANDING		2			2	2
GROUND TAXI, OTHER		1			1	1
AERIAL TAXI TO TAKEOFF		1			1	1
AERIAL TAXI TO/FROM LANDING	1				1	1
AERIAL TAXI, OTHER	1	1			2	2
TAKEOFF						
RUN	14	243			257	257
INITIAL CLIMB	127	398			525	525
VERTICAL	1	5			6	6

ANALYTIC TABLE

PHASE OF OPERATION VS AIRCRAFT DAMAGE (ALL OPERATIONS)
(CONTINUED)

	<div>DESTROYED</div> <div>SUBSTANTIAL</div> <div>MINOR</div> <div>NONE</div>				RECORDS	ACCIDENTS
RUNNING	2	9			11	11
ARRIVED	3	83	1		87	87
ARRIVED						
ARRIVED	2	1			3	3
OTHER	3	4			7	7
INFLIGHT						
CLIMB TO CRUISE	19	17			36	36
NORMAL CRUISE	167	388	2	1	558	556
DESCENDING	12	33			45	45
HOLDING						
MOVING	3	12			15	15
POWER-ON DESCENT	2	1			3	3
AUTOMATIC DESCENT		1			1	1
ACROBATICS	32	6			38	38
RUZZING	13	6			19	19
UNCONTROLLED DESCENT	123	10			133	133
EMERGENCY DESCENT		2			2	2
LOW PASS	39	39		1	79	79
OTHER	158	80			238	236
ENROUTE TO TREAT CRDP	6	2			8	8
ENROUTE TO RELOADING AREA	4	2			6	6

ANALYTIC TABLE

PHASE OF OPERATION VS AIRCRAFT DAMAGE (ALL OPERATIONS)
(CONTINUED)

	<div>DESTROYED</div> <div>SUBSTANTIAL</div> <div>MINOR</div> <div>NONE</div>				RECORDS	ACCIDENTS
SURVEY FIELD/AREA	1	2			3	3
STARTING SWATH RUN	9	21			30	30
SWATH RUN	23	52	1	2	78	78
FLAREOUT FOR SWATH RUN		2			2	2
PULLUP FROM SWATH RUN	15	13			28	28
PROCEDURE TURNAROUND	34	42			76	76
CLEANUP SWATH	3	2			5	5
MANEUVER TO AVOID OBSTRUCTION	1				1	1
RETURN TO STRIP		11			11	11
LANDING		1			1	1
TRAFFIC PATTERN-CIRCLING	35	54			89	86
FINAL APPROACH	61	243	5		309	302
INITIAL APPROACH	12	1			13	13
FINAL APPROACH	21	7			28	28
LEVEL OFF/TOUCHDOWN	37	801	4	1	843	843
ROLL	12	660	1		673	671
ROLL-ON/RUN-ON		2			2	2
POWER-ON LANDING	2	17			19	19
POWER-OFF AUTOROTATIVE LOG	2	21			23	23
GO-AROUND	25	80	1		106	106
MISSED APPROACH	4				4	4
OTHER	7	17			24	24
UNKNOWN/NOT REPORTED	16	8			24	24

CAUSE/FACTOR TABLE
U.S. GENERAL AVIATION-(ALL OPERATIONS)-1971

INVOLVES 647 FATAL ACCIDENTS

BROAD CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
PILOT	571 88.25	117 18.08	575 88.87	3225 82.10	208 5.30	3242 82.54	3796 82.97	325 7.10	3817 83.43
PERSONNEL	59 9.12	21 3.25	77 11.90	273 6.95	62 1.58	328 8.35	332 7.26	83 1.81	405 8.85
AIRFRAME	18 2.78	3 .46	21 3.25	26 .66	6 .15	32 .81	44 .96	9 .20	53 1.16
LANDING GEAR	1 .15	1 .15	2 .31	172 4.38	50 1.27	220 5.60	173 3.78	51 1.11	222 4.85
POWERPLANT	40 6.18	6 .93	45 6.96	502 12.78	27 .69	529 13.47	542 11.85	33 .72	574 12.55
SYSTEMS	3 .46	3 .46	6 .93	29 .74	10 .25	39 .99	32 .70	13 .28	45 .98
INSTRUMENTS/EQUIPMENT AND ACCESSORIES	1 .15	3 .46	4 .62	5 .13	9 .23	14 .36	6 .13	12 .26	18 .39
ROTORCRAFT	3 .46	.00	3 .46	19 .48	3 .08	22 .56	22 .48	3 .07	25 .55
AIRPORTS/AIRWAYS/FACILITIES	.00	5 .77	5 .77	150 3.82	255 6.49	395 10.06	150 3.28	260 5.68	400 8.74
WEATHER	32 4.95	221 34.16	247 38.18	306 7.79	419 10.67	703 17.90	338 7.39	640 13.99	950 20.77
TERRAIN	35 5.41	71 10.97	106 16.38	638 16.24	423 10.77	1053 26.81	673 14.71	494 10.80	1159 25.33
MISCELLANEOUS	10 1.55	1 .15	11 1.70	152 3.87	22 .56	173 4.40	162 3.54	23 .50	184 4.02
UNDETERMINED	28 4.33	.00	28 4.33	28 .71	.00	28 .71	56 1.22	.00	56 1.22

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

U.S. GENERAL AVIATION-(ALL OPERATIONS)-1971

INVOLVES 4575 TOTAL ACCIDENTS
INVOLVES 467 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	14	4	18	30	6	36	44	10	54
ATTEMPTED OPERATION BEYOND EXPERIENCE/ABILITY LEVEL	29	2	31	51	4	55	40	6	46
BECAME LOST/DISORIENTED	5	4	9	43	12	55	48	16	64
CONTINUED VFR FLIGHT INTO ADVERSE WEATHER CONDITIONS	139	1	140	75		75	214	1	215
CONTINUED INTO KNOWN AREA OF SEVERE TURBULANCE	3		3	1		1	4		4
DELAYED ACTION IN ABORTING TAKEOFF				47		47	47		47
DELAYED IN INITIATING GO-AROUND	5	1	6	54	3	57	59	4	63
DIVERTED ATTENTION FROM OPERATION OF AIRCRAFT	5	9	14	74	16	90	79	25	104
EXCEEDED DESIGN STRESS LIMITS OF AIRCRAFT	18		18	3		3	21		21
FAILED TO EXTEND LANDING GEAR				61	1	62	61	1	62
RETRACTED GEAR PREMATURELY				9		9	9		9
INADVERTENTLY RETRACTED GEAR				19	1	20	19	1	20
FAILED TO SEE AND AVOID OTHER AIRCRAFT	23		23	35	1	36	58	1	59
FAILED TO SEE AND AVOID OBJECTS OR OBSTRUCTIONS	26		26	135		135	161		161
FAILED TO OBTAIN/MAINTAIN FLYING SPEED	155		155	375		375	530		530
MISJUDGED, SPEED, ALTITUDE OR CLEARANCE				1		1	1		1
FAILED TO MAINTAIN ADEQUATE ROTOR RPM	1		1	34	1	35	35	1	36
FAILED TO USE OR INCORRECTLY USED MISC EQUIPMENT				8	2	10	9	2	11
FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES ETC	14	6	20	79	14	93	93	20	113
IMPROPER OPERATION OF POWERPLANT + POWERPLANT CONTROLS	5	3	8	139	2	141	144	5	149
IMPROPER OPERATION OF BRAKES AND/OR FLIGHT CONTROLS	1		1	92		92	93		93
IMPROPER OPERATION OF FLIGHT CONTROLS	21	1	22	47	2	49	68	3	71
PREMATURE LIFT OFF	1		1	66		66	67		67
IMPROPER LEVEL OFF	2		2	321	1	322	323	1	324
IMPROPER IFR OPERATION	16		16	11	1	12	27	1	28
IMPROPER IN-FLIGHT DECISIONS OR PLANNING	30	2	32	52	6	58	82	8	90
IMPROPER COMPENSATION FOR WIND CONDITIONS				80	4	84	80	4	84
INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING	55	47	102	458	31	489	513	78	591
INADEQUATE SUPERVISION OF FLIGHT	10	1	11	110	1	111	120	2	122
LACK OF FAMILIARITY WITH AIRCRAFT	7	17	24	39	52	91	46	69	115
MISMANAGEMENT OF FUEL	22		22	266	2	268	288	2	290
EXERCISED POOR JUDGMENT	32	6	38	182	5	187	214	11	225
OPERATED CARELESSLY	1		1	4		4	5		5
SELECTED UNSUITABLE TERRAIN	4		4	275	4	279	279	4	283
IMPROPER STARTING PROCEDURES				7		7	7		7
STARTED ENGINE WITHOUT PROPER ASSISTANCE/EQUIPMENT	2		2	20		20	22		22
TAXIED/PARKED WITHOUT PROPER ASSISTANCE				13	2	15	13	2	15
FAILED TO ASSURE THE GEAR WAS DOWN AND LOCKED				52		52	52		52
INITIATED FLIGHT IN ADVERSE WEATHER CONDITIONS	18		18	12		12	30		30
SPONTANEOUS-IMPROPER ACTION	2		2	25		25	27		27
MISJUDGED DISTANCE, SPEED, AND ALTITUDE	1		1	20		20	21		21
MISJUDGED DISTANCE AND SPEED	6		6	226	4	230	232	4	236
MISJUDGED DISTANCE				6		6	6		6
MISJUDGED DISTANCE AND ALTITUDE	11		11	109	2	111	120	2	122
MISJUDGED SPEED AND ALTITUDE	1		1	59		59	60		60
MISJUDGED SPEED	1		1	19	4	23	20	4	24
MISJUDGED SPEED AND CLEARANCE	2		2	7		7	9		9
MISJUDGED ALTITUDE AND CLEARANCE	4		4	14		14	18		18
MISJUDGED ALTITUDE	21	1	22	23	1	24	44	2	46
MISJUDGED CLEARANCE	21		21	97		97	118		118
INADEQUATE TRAINING OF STUDENT				2		2	2		2
MISUNDERSTANDING OF ORDERS OR INSTRUCTIONS				3	2	5	3	2	5
IMPROPER RECOVERY FROM BOUNCED LANDING	1		1	192		192	193		193
INCAPACITATION	10		10				10		10
PHYSICAL IMPAIRMENT	34	21	55	5	2	7	39	23	62
SPATIAL DISORIENTATION	108	1	109	19		19	127	1	128
PSYCHOLOGICAL CONDITION	1	2	3	2	1	3	3	3	6
MISUSED OR FAILED TO USE FLAPS	2	1	3	38	17	55	40	18	58
FAILED TO MAINTAIN DIRECTIONAL CONTROL				391	1	392	391	1	392
SELECTED WRONG RUNWAY RELATIVE TO EXISTING WIND	2	1	3	39	2	41	41	3	44
FAILED TO ABORT TAKEOFF	1		1	47	1	48	48	1	49
FAILED TO INITIATE GO-AROUND	2		2	89	12	101	91	12	103
DIRECT ENTRIES				2		2	2		2

CAUSE/FACTOR TABLE

PILOT IN COMMAND (CONTINUED)

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
1980 TOTAL	896	131	1027	4764	223	4987	5660	354	6014
COPILOT									
FAILED TO EXTEND LANDING GEAR				1		1	1		1
FAILED TO OBTAIN/MAINTAIN FLYING SPEED				1		1	1		1
FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES, ETC	1		1	2		2	3		3
CONTROL INTERFERENCE				1		1	1		1
MISJUDGED DISTANCE AND ALTITUDE				1		1	1		1
MISJUDGED ALTITUDE			1				1		1
PHYSICAL IMPAIRMENT		1	1					1	1
FAILED TO MAINTAIN DIRECTIONAL CONTROL				4		4	4		4
1980 TOTAL	2	1	3	10		10	12	1	13
DUAL STUDENT									
CONTINUED VFR FLIGHT INTO ADVERSE WEATHER CONDITIONS	1		1				1		1
DELAYED IN INITIATING GO-AROUND				2		2	2		2
INADEQUATELY RETRACTED GEAR				3		3	3		3
FAILED TO SEE OTHER AIRCRAFT				1		1	1		1
FAILED TO SEE AND AVOID OBJECTS OR OBSTRUCTIONS	1		1				1		1
FAILED TO OBTAIN/MAINTAIN FLYING SPEED			4	12		12	16		16
MISJUDGED DISTANCE, SPEED, ALTITUDE OR CLEARANCE	1		1				1		1
FAILED TO MAINTAIN ADEQUATE ROTOR RPM				2		2	2		2
FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES, ETC	1		1	1		1	2		2
IMPROPER OPERATION OF POWERPLANT + POWERPLANT CONTROLS				7		7	7		7
IMPROPER OPERATION OF BRAKES AND/OR FLIGHT CONTROLS				9		9	9		9
IMPROPER OPERATION OF FLIGHT CONTROLS	2		2	6		6	8		8
PREMATURE LIFT-OFF				2		2	2		2
IMPROPER LEVEL OFF				13		13	13		13
IMPROPER IN-FLIGHT DECISIONS OR PLANNING				2		2	2		2
IMPROPER COMPENSATION FOR WIND CONDITIONS				3		3	3		3
INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING				4		4	4		4
LACK OF FAMILIARITY WITH AIRCRAFT					1	1		1	1
MISMANAGEMENT OF FUEL				7		7	7		7
FAILED TO ASSURE THE GEAR WAS DOWN AND LOCKED				2		2	2		2
FAILURE TO RELINQUISH CONTROL				2		2	2		2
CONTROL INTERFERENCE					1	1		1	1
SPONTANEOUS-IMPROPER ACTION	1		1				1		1
MISJUDGED DISTANCE AND SPEED				1		1	1		1
MISJUDGED DISTANCE AND ALTITUDE				7		7	7		7
MISJUDGED SPEED AND ALTITUDE				8		8	8		8
MISJUDGED CLEARANCE	1		1				1		1
MISUNDERSTANDING OF ORDERS OR INSTRUCTIONS				2		2	2		2
IMPROPER RECOVERY FROM BOUNCED LANDING				5		5	5		5
INCAPACITATION				1		1	1		1
MISUSED OR FAILED TO USE FLAPS				1		1	1		1
FAILED TO MAINTAIN DIRECTIONAL CONTROL				18		18	18		18
SELECTED WRONG RUNWAY RELATIVE TO EXISTING WIND	1		1				1		1
FAILED TO INITIATE GO-AROUND				1		1	1		1
1980 TOTAL	13		13	122	2	124	135	2	137
CHECK PILOT									
ATTEMPTED OPERATION BEYOND EXPERIENCE/ABILITY LEVEL					1	1		1	1
FAILED TO SEE OTHER AIRCRAFT	1		1				1		1
INADEQUATE SUPERVISION OF FLIGHT				1		1	1		1
1980 TOTAL	1		1	1	1	2	2	1	3
** PERSONNEL **									
FLIGHT INSTRUCTOR									
INADEQUATE SUPERVISION OF FLIGHT	2	2	4	17	9	26	19	11	30
INADEQUATE TRAINING OF STUDENT	1		1	10	4	14	11	4	15
MAINTENANCE, SERVICING, INSPECTION									
IMPROPER MAINTENANCE (MAINTENANCE PERSONNEL)	2	1	3	17		17	19	1	20
IMPROPER MAINTENANCE (OWNER PERSONNEL)				2		2	2		2
IMPROPERLY SERVICED AIRCRAFT (GROUND CREW)	1		1	4	2	6	5	2	7
IMPROPERLY SERVICED AIRCRAFT (OWNER-PILOT)				2		2	2		2
INADEQUATE INSPECTION OF AIRCRAFT (MAINTENANCE PERSONNEL)				1		1	1		1

CAUSE/FACTOR TABLE

PERSONNEL (CONTINUED)

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
INADEQUATE INSPECTION OF ACFT(OWNER-PILOT PERSONNEL)				3		3	3		3
INADEQUATE MAINTENANCE AND INSPECTION	14	1	15	117	17	134	131	18	149
OTHER				4	2	6	4	2	6
OPERATIONAL SUPERVISORY PERSONNEL									
INADEQUATE FLIGHT TRAINING-PROCEDURES		1	1					1	1
INADEQUATE SUPERVISION OF FLIGHT CREW		2	2	1	1	2	1	3	4
INADEQUATE SUPERVISION/TRAINING OF RAMP CREWS	1	1	2				1	1	2
FAILURE TO PROVIDE ADEQ DIRECTIVES, MANUALS, EQUIPMENT				1		1	1		1
DEFICIENCY, COMPANY MAINTAINED EQMT, SERV, REGULATIONS	1		1	2	1	3	3	1	4
WEATHER PERSONNEL									
INCORRECT WEATHER FORECAST		4	4		2	2		6	6
INADEQUATE/INCORRECT WEATHER BRIEFING	1		1				1		1
TRAFFIC CONTROL PERSONNEL									
FAILURE OR DELAY IN INITIATING EMERGENCY PROCEDURES					2	2		2	2
FAILURE TO ADVISE OF UNSAF AIRPORT CONDITION					2	2		2	2
ISSUED IMPROPER OR CONFLICTING INSTRUCTIONS				1	1	2	1	1	2
OTHER	2	3	5	1	1	2	3	4	7
AIRPORT SUPERVISORY PERSONNEL									
IMPROPER MAINTENANCE-AIRPORT FACILITIES				3	1	4	3	1	4
FAILURE TO NOTIFY OF UNSAF CONDITION				7	3	10	7	3	10
IMPROPER/INADEQUATE SNOW REMOVAL				3		3	3		3
IMPROPER OPERATION OF FACILITIES				1		1	1		1
OTHER				1	2	3	1	2	3
AIRWAYS FACILITIES PERSONNEL									
PRODUCTION-DESIGN-PERSONNEL									
SUBSTANDARD QUALITY CONTROL	1		1	1	1	2	2	1	3
INCORRECT FACTORY INSTALLATION				1		1	1		1
POOR/INADEQUATE DESIGN	1	1	2	6	1	7	7	2	9
OTHER	4		4	6		6	10		10
MISCELLANEOUS-PERSONNEL									
PILOT OF OTHER AIRCRAFT	24	2	26	45	4	49	69	6	75
GROUND SIGNALMAN				1	1	2	1	1	2
SPECTATOR				2	1	3	2	1	3
GROUND CREWMAN	2		2				2		2
PASSENGER	8	1	9	14	5	19	22	6	28
DRIVER OF VEHICLE	2	1	3	7	3	10	9	4	13
OTHER	3	1	4	6	1	7	9	2	11
THIRD PILOT									
FLIGHT ENGINEER									
DISPATCHING									
SUBTOTAL	70	21	91	287	67	354	357	88	445
** AIRFRAME **									
WINGS									
SPARS	3		3				3		3
RIBS, STRINGERS, CAP STRIPS	2		2	1		1	3		3
WING ATTACHMENT FITTINGS, BOLTS	2		2	1		1	3		3
BRACING WIRES, STRUTS	2		2	1		1	3		3
SKIN AND ATTACHMENTS	2		2	3		3	5		5
WINGTIPS	1		1				1		1
OTHER	1		1	1		1	2		2
FUSELAGE									
BULKHEADS				1		1	1		1
SKIN AND ATTACHMENTS				1		1	1		1
DOORS, DOOR FRAMES				2	3	5	7	3	5
WINDSHIELDS, WINDOWS, CANOPIES		1	1					1	1
SEATS				5	1	6	5	1	6
OTHER	1	1	2	3		3	4	1	5
LANDING GEAR									
MAIN GEAR-SHOCK ABSORBING ASSY, STRUTS, ATTACHMENTS, ETC				28		28	28		28
NORMAL RETRACTION/EXTENSION ASSEMBLY		1	1	43	7	50	43	8	51
EMERGENCY/EXTENSION ASSEMBLY				10		10	10		10
TAILWHEEL ASSEMBLIES	1		1	6	4	10	7	4	11
NOSEWHEEL ASSEMBLIES				23	1	24	23	1	24
WHEELS, TIRES, AXLES				29	4	33	29	4	33
SKI ASSEMBLIES				1		1	1		1
BRAKING SYSTEM (NORMAL)				30	16	46	30	16	46
BRAKING SYSTEM (EMERGENCY)				1		1	1		1
LANDING GEAR WARNING AND INDICATING COMPONENTS					16	16		16	16
GEAR LOCKING MECHANISM				7		7	7		7

CAUSE/FACTOR TABLE

AIRFRAME (CONTINUED)

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
SWITCHES, LEVERS, CRANKING MECHANISM, ETC				2	2	4	2	2	4
NOSE WHEEL STEERING				5	1	6	5	1	6
OTHE				1	1	2	1	1	2
FLIGHT CONTROL SURFACES									
ELEVATOR, ASSEMBLY ATTACHMENTS	2		2	1		1	3		3
RUDDER, SURFACE ATTACHMENTS	1	1	2	3		3	4	1	5
AILERON, SURFACE ATTACHMENTS				2		2	2		2
HORIZONTAL STABILIZER, ATTACHMENTS	1	1	2	1		1	2	1	3
VERTICAL STABILIZER, ATTACHMENTS	2	1	3	2		2	4	1	5
FLAP ASSEMBLIES				2	1	3	2	1	3
OTHE	2		2		1	1	2	1	3
SUBTOTAL	23	6	29	216	58	274	239	64	303
** PROPPELLANT **									
ENGINE STRUCTURE									
CRANKCASE				2		2	2		2
CRANKSHAFT	1		1	18		18	19		19
MASTERS AND CONNECTING RODS	2		2	39		39	41		41
CYLINDER ASSEMBLY	2	1	3	17		17	19	1	20
PISTON, PISTON RINGS	1		1	12		12	13		13
VALVE ASSEMBLIES	2	1	3	21		21	23	1	24
FLOWER, IMPELLER ASSEMBLY				5		5	6		6
OTHE	3		3	7		7	10		10
IGNITION SYSTEM									
MAGNETOES	2		2	7		7	9		9
DISTRIBUTOR				1		1	1		1
SPARK PLUG	2		2	7		7	9		9
SWITCHES				1		1	1		1
LEAD				3		3	3		3
FUEL SYSTEM									
TANK		1	1	1		1	1	1	2
LINE AND FITTINGS	1		1	10		10	11		11
SELECTOR VALVES		1	1	1	1	2	1	2	3
CROSS FEED VALVES					1	1		1	1
FILTERS, STRAINERS, SCREENS				5	1	6	5	1	6
PRIMING SYSTEM				1	1	2	1	1	2
CARBURETOR				23	1	24	23	1	24
PUMP	2		2	7		7	9		9
FUEL INJECTION SYSTEM				4		4	4		4
VENT, DRAINS, TANK CAPS				8	2	10	8	2	10
RAMJET ASSEMBLY				6		6	6		6
OTHE	1		1	9		9	10		10
LUBRICATING SYSTEM									
TANK				1		1	1		1
LINE, HOSES, FITTINGS				14		14	14		14
FILTERS, SCREENS		1	1	3		3	3	1	4
PUMP PRESSURE				3		3	3		3
OIL COOLERS				2		2	2		2
SEAL AND GASKETS				2		2	2		2
REGULATORS				1		1	1		1
OTHE	2		2	8		8	10		10
COOLING SYSTEM									
PROPELLER AND ACCESSORIES									
BLADES	1		1	11		11	12		12
HUBS				1		1	1		1
HYDRAULIC PITCH CONTROL MECHANISM				2		2	2		2
COUNTERWEIGHT				1		1	1		1
SPINNERS, DOMES				3		3	3		3
GOVERNORS				1		1	1		1
BLADE RETENTION MECHANISM				2		2	2		2
OTHE				5		5	5		5
EXHAUST SYSTEM									
MANIFOLDS	1		1				1		1
MUFFERS				2		2	2		2
STACKS				2	1	3	2	1	3
RAFFLES				1		1	1		1
EXTERNAL SUPERCHARGER				1		1	1		1
OTHE				3		3	3		3
ENGINE ACCESSORIES									
VACUUM PUMPS		1	1	1		1	1	1	2

CAUSE/FACTOR TABLE

POWERPLANT (CONTINUED)

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
STARTERS					1	1		1	1
ENGINE CONTROLS-COCKPIT									
THROTTLE-POWER LEVER ASSEMBLIES				12	2	14	12	2	14
MIXTURE CONTROL ASSEMBLIES				7	1	8	7	1	8
INDUCTION AIR, PREHEAT CONTROLS				1	1	1	1	1	1
PROPELLER GOVERNOR CONTROLS				1	1	1	1	1	1
POWERPLANT-INSTRUMENTS									
FUEL QUANTITY GAUGE					14	14		14	14
OTHER					1	1		1	1
MISCELLANEOUS									
POWERPLANT FAILURE FOR UNDETERMINED REASONS	18		18	208		208	226		226
COMPRESSOR STALLS				1	1	1	1	1	1
OTHER				4	4	4	4	4	4
DIRECT ENTRIES				1	1	1	1	1	1
REDUCTION GEAR ASSEMBLY									
SHAFT, ACCESSORY DRIVE				1	1	1	1	1	1
GEARS, ACCESSORY DRIVE				2	2	2	2	2	2
OTHER				1	1	1	1	1	1
COMPRESSOR ASSEMBLY									
COMBUSTION ASSEMBLY									
TURBINE ASSEMBLY									
VANES, GUIDE				1	1	1	1	1	1
WHEEL, TURBINE				1	1	1	1	1	1
BLADE, TURBINE WHEEL				1	1	1	1	1	1
ACCESSORY DRIVE ASSEMBLY									
LUBRICATING SYSTEM									
TURBINE				1	1	1	1	1	1
FUEL SYSTEM									
SAFETY SYSTEM									
IGNITION SYSTEM									
TORQUEMETER									
AIR BLEED									
EXHAUST SYSTEM									
THRUST REVERSE									
PROPELLER SYSTEM									
CONSTANT SPEED DRIVE									
POWER LEVER									
PROPELLER LEVER									
REVERSE THRUST LEVER									
ENGINE INDICATING EQUIPMENT									
ENGINE INSTALLATION									
SUBTOTAL	41	6	47	528	27	555	569	33	602
** SYSTEMS **									
ELECTRICAL SYSTEM									
BATTERIES				5	2	7	5	2	7
GENERATORS/ALTERNATORS				3	3	6	3	3	6
REGULATOR				3	3	3	3	3	3
RELAYS AND WIRING				1	1	1	1	1	1
MOTORS				2	2	4	2	2	4
SWITCHES				1	1	1	1	1	1
PROTECTIVE DEVICES				1	3	3	1	3	3
OTHER				2	1	3	2	1	3
HYDRAULIC SYSTEM									
RESERVOIR, LINES, FITTINGS				2		2	2		2
SEALS				1		1	1		1
OTHER		1	1	1		1	1	1	2
FLIGHT CONTROL SYSTEMS									
AILERON AND AILERON TAB CONTROL SYSTEM				2		2	2		2
ELEVATOR AND ELEVATOR TAB CONTROL SYSTEM				2		2	2		2
RUDDER AND RUDDER TAB CONTROL SYSTEM	1		1	1		1	2		2
WING FLAP CONTROL SYSTEM (ELECTRICAL)				1		1	1		1
FLIGHT CONTROL GUST LOCK SYSTEM		1	1					1	1
OTHER	1		1	1	1	2	2	1	3
ANTI-ICING, DE-ICING SYSTEMS									
CARAUETOR DE-ICING SYSTEM				1		1	1		1
AIR CONDITION, HEATING AND PRESSURIZATION									
OTHER	1		1		1	1	1	1	2
AUTO PILOT									
FIRE WARNING SYSTEM									

CAUSE/FACTOR TABLE

SYSTEMS (CONTINUED)

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
FIRE EXTINGUISHER SYSTEM									
OXYGEN SYSTEM									
OTHER SYSTEMS		1	1	2		2	2	1	3
SUBTOTAL	3	3	6	31	13	44	34	16	50
** INSTRUMENTS/EQUIPMENT AND ACCESSORIES **									
FLIGHT AND NAVIGATION INSTRUMENTS									
ALTITUDE METERS					1	1		1	1
AIR SPEED				1	2	3	1	2	3
ATTITUDE GYRO		2	2		1	1		3	3
DIRECTIONAL GYRO					2	2		2	2
OTHER					1	1		1	1
COMMUNICATIONS AND NAVIGATION EQUIPMENT									
VOR RECEIVERS					1	1		1	1
MISCELLANEOUS EQUIPMENT									
SPRING DUSTING EQUIPMENT		1	1	3	2	5	3	3	6
PICK-UP EQUIPMENT	1		1				1		1
GLIDER LAUNCH/TOW EQUIPMENT				1		1	1		1
SUBTOTAL	1	3	4	5	10	15	6	13	19
** ROTORCRAFT **									
ROTOR ASSEMBLIES									
MAIN ROTOR BLADES	1		1	1		1	2		2
TAIL ROTOR BLADES				4	2	6	4	2	6
OTHER				1		1	1		1
TRANSMISSION ROTOR DRIVE SYSTEM									
MAIN ROTOR GEAR BOX	1		1				1		1
MAIN ROTOR PULLEYS, BELTS				1		1	1		1
CLUTCH ASSEMBLY				2		2	2		2
OTHER				1		1	1		1
FLIGHT CONTROL SYSTEMS									
CYCLIC PITCH CONTROL SYSTEM				2		2	2		2
COLLECTIVE PITCH CONTROL SYSTEM				2	1	3	2	1	3
TAIL ROTOR PITCH CONTROL SYSTEM				2		2	2		2
STABILIZING SURFACES-DAMPERS				2		2	2		2
MIXING UNIT				1		1	1		1
MISCELLANEOUS UNITS AND ASSEMBLIES									
TAIL BOOMS/PYLONS/CONES	1		1				1		1
OTHER				1		1	1		1
SUBTOTAL	3		3	20	3	23	23	3	26
** AIRPORTS/AIRWAYS/FACILITIES **									
AIRPORT FACILITIES									
RUNWAY LIGHTING					5	5		5	5
RAMP FACILITIES					1	1		1	1
OBSTRUCTION LIGHTING				1	2	3	1	2	3
OTHER					2	2		2	2
AIRPORT CONDITIONS									
WET RUNWAY		1	1	6	43	49	6	44	50
ICE/SLUSH ON RUNWAY				9	28	37	9	28	37
SNOW ON RUNWAY				18	39	57	18	39	57
SNOW WINDROWS				26	19	45	26	19	45
UNMARKED OBSTRUCTIONS		1	1	5	2	7	5	3	8
SOFT SHOULDERS (RUNWAY)				6	5	11	6	5	11
GLASSY WATER					1	1		1	1
ROUGH WATER					1	1		1	1
HIGH VEGETATION				9	17	26	9	17	26
HIDDEN HAZARD				16	7	23	16	7	23
POORLY MAINTAINED RUNWAY SURFACE				3	8	11	3	8	11
SOFT RUNWAY				5	17	22	5	17	22
WET RAMP/TAXIWAY					2	2		2	2
ICE/SLUSH ON RAMP/TAXIWAY				1	2	3	1	2	3
SNOW ON RAMP/TAXIWAY				2	1	3	2	1	3
SOFT SHOULDERS (RAMP/TAXIWAY)				2		2	2		2
POORLY MAINTAINED RAMP/TAXIWAY SURFACE				1		1	1		1

CAUSE/FACTOR TABLE

AIRPORTS/AIRWAYS/FACILITIES (CONTINUED)

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
OTHER AIRWAYS FACILITIES		4	4	55	79	134	55	83	138
SUBTOTAL		6	6	165	281	446	165	287	452
** WEATHER **									
LOW CEILING	13	142	155	8	49	57	21	191	212
RAIN	1	69	70	4	26	30	5	95	100
FOG	9	89	98	8	53	61	17	142	159
SNOW	3	26	29	8	26	34	11	52	63
HAUL				1		1	1		1
ICING CONDITIONS-INCLUDES SLEET, FREEZING RAIN, ETC	6	11	17	11	11	22	17	22	39
CONDITIONS CONDUCIVE TO CARR/INDUCTION SYSTEM ICING	2	2	4	62	7	69	64	9	73
UNFAVORABLE WIND CONDITIONS	2	9	11	164	153	317	166	162	328
SUDDEN WINDSHIFT				11	10	21	11	10	21
TURBULENCE IN FLIGHT, CLEAR AIR		4	4	2	2	4	2	6	8
TURBULENCE ASSOCIATED WITH CLOUDS AND/OR THUNDERSTORMS	4	18	22	4	5	9	8	23	31
DOWNDRAFTS, UPDRAFTS	2	10	12	16	44	60	18	54	72
LOCAL WHIRLWIND				7	1	8	7	1	8
SQUALL LINE				1		1	1		1
ADVERSE WINDS ALOFT		5	5		3	3		3	3
HIGH TEMPERATURE		9	10	2	20	22	2	25	27
OBSTRUCTIONS TO VISION	1	16	17	3	10	13	4	19	23
HIGH DENSITY ALTITUDE	2	23	25	9	67	76	9	83	92
THUNDERSTORM ACTIVITY	2	23	25	6	18	24	8	41	49
OTHER	1	8	9	6	10	16	7	18	25
SUBTOTAL	46	441	487	333	515	848	379	956	1335
** TERRAIN **									
WET, SOFT GROUND		1	1	83	36	119	83	37	120
SNOW-COVERED		2	2	23	21	44	23	23	46
ICY				1		1	1		1
HIGH VEGETATION		1	1	42	21	63	42	22	64
HIDDEN OBSTRUCTIONS				25	8	33	25	8	33
ROUGH/UNEVEN	2	1	3	210	70	280	212	71	283
ROUGH WATER	2	1	3	3	2	5	5	3	8
GLASSY WATER					3	3		3	3
HIGH OBSTRUCTIONS	26	55	81	179	209	388	205	264	469
LOOSE GRAVEL					2	2		2	2
SANDY				10	1	11	10	1	11
OTHER	5	11	16	86	76	162	91	87	178
SUBTOTAL	35	72	107	662	449	1111	697	521	1218
** MISCELLANEOUS **									
AIRD COLLISION					1	1		1	1
VORTEX TURBULENCE	3		3	9		9	12		12
PROP/JET/ROTOR BLAST				6	1	7	6	1	7
ANIMAL(S) ON RUNWAY/TAXIWAY/RAMP				8	1	9	8	1	9
EVASIVE MANEUVER TO AVOID COLLISION	3	1	4	73	17	90	76	18	94
UNQUALIFIED PERSON OPERATED AIRCRAFT				5		5	5		5
FOREIGN OBJECT DAMAGE				4		4	4		4
SMOKE IN COCKPIT	1		1	4		4	5		5
FOREIGN MATERIAL AFFECTING NORMAL OPERATIONS	2		2	44	2	46	46	2	48
UNDETERMINED	28		28	28		28	56		56
DIRECT ENTRIES	2		2	1		1	3		3
SUBTOTAL	39	1	40	182	22	204	221	23	244
GRAND TOTAL	1173	691	1864	7326	1671	8997	8499	2362	10861
** MISCELLANEOUS ACTS, CONDITIONS **									
ALTIMETER SETTING-INCORRECT		1	1	1	2	3	1	3	4
ANTI-ICING/DEICING EQUIP-IMPROPER OPER. OF/FAILED TO USE	1	1	2	64		64	65	1	66
CHECKLIST-FAILED TO USE		2	2	13	35	48	13	37	50

CAUSE/FACTOR TABLE

MISCELLANEOUS ACTS, CONDITIONS (CONTINUED)

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
CREW COORDINATION-POOR	1		1	2		2	3		3
DISREGARD OF GOOD OPERATING PRACTICE		2	2	3	5	8	3	7	10
IMPROPER EMERGENCY PROCEDURES	5	6	11	24	6	30	29	12	41
FEATHERED WRONG ENGINE	1		1				1		1
GUST LOCKS ENGAGED	3		3	1		1	4		4
INSTRUCTIONS-MISINTERPRETED	1		1				1		1
INSTRUCTIONS-MISREAD OR FAILED TO READ	3		3	1		1	4		4
SEAT BELT NOT FASTENED		1	1		2	2		3	3
NOT ALLIGNED WITH RUNWAY/INTENDED LANDING AREA				22	14	36	22	14	36
UNWARRANTED LOW FLYING	27	11	38	20	13	33	47	24	71
FAILED TO USE ALL AVAILABLE RUNWAY				13	5	18	13	5	18
LANDED AT WRONG AIRPORT					3	3		3	3
INADEQUATE TO FUEL SUPPLY	3		3	27		27	30		30
FLEW INTO BLIND CANYON	4	2	6	4	1	5	8	3	11
PREMATURE FLAP RETRACTION				1		1	1		1
POORLY PLANNED APPROACH		7	7	6	31	37	6	38	44
MISCALCULATED FUEL CONSUMPTION	4		4	45	5	50	49	5	54
JETTISONED LOAD				1	25	26	1	25	26
STOLN OR UNAUTHORIZED USE OF AIRCRAFT		7	7	2	18	20	2	25	27
LANDED ON FOAMED RUNWAY					6	6		6	6
IMPROPERLY SECURED				14	3	17	14	3	17
ELECTRICAL FAILURE		1	1	10	12	22	10	13	23
ENGINE LOADED UP	1		1	16	1	17	17	1	18
FATIGUE FRACTURE	10		10	36	1	37	46	1	47
FUEL GRADE-IMPROPER	1		1				1		1
IMPROPER GRADE OIL-LUBRICATING SYSTEM				1		1	1		1
RPM-UNCONTROLLED-OVERSPEED				1	1	2	1	1	2
WIND SHIELD, DIRTY, FOGGY, ETC-RESTRICTED VISION				2	6	8	2	6	8
IMPROPER ALIGNMENT/ADJUSTMENT		1	1	6	2	8	6	3	9
FAILURE OF TWO OR MORE ENGINES	3	4	7	5	13	18	8	17	25
SEPARATION IN FLIGHT	1	43	44		36	36	1	79	80
FIRE IN CABIN/ COCKPIT/ BAGGAGE COMPARTMENT	3		3	4	2	6	7	2	9
FIRE IN ENGINE	2		2	9	1	10	11	1	12
FIRE IN BRAKES/ WHEEL ASSEMBLY/ WHEEL WELL				1	1	2	1	1	2
ASYMMETRICAL FLAPS				1		1	1		1
LATEAL IMBALANCE				1	2	3	1	2	3
CORRODED/CORROSION	2		2	12	1	13	14	1	15
INCORRECT TRIM SETTING	2		2	7	5	12	9	5	14
CARGO SHIFTED	1		1				1		1
CONGESTED TRAFFIC-PATTERN				1	4	5	1	4	5
PILOT FATIGUE		12	12	1	19	20	1	31	32
FUEL EXHAUSTION	17		17	207		207	224		224
FUEL CONTAMINATION-EXCLUSIVE OF WATER IN FUEL				9		9	9		9
PILOT SUFFERED HEART ATTACK	4	1	5				4	1	5
ALCOHOLIC IMPAIRMENT OF EFFICIENCY AND JUDGMENT	31	17	48	2		2	33	17	50
HYPOXIA	1		1				1		1
ICE-IN FUEL				7		7	7		7
ICE-ARRAULTOR	2		2	69		69	71		71
AIRFRAME ICE	7	3	10	22	3	25	29	6	35
ICE-INDSHIELD		1	1	3		3	3	1	4
IMPROPERLY LOADED AIRCRAFT-WEIGHT-AND/OR CG	5	7	12	15	13	28	20	20	40
INTERFERENCE WITH FLIGHT CONTROLS	2	1	3	7	1	8	9	2	11
WHITOUT				5	3	8	5	3	8
SUNGARE	1	4	5	1	21	22	2	25	27
LACK OF LUBRICATION-SPECIFIC PART, NOT SYSTEM	1		1	13	1	14	14	1	15
OIL EXHAUSTION-ENGINE LUBRICATING SYSTEM				20		20	20		20
SIMULATED CONDITIONS	3	4	7	40	19	59	43	23	66
FUEL SIPHONING				2	1	3	2	1	3
WATER IN FUEL				31		31	31		31
AIRCRAFT CAME TO REST IN WATER		39	39		81	81		120	120
FROZEN, MOISTURE		1	1	1		1	1		2
MISSING	1		1	10	1	11	11		12
TOUCH AND GO LANDING		4	4		75	75		79	79
SEAT BELT SIGN OFF					1	1		1	1
OVERSPEED FAILURE	26	1	27	27	593	620	53	594	647
MATERIAL FAILURE	15		15	209	12	221	224	12	236
FUEL STARVATION	13		13	158		158	171		171
OIL STARVATION				8	1	9	8	1	9
IMPROPER CLEARANCE-TOLERANCE	1		1	5	4	9	6	4	10
FUEL SELECTOR POSITIONED BETWEEN TANKS	3		3	1		1	4		4
FIRE OF UNDETERMINED ORIGIN				2		2	2		2
UNAPPROVED MODIFICATION	1		1	3		3	4		4

CAUSE/FACTOR TABLE

MISCELLANEOUS ACTS, CONDITIONS (CONTINUED)

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
IMPROPER/INADEQUATE VENTING				1		1	1		1
POOR WELD				1		1	1		1
PREVIOUS DAMAGE	2	1	3	34	14	48	36	15	51
LEAK/LEAKAGE	1		1	15	1	16	16	1	17
LOW FLUID LEVEL				2		2	2		2
CIRCUIT BREAKER POPPED				3	8	11	3	8	11
ARCING				2		2	2		2
LOW COMPRESSION				1	1	2	1	1	2
RUNWAY CLOSED					2	2		2	2
DOWNWIND		6	6	2	120	122	2	126	128
CARRON DEPOSITS				3		3	3		3
LANDED IN CONSTRUCTION AREA				4	1	5	4	1	5
OVER TORQUED				1		1	1		1
UNDER TORQUED	1		1	1	1	2	2	1	3
LOOSE, PART/FITTING				3	2	5	3	2	5
GROUND RESONANCE	1		1	3		3	4		4
RENT				5	2	7	5	2	7
BINDING		1	1	5		5	5	1	6
BRITTLE	1		1	1		1	2		2
BUCKLED				1	1	2	1	1	2
BURNED				3		3	3		3
CHAFFED				6		6	6		6
COLLAPSED		1	1					1	1
CROSSED				1		1	1		1
DETERIORATED	2		2	7		7	9		9
DISCONNECTED		1	1	19	1	20	19	2	21
DISTORTED				1		1	1		1
ELONGATED				1		1	1		1
EXCESSIVE-WEAR/PLAY				3		3	3		3
ERRATIC				3	7	10	3	7	10
FLUCTUATING				1	2	3	1	2	3
FLUTTER	1		1	1		1	2		2
FRAYED				1		1	1		1
GROUNDING				5		5	5		5
HIGH VOLTAGE BREAKDOWN				1		1	1		1
IMPROPERLY INSTALLED	1		1	14		14	15		15
JAMMED	1		1	11		11	12		12
OBSTRUCTED				10	2	12	10	2	12
OPEN					1	1		1	1
OVERHEATED	1		1	6		6	7		7
EXCESSIVE PRESSURE					1	1		1	1
PRESSURE TOO LOW	1		1	5	1	6	6	1	7
PRESSURE, NONE				11	1	12	11	1	12
SCORED				4		4	4		4
SHEARED				3		3	3		3
STICKING				2		2	2		2
STRIPPED				1		1	1		1
STUCK				5	1	6	5	1	6
EXCESSIVE TEMPERATURE	1		1	5	3	8	6	3	9
TEMPERATURE TOO LOW				3		3	3		3
VIBRATION, EXCESSIVE	1		1	4	2	6	5	2	7
CONGESTED RAMP/TAXIWAY					2	2		2	2
ICE-INDUCTION				4		4	4		4
SEAT BELT SIGN ON					1	1		1	1
FIRE IN WING	1		1	1		1	2		2
LOAD NOT JETTISONED		3	3	2	7	9	2	10	12
FAILED TO USE LANDING LIGHT(S)	1		1				1		1
INTENTIONAL GROUND-WATER LOOP-SWERVE				31	11	42	31	11	42
INTENTIONAL WHEELS UP		1	1	46	4	50	46	5	51

DIRECT ENTRY CAUSES

PILOT-INADVERTENTLY MOVED MIXTURE CTL TO OFF PSN.
 PILOT-ACCIDENTLY MOVED GR SWITCH WHILE TAXIING.
 PWR PLT-ENG BACKFIRED IGNITING DRIPPING FUEL.
 MISC-INADQOT CLNC BTN ACFT DRG CLSD CRS AIR RACE.
 MISC-INADQOT CLNC BTN ACFT DRG CLSD CRS AIR RACE.
 MISC-PREMATURE RELEASE FROM TOW AT TOO LOW ALT.

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

ANALYTIC TABLE

KIND OF FLYING VS INJURY INDEX (ALL OPERATIONS)

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
INSTRUCTIONAL						
DUAL	28	27	28	161	244	241
Solo	19	13	43	256	331	331
CHECK	3			12	15	15
TRAINING	9	9	17	92	127	127
NONCOMMERCIAL						
PLEASURE	380	218	344	1505	2447	2437
PRACTICE	9	11	24	69	113	113
BUSINESS	74	28	48	265	415	415
CORPORATE/EXECUTIVE	8	7	8	53	76	76
AERIAL SURVEY		1	2	4	7	7
COMPANY FLIGHT						
OTHER	1			2	3	3
COMMERCIAL						
AERIAL APPLICATION	31	30	37	132	230	229
CROP CONTROL RELATED FLIGHT	11	12	12	131	166	155
FIRE CONTROL	4	1	2	4	11	11
FIRE CONTROL RELATED FLIGHT	2	1	2	6	11	11
AERIAL MAPPING/PHOTOGRAPHY	1		5	4	10	10
AERIAL ADVERTISING	2	2	1	3	8	8
POWER AND PIPELINE PATROL		6	2	6	14	14

ANALYTIC TABLE

KIND OF FLYING VS INJURY INDEX(ALL OPERATIONS)
(CONTINUED)

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
FISH SPOTTING	2				2	1
AIR TAXI-PASSENGER OPERATIONS	24	13	15	65	117	116
AIR TAXI-CARGO OPERATIONS	8	2	3	19	32	32
CONSTRUCTION WORK	1			2	3	3
SCHEDULED PASSENGER SERVICE						
SCHEDULED CARGO SERVICE						
INTRA-STATE CHARTER PASSG.			1		1	1
INTRA-STATE CHARTER CARGO.						
MILITARY CONTRACT-PASSENGER						
MILITARY CONTRACT-CARGO						
CHARTER CARGO-DOMESTIC			1	1	2	2
CHARTER PASSG-DOMESTIC	3	1	1	5	10	10
CHARTER-CARGO-INTERNATIONAL	1	1		1	3	3
CHARTER-PASSG-INTERNATIONAL				1	1	1
OTHER	1	2	1	3	7	7
UNKNOWN/NOT REPORTED						
MISCELLANEOUS						
EXPERIMENTATION	1	1	1		3	3
TEST	4	4	10	36	54	54
DEMONSTRATION	3	4	3	4	14	14
FERRY	13	5	17	63	98	98

ANALYTIC TABLE

KIND OF FLYING VS INJURY INDEX(ALL OPERATIONS)
(CONTINUED)

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
SEARCH AND RESCUE	1	3	3	10	17	16
AIR SHOW/AIR RACING	12	1	3	4	20	18
PARACHUTE JUMP		4	3	5	12	12
PARACHUTE JUMP-AIR SHOW						
TOWING GLIDERS	2	1	1	4	8	8
SEEDING CLOUDS	1				1	1
HUNTING	8	1	2	2	13	13
POLICE PATROL	2	2	4	9	17	16
ALL OTHER PUBLIC FLYING	3	1	2	7	13	13
OTHER	6	1	1	4	12	12
UNKNOWN/NOT REPORTED		1		7	8	8

ANALYTIC TABLE

KIND OF FLYING VS AIRCRAFT DAMAGE (ALL OPERATIONS)

	DESTROYED SUBSTANTIAL MINOR NONE				RECORDS	ACCIDENTS
INSTRUCTIONAL						
DUAL	44	196	3	1	244	241
SOLO	30	300	1		331	331
CHECK	3	12			15	15
TRAINING	15	110	2		127	127
NONCOMMERCIAL						
PLEASURE	549	1873	13	12	2447	2437
PRACTICE	16	97			113	113
BUSINESS	108	306	1		415	415
CORPORATE/EXECUTIVE	15	59	1	1	76	76
AERIAL SURVEY	5	2			7	7
COMPANY FLIGHT						
OTHER	1	2			3	3
COMMERCIAL						
AERIAL APPLICATION	83	144	1	2	230	229
CROP CONTROL RELATED FLIGHT	32	132		2	166	165
FIRE CONTROL	5	6			11	11
FIRE CONTROL RELATED FLIGHT	5	6			11	11
AERIAL MAPPING/PHOTOGRAPHY	4	6			10	10
AERIAL ADVERTISING	3	5			8	8
POWER AND PIPELINE PATROL	3	11			14	14

ANALYTIC TABLE

KIND OF FLYING VS AIRCRAFT DAMAGE(ALL OPERATIONS)
(CONTINUED)

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS
FISH SPOTTING	2				2	1
AIR TAXI-PASSENGER OPERATIONS	28	88	1		117	116
AIR TAXI-CARGO OPERATIONS	10	21	1		32	32
CONSTRUCTION WORK	1	2			3	3
SCHEDULED PASSENGER SERVICE						
SCHEDULED CARGO SERVICE						
INTRA-STATE CHARTER PASSG.		1			1	1
INTRA-STATE CHARTER CARGO.						
MILITARY CONTRACT-PASSENGER						
MILITARY CONTRACT-CARGO						
CHARTER CARGO-DOMESTIC	1	1			2	2
CHARTER PASSG-DOMESTIC	5	5			10	10
CHARTER-CARGO-INTERNATIONAL	1	2			3	3
CHARTER-PASSG-INTERNATIONAL		1			1	1
OTHER	3	3	1		7	7
UNKNOWN/NOT REPORTED						
MISCELLANEOUS						
EXPERIMENTATION	2	1			3	3
TEST	10	44			54	54
DEMONSTRATION	4	8		2	14	14
FERRY	23	74	1		98	98

ANALYTIC TABLE

KIND OF FLYING VS AIRCRAFT DAMAGE (ALL OPERATIONS)
(CONTINUED)

	<div>DESTROYED</div> <div>SUBSTANTIAL</div> <div>MINOR</div> <div>NONE</div>			RECORDS	ACCIDENTS
SEARCH AND RESCUE	3	13	1	17	16
AIR SHOW/AIR RACING	14	6		20	18
PARACHUTE JUMP	3	9		12	12
PARACHUTE JUMP-AIR SHOW					
TOWING GLIDERS	2	6		8	8
SEEDING CLOUDS	1			1	1
HUNTING	7	6		13	13
POLICE PATROL	5	12		17	16
ALL OTHER PUBLIC FLYING	4	9		13	13
OTHER	7	4	1	12	12
UNKNOWN/NOT REPORTED	1	7		8	8

INJURIES, ACCIDENTS
INSTRUCTIONAL (DUAL)
ALL OPERATIONS

	INJURIES					TOTAL
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	
PILOT	25	19	25	175		244
COPILOT						
DUAL STUDENT	21	22	21	176		240
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS	5	3	1	21		30
TOTAL	51	44	47	372	ABOARD	514
* OTHER AIRCRAFT	8	3		135		146
OTHER GROUND		3	3			6
GRAND TOTAL	59	50	50	507		666

INVOLVES 241 TOTAL ACCIDENTS
INVOLVES 28 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)
ALL OPERATIONS

	INJURIES					TOTAL
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	
PILOT	18	13	43	257		331
COPLOT.						
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS			2	4		6
TOTAL	18	13	45	261	ABOARD	337
* OTHER AIRCRAFT	2			8		10
OTHER GROUND						
GRAND TOTAL	20	13	45	269		347

INVOLVES 331 TOTAL ACCIDENTS
INVOLVES 19 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
PLFASURE
ALL OPERATIONS

	INJURIES					TOTAL
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	
PILOT	345	189	313	1600		2447
COPILOT	24	2	4	11		41
DUAL STUDENT	1	1		1		3
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW		1		1		2
PASSENGERS	417	234	375	2028		3054
 TOTAL	 787	 427	 692	 3641	 ABOARD	 5547
 * OTHER AIRCRAFT	 6	 2	 2	 42		 52
OTHER GROUND	4	5	11	2		22
 GRAND TOTAL	 797	 434	 705	 3685		 5621

INVOLVES 2437 TOTAL ACCIDENTS
INVOLVES 378 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
BUSINESS
ALL OPERATIONS

	INJURIES					TOTAL
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	
PILOT	72	22	45	276		415
COPILOT	7	1	2	10		20
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER			1			1
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS	86	21	43	253		403
TOTAL	165	44	91	539	ABOARD	839
* OTHER AIRCRAFT	3			6		9
OTHER GROUND		1	14	2		17
GRAND TOTAL	168	45	105	547		865

INVOLVES 415 TOTAL ACCIDENTS
INVOLVES 74 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
CONFIDENTIAL/EXECUTIVE
ALL OPERATIONS

	INJURIES					TOTAL
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	
PILOT	7	5	7	57		76
COPILOT	3	1	1	18		23
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER				2		2
NAVIGATOR						
CABIN ATTENDANT		2		1		3
EXTRA CREW						
PASSENGERS	31	10	12	142		195
 TOTAL	 41	 18	 20	 220	 ABOARD	 299
 * OTHER AIRCRAFT				4		4
OTHER GROUND						
 GRAND TOTAL	 41	 18	 20	 224		 303

INVOLVES 76 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.

INJURIES, ACCIDENTS
AERIAL APPLICATION
ALL OPERATIONS

58

		INJURIES						
		FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL	
		37	41	48	270		396	
PILOT								
COPILOT								
DUAL STUDENT								
CHECK PILOT								
FLIGHT ENGINEER								
NAVIGATOR								
CABIN ATTENDANT								
EXTRA CREW								
PASSENGERS					1		1	
TOTAL		37	41	48	271		ABOARD	397
OTHER AIRCRAFT								
OTHER GROUND		5	1	1			7	
GRAND TOTAL		42	42	49	271		404	
INVOLVES	394	TOTAL ACCIDENTS						
INVOLVES	40	FATAL ACCIDENTS						

INJURIES, ACCIDENTS
FIRE CONTROL
ALL OPERATIONS

	INJURIES					TOTAL
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	
PILOT	5	2	4	11		22
COPILOT				3		3
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW				1		1
PASSENGERS	2		4	7		13
TOTAL	7	2	8	22	ABOARD	39
OTHER AIRCRAFT						
OTHER GROUND						
GRAND TOTAL	7	2	8	22		39

INVOLVES 22 TOTAL ACCIDENTS
INVOLVES 6 FATAL ACCIDENTS

INJURIES, ACCIDENTS
POWER/PIPELINE PATROL (ALL OPERATIONS)

	INJURIES					TOTAL
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	
PILOT		4	2	8		14
COPILOT						
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW				2		2
PASSENGERS		3	3			6
TOTAL		7	5	10	ABOARD	22
OTHER AIRCRAFT						
OTHER GROUND						
GRAND TOTAL		7	5	10		22

INVOLVES 14 TOTAL ACCIDENTS
INVOLVES FATAL ACCIDENTS

INJURIES, ACCIDENTS
 AIR TRAFFIC PASSENGERS
 ALL OPERATIONS

		INJURIES						
		FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL	
PILOT		19	10	13	75		117	
COPILOT		5	3		8		16	
DUAL STUDENT					1		1	
CHECK PILOT					1		1	
FLIGHT ENGINEER								
NAVIGATOR								
CABIN ATTENDANT								
EXTRA CREW					1		1	
PASSENGERS		70	34	43	213		360	
TOTAL		94	47	56	299		ABOARD	496
* OTHER AIRCRAFT					2		2	
OTHER GROUND		3		1			4	
GRAND TOTAL		97	47	57	301		502	

INVOLVES 116 TOTAL ACCIDENTS
 INVOLVES 24 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
AIR TAXI (CARGO)
ALL OPERATIONS

	INJURIES					TOTAL
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	
PILOT	8	1	2	21		32
COPILOT	4	1	2	4		11
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS				6		6
TOTAL	12	2	4	31	ABOARD	49
OTHER AIRCRAFT						
OTHER GROUND		1	1			2
GRAND TOTAL	12	3	5	31		51

INVOLVES 32 TOTAL ACCIDENTS
INVOLVES 8 FATAL ACCIDENTS

INJURIES, ACCIDENTS
AIR SHOW (EXCEPT PARACHUTE JUMP, IN CONNECTION) AND AIR RACING
ALL OPERATIONS

		INJURIES					TOTAL
		FATAL	SERIOUS	MINOR	NONE	UNKNOWN	
PILOT		11		4	5		20
COPILOT							
DUAL STUDENT							
CHECK PILOT							
FLIGHT ENGINEER							
NAVIGATOR							
CABIN ATTENDANT							
EXTRA CREW							
PASSENGERS			1	1			2
TOTAL		11	1	5	5	ABOARD	22
OTHER AIRCRAFT							
OTHER GROUND							
GRAND TOTAL		11	1	5	5		22
INVOLVES	18	TOTAL ACCIDENTS					
INVOLVES	10	FATAL ACCIDENTS					

INJURIES, ACCIDENTS
PARACHUTE JUMP(SPORTING)
ALL OPERATIONS

		INJURIES				
		FATAL	SERIOUS	MINOR	NONE	UNKNOWN
						TOTAL
PILOT			1	2	9	12
COPILOT						
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS			4	9	25	38
TOTAL			5	11	34	50
						ABOARD
OTHER AIRCRAFT						
OTHER GROUND				1		1
GRAND TOTAL			5	12	34	51

INVOLVES 12 TOTAL ACCIDENTS
INVOLVES FATAL ACCIDENTS

INJURIES - ACCIDENTS
POLICE PATROL
ALL OPERATIONS

	INJURIES					TOTAL
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	
PILOT	2	2	2	11		17
COPILOT				1		1
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW		1		3		4
PASSENGERS	2		3	5		10
TOTAL	4	3	5	20		32
					ABOARD	

OTHER AIRCRAFT
OTHER GROUND

GRAND TOTAL	4	3	5	20		32
-------------	---	---	---	----	--	----

INVOLVES	16	TOTAL ACCIDENTS
INVOLVES	2	FATAL ACCIDENTS

INJURIES, ACCIDENTS
HIGHWAY TRAFFIC SURVEY
ALL OPERATIONS

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

INJURIES

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

TOTAL

ABOARD

OTHER AIRCRAFT
OTHER GROUND

GRAND TOTAL

INVOLVES
INVOLVES

TOTAL ACCIDENTS
FATAL ACCIDENTS

INJURIES, ACCIDENTS
U.S. GENERAL AVIATION
ALL OPERATIONS
1971

	INJURIES					TOTAL
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	
PILOT	615	354	594	3132		4695
COPILOT	49	12	13	83		157
DUAL STUDENT	23	23	21	179		246
CHECK PILOT	2			11		13
FLIGHT ENGINEER	1		1	2		4
NAVIGATOR						
CABIN ATTENDANT		2		1		3
EXTRA CREW	6	3	3	17		29
PASSENGERS	643	335	542	2838		4358
 TOTAL	 1339	 729	 1174	 6263	 ABOARD	 9505
 * OTHER AIRCRAFT				146		146
OTHER GROUND	16	16	33	4		69
 GRAND TOTAL	 1355	 745	 1207	 6413		 9720

INVOLVES 4648 TOTAL ACCIDENTS
INVOLVES 661 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.

INCLUDES ALL AIRCRAFT INVOLVED IN COLLISIONS

SELECTED ACCIDENT DATA

All Operations

1971^{a/}

ACCIDENT RECORDS

TOTAL FATAL

PILOT TOTAL TIME

0-	25 Hours.....	216	18
26-	50 Hours.....	223	20
51-	100 Hours.....	419	53
101-	300 Hours.....	966	125
301-	500 Hours.....	449	66
501-	1000 Hours.....	548	79
1001-	3000 Hours.....	908	147
3001-	5000 Hours.....	344	55
5001-	8000 Hours.....	238	38
8001-	10,000 Hours.....	97	9
Over-	10,000 Hours.....	225	36
Unknown/not	reported.....	63	31

PILOT TIME IN TYPE AIRCRAFT

5-	Or less Hours.....	316	32
6-	25 Hours.....	865	86
26-	50 Hours.....	632	75
51-	100 Hours.....	674	92
101-	300 Hours.....	904	119
301-	5000 Hours.....	336	38
501-	1000 Hours.....	352	37
1001-	2000 Hours.....	218	21
2001-	3000 Hours.....	69	7
Over-	3000 Hours.....	110	12
Unknown/not	reported.....	220	158

ANALYTIC TABLE

PILOT AGE VS INJURY INDEX(ALL OPERATIONS)

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
14		1	1		2	2
15				1	1	1
16		1	1	5	7	7
17	5	2	6	16	29	29
18	5	3	3	24	35	35
19	7	7	10	38	62	62
20	7	1	7	36	51	51
21	8	7	8	46	69	69
22	6	7	11	51	75	75
23	12	13	12	59	96	96
24	17	14	20	70	121	121
25	25	12	20	73	130	130
26	15	15	26	84	140	140
27	24	12	24	97	157	157
28	20	14	19	107	140	160
29	19	9	25	114	167	167
30	16	11	22	97	146	146
31	20	15	13	90	138	137
32	20	13	22	99	154	154
33	22	13	25	79	139	139
34	22	5	14	90	131	131

ANALYTIC TABLE

PILOT AGE VS INJURY INDEX(ALL OPERATIONS)
(CONTINUED)

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
35	20	8	19	90	137	137
36	16	9	15	74	114	114
37	16	3	14	99	132	132
38	16	12	17	83	128	128
39	20	16	19	79	134	134
40	15	9	21	85	130	130
41	25	16	25	68	134	134
42	20	13	19	80	132	132
43	25	10	18	93	146	146
44	13	12	12	86	123	123
45	15	13	14	88	130	130
46	19	9	23	87	138	138
47	25	12	15	84	136	136
48	15	13	10	72	110	110
49	22	10	22	71	125	125
50	24	12	14	68	118	118
51	12	8	13	49	82	82
52	11	6	10	59	86	86
53	10	10	9	38	67	67
54	16	4	7	35	62	62
55	10	5	7	36	58	58

ANALYTIC TABLE

PILOT AGE VS INJURY INDEX (ALL OPERATIONS)
(CONTINUED)

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
56	5	5	6	29	45	45
57	7	4	5	19	35	35
58	4	4	2	13	23	23
59	6	3	4	12	25	25
60	2	4	2	8	16	16
61	3	3	1	12	19	19
62	4	3	4	9	20	20
63	5		3	8	16	16
64	1	1	2	5	9	9
65	2			6	8	8
66	1	1	1	4	7	7
67		1	1	2	4	4
68	1		1		2	2
69	1			4	5	5
70				3	3	3
71	1		1	6	8	8
72	1				1	1
73						
74				1	1	1
75				1	1	1
76				1	1	1
UNKNOWN			2	13	15	15

ANALYTIC TABLE

CONDITIONS OF LIGHT VS INJURY INDEX

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
DAWN	5	2	2	13	22	22
DAYLIGHT	476	336	566	2646	4024	4024
DUSSK	14	12	20	72	118	118
NIGHT (DARK)	150	55	45	189	439	439
NIGHT (MOONLIGHT-BRIGHT)	5	4	7	15	31	31
UNKNOWN/NOT REPORTED	11			3	14	14

ANALYTIC TABLE

PILOT CERTIFICATE VS INJURY INDEX

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
STUDENT	65	31	84	409	589	588
PRIVATE	318	176	303	1300	2097	2095
COMMERCIAL	153	110	144	661	1068	1066
AIRLINE TRANSPORT	23	11	12	74	120	120
PRIVATE W/FLIGHT INSTRUCTOR				1	1	1
COML WITH FLT INSTRUCTOR	95	76	74	411	656	651
ATR W/FLIGHT INSTRUCTOR	15	8	18	79	120	120
OTHER			1	1	2	2
NONE	8	2	10	15	35	35
UNKNOWN/NOT REPORTED	1		1	6	8	8

ANALYTIC TABLE

STATE OF OCCURRENCE VS INJURY INDEX-ALL OPERATIONS-1971

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
ALABAMA	10	3	7	51	71	71
ALASKA	25	14	28	138	205	204
ARIZONA	27	5	14	80	126	126
ARKANSAS	9	8	10	66	93	92
CALIFORNIA	89	63	78	374	604	593
COLORADO	17	8	16	71	112	112
CONNECTICUT	3	2	11	20	36	36
DELAWARE	1	1	3	3	8	8
FLORIDA	22	20	25	130	197	196
GEORGIA	21	13	15	76	125	125
HAWAII	4	3	2	9	18	18
IDAHO	6	6	10	35	57	57
ILLINOIS	13	14	16	112	155	152
INDIANA	10	4	9	54	77	77
IOWA	12	9	8	78	107	105
KANSAS	15	6	11	57	89	88
KENTUCKY	9	4	7	30	50	49
LOUISIANA	12	13	15	37	77	75
MAINE	3	2	6	16	27	27
MARYLAND	8	3	6	20	37	36
MASSACHUSETTS	4	4	7	46	61	60

ANALYTIC TABLE

STATE OF OCCURRENCE VS INJURY INDEX-ALL OPERATIONS-1971

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
MICHIGAN	18	13	21	100	152	150
MINNESOTA	10	11	15	43	79	79
MISSISSIPPI	8	5	7	36	56	56
MISSOURI	13	11	11	71	106	105
MONTANA	5	2	2	46	55	55
NEBRASKA	6	6	16	63	91	91
NEVADA	7	4	11	44	66	66
NEW HAMPSHIRE	6		3	9	18	18
NEW JERSEY	15	10	13	42	80	78
NEW MEXICO	13	4	14	47	78	77
NEW YORK	14	11	24	103	152	149
NORTH CAROLINA	13	6	19	43	81	81
NORTH DAKOTA	5	2	3	23	33	33
OHIO	18	12	27	88	145	143
OKLAHOMA	17	9	10	64	100	100
OREGON	20	6	10	43	79	77
PENNSYLVANIA	25	16	24	84	149	146
RHODE ISLAND	3	1		5	9	9
SOUTH CAROLINA	5	6	4	26	41	41
SOUTH DAKOTA	4	4	3	19	30	30
TENNESSEE	7	7	9	31	54	54

ANALYTIC TABLE

STATE OF OCCURRENCE VS INJURY INDEX-ALL OPERATIONS-1971

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
TEXAS	46	22	33	204	305	301
UTAH	4	5	4	14	27	27
VERMONT	2	2	1	7	12	12
VIRGINIA	10	6	11	27	54	53
WASHINGTON	17	5	14	48	84	84
WEST VIRGINIA	2	1	5	8	16	16
WISCONSIN	8	3	13	41	65	63
WYOMING	5	5	3	21	34	34
DISTRICT OF COLUMBIA		1			1	1
UNKNOWN/NOT REPORTED	10				10	10
PUERTO RICO	5	1	1	7	14	14
VIRGIN ISLANDS	1		1	4	6	6
SAMOA						
OTHER (U.S.TERRITORIES/POSSESSIONS)		1		2	3	3
CANADA	4	1	1	2	8	8
MEXICO	4	7	3	16	30	30
CENTRAL AMERICA			1		1	1
SOUTH AMERICA						
EUROPE				2	2	2
ASIA	2		2	2	6	6
AFRICA				1	1	1
AUSTRALIA						
ICELAND						
GREENLAND						
OTHER (FOREIGN COUNTRIES)	4	2	4	12	22	22
PACIFIC OCEAN NORTH LATITUDES						
PACIFIC OCEAN SOUTH LATITUDES						
ATLANTIC OCEAN NORTH LAT.	1			6	7	7
ATLANTIC OCEAN SOUTH LAT.				1	1	1
OTHER (INTERNATIONAL WATERS)	1	1		1	3	3

ANALYTIC TABLE

STATE OF OCCURRENCE VS AIRCRAFT DAMAGE-ALL OPERATIONS-1971

	<div>DESTROYED</div> <div>SUBSTANTIAL</div> <div>MINOR</div> <div>NONE</div>				RECORDS	ACCIDENTS
ALABAMA	14	57			71	71
ALASKA	24	179	2		205	204
ARIZONA	37	87		2	126	126
ARKANSAS	15	77		1	93	92
CALIFORNIA	157	440	4	3	604	593
COLORADO	20	91	1		112	112
CONNECTICUT	7	29			36	36
DELAWARE	1	7			8	8
FLORIDA	39	156		2	197	196
GEORGIA	35	89	1		125	125
HAWAII	5	12		1	18	18
IDAHO	14	43			57	57
ILLINOIS	25	126	3	1	155	152
INDIANA	14	63			77	77
IOWA	19	85		3	107	105
KANSAS	15	72	1	1	89	88
KENTUCKY	16	33	1		50	49
LOUISIANA	25	51		1	77	75
MAINE	5	22			27	27
MARYLAND	13	23	1		37	36
MASSACHUSETTS	9	51	1		61	60

ANALYTIC TABLE

STATE OF OCCURRENCE VS AIRCRAFT DAMAGE-ALL OPERATIONS-1971

	<div>DESTROYED</div> <div>SUBSTANTIAL</div> <div>MINOR</div> <div>NONE</div>				RECORDS	ACCIDENTS
MICHIGAN	30	120	1	1	152	150
MINNESOTA	18	61			79	79
MISSISSIPPI	17	39			56	56
MISSOURI	23	83			106	105
MONTANA	6	49			55	55
NEBRASKA	11	80			91	91
NEVADA	12	54			66	66
NEW HAMPSHIRE	6	12			18	18
NEW JERSEY	21	59			80	78
NEW MEXICO	16	61	1		78	77
NEW YORK	27	121	3	1	152	149
NORTH CAROLINA	15	65		1	81	81
NORTH DAKOTA	8	25			33	33
OHIO	30	115			145	143
OKLAHOMA	24	76			100	100
OREGON	32	46	1		79	77
PENNSYLVANIA	27	121	1		149	146
RHODE ISLAND	2	7			9	9
SOUTH CAROLINA	10	31			41	41
SOUTH DAKOTA	4	25	1		30	30
TENNESSEE	16	38			54	54

ANALYTIC TABLE

STATE OF OCCURRENCE VS AIRCRAFT DAMAGE-ALL OPERATIONS-1971

	<div>DESTROYED</div> <div>SUBSTANTIAL</div> <div>MINOR</div> <div>NONE</div>				RECORDS	ACCIDENTS
TEXAS	70	233		2	305	301
UTAH	6	21			27	27
VERMONT	3	9			12	12
VIRGINIA	17	36	1		54	53
WASHINGTON	26	56	2		84	84
WEST VIRGINIA	4	12			16	16
WISCONSIN	11	54			65	63
WYOMING	10	24			34	34
DISTRICT OF COLUMBIA	1				1	1
UNKNOWN/NOT REPORTED	10				10	10
PUERTO RICO	8	6			14	14
VIRGIN ISLANDS	1	5			6	6
SAMOA						
OTHER (U.S. TERRITORIES/POSSESSIONS)	1	1		1	3	3
CANADA	3	5			8	8
MEXICO	7	23			30	30
CENTRAL AMERICA	1				1	1
SOUTH AMERICA						
EUROPE		2			2	2
ASIA	3	2		1	6	6
AFRICA		1			1	1
AUSTRALIA						
ICELAND						
GREENLAND						
OTHER (FOREIGN COUNTRIES)	4	18			22	22
PACIFIC OCEAN NORTH LATITUDES						
PACIFIC OCEAN SOUTH LATITUDES						
ATLANTIC OCEAN NORTH LAT.	5	2			7	7
ATLANTIC OCEAN SOUTH LAT.	1				1	1
OTHER (INTERNATIONAL WATERS)	2	1			3	3

ANALYTIC TABLE

MONTH OF OCCURRENCE VS INJURY INDEX

INJURY INDEX

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
01	44	18	46	216	324	324
02	39	18	32	190	279	279
03	37	29	36	244	346	346
04	46	44	51	245	386	386
05	56	36	75	289	456	456
06	54	51	78	314	497	497
07	77	49	72	307	505	505
08	69	57	76	350	552	552
09	56	36	53	246	391	391
10	74	32	60	215	381	381
11	50	13	31	176	270	270
12	59	26	30	146	261	261

ANALYTIC TABLE

TYPE OF POWER VS INJURY INDEX(ALL OPERATIONS)

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
RECIPROCATING ENGINE	654	393	635	2878	4560	4514
TURBO ET ENGINE	3	1		7	11	11
TURBO ROP ENGINE	7	6	1	27	41	41
TURBO AN ENGINE						
NONE	10	10	5	30	55	55
TURBO HAFT	4	4	6	15	29	29

ANALYTIC TABLE

TYPE AIRCRAFT VS INJURY INDEX (ALL OPERATIONS)

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
FIXED-WING	642	378	602	2771	4393	4347
ROTORCRAFT	21	24	37	138	220	218
GLIDER	10	9	5	31	55	55
BALLOON		1			1	1
BLIMP						
DIRIGIBLE						
ROCKET						
CONVERTIPLANE						
GYROPLANE	5	2	3	17	27	27
OTHER						

TYPE AIRCRAFT VS DAMAGE (ALL OPERATIONS)

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS
FIXED-WING	979	3368	26	20	4393	4347
ROTORCRAFT	59	159		2	220	218
GLIDER	11	44			55	55
BALLOON		1			1	1
BLIMP						
DIRIGIBLE						
ROCKET						
CONVERTIPLANE						
GYROPLANE	9	18			27	27
OTHER						

ANALYTIC TABLE

AIRPORT PROXIMITY VS INJURY INDEX

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
ON AIRPORT	71	132	742	1899	2344	2344
ON SE PLANE BASE			2	4	6	6
ON HELIPORT	1			2	3	3
ON RAILROAD/SHIP/PLATFORM						
IN TRAFFIC PATTERN	65	48	48	80	241	241
WITHIN 1/4 MILE	30	18	27	44	119	119
WITHIN 1/2 MILE	25	18	18	32	93	93
WITHIN 3/4 MILE	4	1	7	12	24	24
WITHIN 1 MILE	16	10	25	42	93	93
WITHIN 2 MILES	33	16	27	55	131	131
WITHIN 3 MILES	43	17	13	56	129	129
WITHIN 4 MILES	30	13	19	46	108	108
WITHIN 5 MILES	7	5	2	13	27	27
BEYOND 5 MILES	324	127	204	638	1293	1293
UNKNOWN/NOT REPORTED	12	4	6	15	37	37

ANALYTIC TABLE

FIRE AFTER IMPACT VS INJURY INDEX

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
FIRE AFTER IMPACT						
YES	208	41	40	44	333	332
UNKNOWN/NOT REPORTED						
RECORDS	208	41	40	44	333	
ACCIDENTS	207	41	40	44		332
PERCENT	62.5	12.3	12.0	13.2		

ANALYTIC TABLE

TYPE OF WEATHER VS INJURY INDEX

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
VFR	507	372	604	2874	4357	4357
IFR	116	76	27	44	213	213
BELOW MINIMUMS	19	8	4	4	35	35
UNKNOWN/NOT REPORTED	19	3	5	16	43	43

ANALYTIC TABLE

TYPE OF FLIGHT PLAN VS INJURY INDEX

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
NONE	533	340	545	2513	3931	3931
VFR	81	48	80	357	566	566
IFR	51	73	17	67	158	158
CONTROLLED VFR		1			1	1
IFR				1	1	1
TOWER EN ROUTE CONTROL SERVICE						
OVFR				6	6	6
VFR FLIGHT FOLLOWING SERVICE						
SPECIAL VFR	6		1	3	10	10
OTHER	1				1	1
UNKNOWN/NOT REPORTED	6	2	4	10	22	22

GENERAL AVIATION ACCIDENTS

SMALL FIXED-WING AIRCRAFT

ANALYTIC TABLE

TYPE OF ACCIDENT VS AIRCRAFT DAMAGE
SMALL FIXED WING

	<div>DESTROYED</div> <div>SUBSTANTIAL</div> <div>MINOR</div> <div>NONE</div>				RECORDS	ACCIDENTS
GROUND-WATER LOOP-SWERVE	15	602			617	617
DAGGED WINGTIP POD OR FLOAT		5			5	5
WHEELS-UP LANDING		136			136	136
WHEELS-DOWN LANDING IN WATER		1			1	1
GEAR COLLAPSED	2	95			97	97
GEAR RETRACTED	2	68			70	70
HARD LANDING	15	315	1		331	331
NOSE OVER/DOWN	2	150	1		153	153
ROLL OVER						
OVERSHOOT	15	207			222	222
UNDER SHOOT	16	121	1		138	138
COLLISION BETWEEN AIRCRAFT						
BOTH IN FLIGHT	32	22	4		58	31
ONE AIRBORNE		8			8	4
BOTH ON GROUND		21	5	1	27	14
COLLISION WITH GROUND/WATER						
CONTROLLED	94	52			146	146
UNCONTROLLED	141	30			171	171
COLLIDED WITH						
WIRE /POLES	55	68			123	123
TREE	85	59			144	144

ANALYTIC TABLE

TYPE OF ACCIDENT VS AIRCRAFT DAMAGE
SMALL FIXED WING
(CONTINUED)

	<div>DESTROYED</div> <div>SUBSTANTIAL</div> <div>MINOR</div> <div>NONE</div>				RECORDS	ACCIDENTS
RESIDENCE/S	1	2			3	3
BUILDING/S		5			5	5
FENCE, FENCEPOSTS	3	53			56	56
ELECTRONIC TOWERS	6				6	6
RUNWAY OR APPROACH LIGHTS		3			3	3
AIRPORT HAZARD		15			15	15
ANIMALS		8			8	8
CROP	1	12			13	13
FLAGMAN LOADER				2	2	2
DITCHES		34	1		35	35
SNOWBANK		24			24	24
PARKED AIRCRAFT	1	22			23	23
AUTOMOBILE	1	17	1		19	19
DIRT BANK	1	19			20	20
OBJECT	8	112	1	1	122	122
BIRD STRIKE						
STALL	122	128			250	250
SPIN	62	5			67	67
SPIRAL	9	5			14	14
MUSH	24	85			109	109
FIRE OR EXPLOSION						

ANALYTIC TABLE

TYPE OF ACCIDENT VS AIRCRAFT DAMAGE
SMALL FIXED WING
(CONTINUED)

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS
IN FLIGHT	8	6			14	14
ON GROUND	2	3			5	5
AIRFRAME FAILURE						
IN FLIGHT	38	8			46	46
ON GROUND		2			2	2
ENGINE TEARAWAY						
ENGINE FAILURE OR MALFUNCTION	181	762			943	943
PROPELLER/ROTOR FAILURE						
PROPELLER	4	19			23	23
TAIL ROTOR						
MAIN ROTOR						
PROP ROTOR ACNT TO PERSON			8	14	22	22
JET INTAKE/EXH ACNT TO PERS						
PROPELLER/JET/ROTOR BLAST		7			7	7
TURB LENCE	2	12			14	14
HAIL DAMAGE TO AIRCRAFT						
LIGHTNING STRIKE						
EVASIVE MANEUVER	1	1			2	2
UNCONTROLLED ALT DEVIATION						
DITCHING	1	2			3	3
MISSING ACFT NOT RECOVERED	10				10	10
MISCELLANEOUS/OTHER	2	10		2	14	14
UNDETERMINED	3	3			6	6

ANALYTIC TABLE

PHASE OF OPERATION VS INJURY INDEX
SMALL FIXED WING

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
STATIC						
STARTING ENGINE/S	2	4		4	10	10
IDLING ENGINE/S	5	8		7	20	20
ENGINE RUNUP		1		1	2	2
IDLING ROTORS						
PARKED-ENGINES NOT OPERATING						
OTHER						
TAXI						
TO TAKEOFF	1	1	5	53	60	57
FROM LANDING	1	1	5	74	81	80
OTHER	1	2	4	25	32	32
GROUND TAXI TO TAKEOFF				1	1	1
GROUND TAXI FROM LANDING				2	2	2
GROUND TAXI, OTHER				1	1	1
AERIAL TAXI TO TAKEOFF						
AERIAL TAXI TO/FROM LANDING						
AERIAL TAXI, OTHER						
TAKEOFF						
RUN	4	5	25	216	250	250
INITIAL CLIMB	55	66	107	268	496	496
VERTICAL						

ANALYTIC TABLE

 PHASE OF OPERATION VS INJURY INDEX
 SMALL FIXED WING
 (CONTINUED)

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
RUNNING				1	1	1
ABORTED	4	15	67		86	86
ABORTED						
ABORTED						
OTHER	1	1		3	5	5
INFLIGHT						
CLIMB TO CRUISE	10	3	8	10	31	31
NORMAL CRUISE	105	51	100	255	511	509
DESCENDING	8	7	9	20	44	44
HOLDING						
HOVERING						
POWER-ON DESCENT						
AUTOROTATIVE DESCENT						
ACROBATICS	27	2	2	6	37	37
BUZZING	9	3	3	4	19	19
UNCONTROLLED DESCENT	112	5	2	5	124	124
EMERGENCY DESCENT		1		1	2	2
LOW PASS	24	18	15	19	76	76
OTHER	128	29	22	42	221	219
ENROUTE TO TREAT CROP	1	2	1	3	7	7
ENROUTE TO RELOADING AREA	2			2	4	4

ANALYTIC TABLE

PHASE OF OPERATION VS INJURY INDEX
SMALL FIXED WING
(CONTINUED)

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
SURVEY FIELD/AREA			1	2	3	3
STARTING SWATH RUN	2	2	2	19	25	25
SWATH RUN	8	6	8	36	58	58
FLAREOUT FOR SWATH RUN				1	1	1
PULLUP FROM SWATH RUN	3	8	5	10	26	26
PROCEDURE TURNAROUND	12	12	13	34	71	71
CLEANUP SWATH	1		1	3	5	5
MANEUVER TO AVOID OBSTRUCTION			1		1	1
RETURN TO STRIP			1	8	9	9
LANDING				1	1	1
TRAFFIC PATTERN-CIRCLING	18	17	15	28	78	75
FINAL APPROACH	32	44	52	146	274	267
INITIAL APPROACH	5	1	4	3	13	13
FINAL APPROACH	11	7	4	4	26	26
LEVEL OFF/TOUCHDOWN	10	29	75	712	826	826
ROLL	4	11	59	585	659	657
ROLL-ON/RUN-ON						
POWER-ON LANDING				1	1	1
POWER-OFF AUTOMATIC LANDING						
GO-AROUND	10	13	29	52	104	104
MISSED APPROACH	3		1		4	4
OTHER	2	6	6	7	21	21
UNKNOWN/NOT REPORTED	16	2		5	23	23

CAUSE/FACTOR TABLE

SMALL PLANE WING

INVOLVES 4243 TOTAL ACCIDENTS
INVOLVES 605 FATAL ACCIDENTS

BROAD CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
PILOT	541 89.42	115 19.01	545 90.08	3015 82.88	196 5.39	3030 83.29	3556 83.81	311 7.33	3575 84.26
PERSONNEL	51 8.43	20 3.31	69 11.40	242 6.65	59 1.62	294 8.08	293 6.91	79 1.86	363 8.56
AIRFRAME	16 2.64	3 .50	19 3.14	22 .60	6 .16	28 .77	38 .90	9 .21	47 1.11
LANDING GEAR	1 .17	1 .17	2 .33	166 4.56	48 1.32	212 5.83	167 3.94	49 1.15	214 5.04
POWERPLANT	39 6.45	6 .99	44 7.27	442 12.15	26 .71	468 12.86	481 11.34	32 .75	512 12.07
SYSTEMS	3 .50	3 .50	6 .99	25 .69	10 .27	35 .96	28 .66	13 .31	41 .97
INSTRUMENTS/EQUIPMENT AND ACCESSORIES	.00	3 .50	3 .50	2 .05	8 .22	10 .27	2 .05	11 .26	13 .31
ROTORCRAFT	.00	.00	.00	1 .03	.00	1 .03	1 .02	.00	1 .02
AIRPORTS/AIRWAYS/FACILITIES	.00	5 .83	5 .83	142 3.90	248 6.82	381 10.47	142 3.35	253 5.96	386 9.10
WEATHER	29 4.79	217 35.87	240 39.67	288 7.92	401 11.02	667 18.33	317 7.47	618 14.57	907 21.38
TERRAIN	30 4.96	66 10.91	96 15.87	593 16.30	383 10.53	968 26.61	623 14.68	449 10.58	1064 25.08
MISCELLANEOUS	9 1.49	1 .17	10 1.65	141 3.88	21 .58	161 4.43	150 3.54	22 .52	171 4.03
UNDETERMINED	26 4.30	.00	26 4.30	25 .69	.00	25 .69	51 1.20	.00	51 1.20

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

INVOLVES 4243 TOTAL ACCIDENTS
INVOLVES 605 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	14	4	18	29	6	35	43	10	53
ATTEMPTED OPERATION BEYOND EXPERIENCE/ABILITY LEVEL	28	2	30	49	4	53	77	6	83
BECAME LOST/DISORIENTED	5	4	9	42	12	54	47	16	63
CONTINUED VFR FLIGHT INTO ADVERSE WEATHER CONDITIONS	137	1	138	73		73	210	1	211
CONTINUED INTO KNOWN AREA OF SEVERE TURBULENCE	3		3	1		1	4		4
DELAYED ACTION IN ABORTING TAKEOFF				46		46	46		46
DELAYED IN INITIATING GO-AROUND	5	1	6	54	3	57	59	4	63
DIVERTED ATTENTION FROM OPERATION OF AIRCRAFT	4	9	13	67	16	83	71	25	96
EXCEEDED DESIGN STRESS LIMITS OF AIRCRAFT	17		17	2		2	19		19
FAILED TO EXTEND LANDING GEAR				61	1	62	61	1	62
RETRACTED GEAR PREMATURELY				9		9	9		9
INADVERTENTLY RETRACTED GEAR				18	1	19	18	1	19
FAILED TO SEE AND AVOID OTHER AIRCRAFT	23		23	35	1	36	58	1	59
FAILED TO SEE AND AVOID OBJECTS OR OBSTRUCTIONS	21		21	121		121	142		142
FAILED TO OBTAIN/MAINTAIN FLYING SPEED	148		148	363		363	511		511
MISJUDGED, SPEED, ALTITUDE OR CLEARANCE				1		1	1		1
FAILED TO MAINTAIN ADEQUATE ROTOR RPM				2		2	2		2
FAILED TO USE OR INCORRECTLY USED MISC EQUIPMENT	1		1	6	1	7	7	1	8
FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES ETC	14	6	20	68	13	81	82	19	101
IMPROPER OPERATION OF POWERPLANT + POWERPLANT CONTROLS	3	3	6	130	2	132	133	5	138
IMPROPER OPERATION OF BRAKES AND/OR FLIGHT CONTROLS				90		90	91		91
IMPROPER OPERATION OF FLIGHT CONTROLS	14	1	15	28	2	30	42	3	45
PREMATURE LIFT OFF	1		1	66		66	67		67
IMPROPER LEVEL OFF	2		2	314	1	315	316	1	317
IMPROPER IFR OPERATION	15		15	10	1	11	25	1	26
IMPROPER IN-FLIGHT DECISIONS OR PLANNING	30	2	32	39	6	45	69	8	77
IMPROPER COMPENSATION FOR WIND CONDITIONS				75	4	79	75	4	79
INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING	51	47	98	421	29	450	472	76	548
INADEQUATE SUPERVISION OF FLIGHT	10	1	11	96	1	97	106	2	108
LACK OF FAMILIARITY WITH AIRCRAFT	4	16	20	32	45	77	36	61	97
MISMANAGEMENT OF FUEL	22		22	251	1	252	273	1	274
EXERCISED POOR JUDGMENT	32	6	38	178	5	183	210	11	221
OPERATED CARELESSLY	1		1	3		3	4		4
SELECTED UNSUITABLE TERRAIN	4		4	217	4	221	221	4	225
IMPROPER STARTING PROCEDURES				7		7	7		7
STARTED ENGINE WITHOUT PROPER ASSISTANCE/EQUIPMENT	2		2	20		20	22		22
TAXIED/PARKED WITHOUT PROPER ASSISTANCE				13	2	15	13	2	15
FAILED TO ASSURE THE GEAR WAS DOWN AND LOCKED				50		50	50		50
INITIATED FLIGHT IN ADVERSE WEATHER CONDITIONS	18		18	12		12	30		30
SPONTANEOUS-IMPROPER ACTION	1		1	21		21	22		22
MISJUDGED DISTANCE, SPEED, AND ALTITUDE	1		1	19		19	20		20
MISJUDGED DISTANCE AND SPEED	6		6	223	4	227	229	4	233
MISJUDGED DISTANCE				5		5	5		5
MISJUDGED DISTANCE AND ALTITUDE	11		11	103	2	105	114	2	116
MISJUDGED SPEED AND ALTITUDE				32		32	32		32
MISJUDGED SPEED				17	4	21	17	4	21
MISJUDGED SPEED AND CLEARANCE	2		2	7		7	9		9
MISJUDGED ALTITUDE AND CLEARANCE	4		4	10		10	14		14
MISJUDGED ALTITUDE	19	1	20	19	1	20	38	2	40
MISJUDGED CLEARANCE	20		20	78		78	98		98
INADEQUATE TRAINING OF STUDENT				2		2	2		2
MISUNDERSTANDING OF ORDERS OR INSTRUCTIONS				2	2	4	2	2	4
IMPROPER RECOVERY FROM BOUNCED LANDING	1		1	188		188	189		189
INCAPACITATION	8		8				8		8
PHYSICAL IMPAIRMENT	34	21	55	5	2	7	39	23	62
SPATIAL DISORIENTATION	107	1	108	15		15	122	1	123
PSYCHOLOGICAL CONDITION	1	1	2	2	1	3	3		5
MISUSED OR FAILED TO USE FLAPS	2	1	3	38	17	55	40	18	58
FAILED TO MAINTAIN DIRECTIONAL CONTROL				384	1	385	384	1	385
SELECTED WRONG RUNWAY RELATIVE TO EXISTING WIND	2	1	3	39	2	41	41	3	44
FAILED TO ABORT TAKEOFF	1		1	46	1	47	47	1	48
FAILED TO INITIATE GO-AROUND	2		2	88	12	100	90	12	102
DIRECT ENTRIES				2		2	2		2

CAUSE/FACTOR TABLE

PILOT IN COMMAND (CONTINUED)

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
S TOTAL	852	129	981	4444	210	4654	5296	339	5635
COPILC									
FAILED TO EXTEND LANDING GEAR				1		1	1		1
FAILED TO OBTAIN/MAINTAIN FLYING SPEED				1		1	1		1
FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES, ETC	1		1	1		1	2		2
CONTROL INTERFERENCE				1		1	1		1
MISJUDGED ALTITUDE	1		1				1		1
PHYSICAL IMPAIRMENT		1	1					1	1
FAILED TO MAINTAIN DIRECTIONAL CONTROL				3		3	3		3
S TOTAL	2	1	3	7		7	9	1	10
DUAL STUDENT									
CONTINUED VFR FLIGHT INTO ADVERSE WEATHER CONDITIONS	1		1				1		1
DELAYED IN INITIATING GO-AROUND				2		2	2		2
INADEQUATELY RETRACTED GEAR				3		3	3		3
FAILED TO SEE OTHER AIRCRAFT				1		1	1		1
FAILED TO SEE AND AVOID OBJECTS OR OBSTRUCTIONS	1		1				1		1
FAILED TO OBTAIN/MAINTAIN FLYING SPEED	4		4	11		11	15		15
MISJUDGED DISTANCE, SPEED, ALTITUDE OR CLEARANCE	1		1				2		2
FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES, ETC	1		1	1		1	2		2
IMPROPER OPERATION OF POWERPLANT + POWERPLANT CONTROLS				6		6	6		6
IMPROPER OPERATION OF BRAKES AND/OR FLIGHT CONTROLS				8		8	8		8
IMPROPER OPERATION OF FLIGHT CONTROLS	2		2	4		4	6		6
PREMATURE LIFT-OFF				2		2	2		2
IMPROPER LEVEL OFF				13		13	13		13
IMPROPER IN-FLIGHT DECISIONS OR PLANNING				2		2	2		2
IMPROPER COMPENSATION FOR WIND CONDITIONS				3		3	3		3
INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING				4		4	4		4
LACK OF FAMILIARITY WITH AIRCRAFT				7	1	7	7	1	7
MISMANAGEMENT OF FUEL				2		2	2		2
FAILED TO ASSURE THE GEAR WAS DOWN AND LOCKED				2		2	2		2
FAILURE TO RELINQUISH CONTROL				2		2	2		2
CONTROL INTERFERENCE					1	1	1	1	1
SPONTANEOUS-IMPROPER ACTION	1		1				1		1
MISJUDGED DISTANCE AND SPEED				1		1	1		1
MISJUDGED DISTANCE AND ALTITUDE				7		7	7		7
MISJUDGED SPEED AND ALTITUDE				5		5	5		5
MISJUDGED CLEARANCE	1		1				1		1
MISUNDERSTANDING OF ORDERS OR INSTRUCTIONS				2		2	2		2
IMPROPER RECOVERY FROM BOUNCED LANDING				5		5	5		5
INCAPACITATION				1		1	1		1
MISSED OR FAILED TO USE FLAPS				1		1	1		1
FAILED TO MAINTAIN DIRECTIONAL CONTROL				16		16	16		16
SELECTED WRONG RUNWAY RELATIVE TO EXISTING WIND	1		1				1		1
FAILED TO INITIATE GO-AROUND				1		1	1		1
UBTOTAL	13		13	110	2	112	123	2	125
** PERSONNEL **									
FLIGHT INSTRUCTOR									
INADEQUATE SUPERVISION OF FLIGHT	2	2	4	16	9	25	18	11	29
INADEQUATE TRAINING OF STUDENT				10	4	14	10	4	14
MAINTENANCE, SERVICING, INSPECTION									
IMPROPER MAINTENANCE (MAINTENANCE PERSONNEL)	2	1	3	16		16	18	1	19
IMPROPER MAINTENANCE (OWNER PERSONNEL)				1		1	1		1
IMPROPERLY SERVICED AIRCRAFT (GROUND CREW)	1		1	3	2	5	4	2	6
IMPROPERLY SERVICED AIRCRAFT (OWNER-PILOT)				1		1	1		1
INADEQUATE INSPECTION OF ACFT (OWNER-PILOT PERSONNEL)				3		3	3		3
INADEQUATE MAINTENANCE AND INSPECTION	12	1	13	102	17	119	114	18	132
OTHER				3	2	5	3	2	5
OPERATIONAL SUPERVISORY PERSONNEL									
INADEQUATE FLIGHT TRAINING-PROCEDURES		1	1					1	1
INADEQUATE SUPERVISION OF FLIGHT CREW		2	2	1	1	2	1	3	4
FAILURE TO PROVIDE ADEQ DIRECTIVES, MANUALS, EQUIPMENT				1		1	1		1
DEFICIENCY, COMPANY MAINTAINED EGMT, SERV, REGULATIONS	1		1	1	1	2	2	1	3
WEATHER PERSONNEL									
INCORRECT WEATHER FORECAST		4	4		2	2		6	6
INADEQUATE/INCORRECT WEATHER BRIEFING	1		1				1		1

CAUSE/FACTOR TABLE

PERSONNEL (CONTINUED)

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
TRAFFIC CONTROL PERSONNEL									
FAILURE OR DELAY IN INITIATING EMERGENCY PROCEDURES					2	2		2	2
FAILURE TO ADVISE OF UNSAFE AIRPORT CONDITION					2	2		2	2
ISSUED IMPROPER OR CONFLICTING INSTRUCTIONS				1	1	2	1	1	2
OTHER	2	3	5	1	1	2	3	4	7
AIRPORT SUPERVISORY PERSONNEL									
IMPROPER MAINTENANCE-AIRPORT FACILITIES				3	1	4	3	1	4
FAILURE TO NOTIFY OF UNSAFE CONDITION				6	3	9	6	3	9
IMPROPER/INADEQUATE SNOW REMOVAL				3		3	3		3
IMPROPER OPERATION OF FACILITIES				1		1	1		1
OTHER				1	2	3	1	2	3
AIRWAYS FACILITIES PERSONNEL									
PRODUCTION-DESIGN-PERSONNEL									
SUBSTANDARD QUALITY CONTROL	1		1	1	1	2	2	1	3
INCORRECT FACTORY INSTALLATION				1		1	1		1
POOR/INADEQUATE DESIGN	1	1	2	4		4	5	1	6
OTHER	3		3	5		5	8		8
MISCELLANEOUS-PERSONNEL									
PILOT OF OTHER AIRCRAFT	24	2	26	42	4	46	66	6	72
GROUND, SIGNALMAN				1		1	1		1
SPECTATOR				2		2	2		2
GROUND CREWMAN	2		2				2		2
PASSENGER	7	1	8	13	5	18	20	6	26
DRIVER OF VEHICLE	2	1	3	7	3	10	9	4	13
OTHER	1	1	2	5	1	6	6	2	8
THIRD PILOT									
FLIGHT ENGINEER									
DISPATCHING									
SUBTOTAL	62	20	82	255	64	319	317	84	401
** AIRFRAME **									
WINGS									
SPARS	3		3				3		3
RIBS, STRINGERS, CAP STRIPS	2		2	1		1	3		3
WING ATTACHMENT FITTINGS, BOLTS	2		2	1		1	3		3
BRACING WIRES, STRUTS	2		2	1		1	3		3
SKIN AND ATTACHMENTS	2		2	3		3	5		5
WINGTIPS	1		1				1		1
OTHER	1		1				1		1
FUSELAGE									
SKIN AND ATTACHMENTS				1		1	1		1
DOORS, DOOR FRAMES				2	3	5	2	3	5
WINDSHIELDS, WINDOWS, CANOPIES		1	1					1	1
SEATS				5	1	6	5	1	6
OTHER	1	1	2	2		2	3	1	4
LANDING GEAR									
MAIN GEAR-SHOCK ABSORBING ASSY, STRUTS, ATTACHMENTS, ETC				26		26	26		26
NORMAL RETRACTION/EXTENSION ASSEMBLY				43	6	49	43	7	50
EMERGENCY/EXTENSION ASSEMBLY		1	1	10		10	10		10
TAILWHEEL ASSEMBLIES				6	4	10	7	4	11
NOSEWHEEL ASSEMBLIES	1		1	21	1	22	21	1	22
WHEELS, TIRES, AXLES				29	3	32	29	3	32
SKI ASSEMBLIES				1		1	1		1
BRAKING SYSTEM (NORMAL)				29	16	45	29	16	45
BRAKING SYSTEM (EMERGENCY)				1		1	1		1
LANDING GEAR WARNING AND INDICATING COMPONENTS					16	16		16	16
GEAR LOCKING MECHANISM				7		7	7		7
SWITCHES, LEVERS, CRANKING MECHANISM, ETC				2	2	4	2	2	4
NOSEWHEEL STEERING				4	1	5	4	1	5
OTHER				1	1	2	1	1	2
FLIGHT CONTROL SURFACES									
ELEVATOR, ASSEMBLY ATTACHMENTS	1		1	1		1	2		2
RUDDER, SURFACES ATTACHMENTS		1	1	2		2	2	1	3
AILERON, SURFACES ATTACHMENTS				2		2	2		2
HORIZONTAL STABILIZER, ATTACHMENTS	1	1	2	1		1	2	1	3
VERTICAL STABILIZER, ATTACHMENTS	2	1	3	2		2	4	1	5
FLAP ASSEMBLIES				2		2	2		2
OTHER	2		2		1	1	2	1	3

AIRFRAME (CONTINUED)

CAUSE/FACTOR TABLE

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
SUBTOTAL	21	6	27	206	56	262	227	62	289
** POWERPLANT **									
ENGINE STRUCTURE									
CRANK CASE				2		2	2		2
CRANK SHAFT	1		1	18		18	19		19
MAST R AND CONNECTING RODS	2		2	31		31	33		33
CYLINDER ASSEMBLY	2	1	3	12		12	14	1	15
PISTON, PISTON RINGS	1		1	10		10	11		11
VALVE ASSEMBLIES	2	1	3	18		18	20	1	21
FLOW R, IMPELLER ASSEMBLY				5		5	5		5
OTHER	3		3	7		7	10		10
IGNITION SYSTEM									
MAGNETOES	2		2	7		7	9		9
SPARK PLUG	2		2	5		5	7		7
SWITCHES				1		1	1		1
LEADS				2		2	2		2
FUEL SYSTEM									
TANK		1	1	1		1	1	1	2
LINE AND FITTINGS	1		1	10		10	11		11
SELECTOR VALVES		1	1	1	1	2	1	2	3
CROSSFEED VALVES					1	1		1	1
FILTERS, STRAINERS, SCREENS				5	1	6	5	1	6
PRIMING SYSTEM					1	1		1	1
CARBURETOR				20	1	21	20	1	21
PUMP	2		2	5		5	7		7
FUEL INJECTION SYSTEM				4		4	4		4
VENTS, DRAINS, TANK CAPS				7	2	9	7	2	9
RAM AIR ASSEMBLY				5		5	5		5
OTHER	1		1	9		9	10		10
LUBRICATING SYSTEM									
TANK				1		1	1		1
LINE, HOSES, FITTINGS				14		14	14		14
FILTERS, SCREENS		1	1	3		3	3	1	4
PUMP-PRESSURE				3		3	3		3
OIL COOLERS				1		1	1		1
SEALS AND GASKETS				2		2	2		2
OTHER	2		2	8		8	10		10
COOLING SYSTEM									
PROPELLER AND ACCESSORIES									
BLADES	1		1	11		11	12		12
HUB				1		1	1		1
HYDRAULIC PITCH CONTROL MECHANISM				2		2	2		2
COUNTERWEIGHT				1		1	1		1
SPINNERS, DOMES				3		3	3		3
GOVERNORS				1		1	1		1
BLADE RETENTION MECHANISM				2		2	2		2
OTHER				3		3	3		3
EXHAUST SYSTEM									
MANIFOLDS	1		1				1		1
MUFFLERS				2		2	2		2
STACKS				2	1	3	2	1	3
BAFFLES				1		1	1		1
EXTERNAL SUPERCHARGER				1		1	1		1
OTHER				1		1	1		1
ENGINE ACCESSORIES									
VACUUM PUMPS		1	1	1		1	1	1	2
STARTERS					1	1		1	1
ENGINE CONTROLS-COCKPIT									
THRUSTLE-POWER LEVER ASSEMBLIES				11	2	13	11	2	13
MIXTURE CONTROL ASSEMBLIES				7	1	8	7	1	8
INDUCTION AIR, PREHEAT CONTROLS				1		1	1		1
PROPELLER GOVERNOR CONTROLS				1		1	1		1
POWER PLANT-INSTRUMENTS									
FUEL QUANTITY GAUGE					13	13		13	13
OTHER					1	1		1	1
MISCELLANEOUS									
POWERPLANT FAILURE FOR UNDETERMINED REASONS	17		17	186		186	203		203
OTHER				3		3	3		3
DIRTY ENTRIES				1		1	1		1
REDUCTION GEAR ASSEMBLY									
SHAFT, ACCESSORY DRIVE				1		1	1		1

CAUSE/FACTOR TABLE

POWERPLANT (CONTINUED)

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
GEARS, ACCESSORY DRIVE				2		2	2		2
OTHER				1		1	1		1
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	40	6	46	463	26	489	503	32	535
** SYSTEMS **									
ELECTRICAL SYSTEM									
BATTERIES				3	2	5	3	2	5
GENERATORS/ALTERNATORS				3	3	6	3	3	6
REGULATOR				3		3	3		3
RELAYS AND WIRING				1		1	1		1
MOTORS				2	2	4	2	2	4
SWITCHES				1		1	1		1
PROTECTIVE DEVICES					3	3		3	3
OTHER				2	1	3	2	1	3
HYDRAULIC SYSTEM									
RESERVOIR, LINES, FITTINGS				2		2	2		2
SEALS				1		1	1		1
OTHER		1	1	1		1	1	1	2
FLIGHT CONTROL SYSTEMS									
AILERON AND AILERON TAB CONTROL SYSTEM				2		2	2		2
ELEVATOR AND ELEVATOR TAB CONTROL SYSTEM				1		1	1		1
RUDDER AND RUDDER TAB CONTROL SYSTEM	1		1	1		1	2		2
WING FLAP CONTROL SYSTEM (ELECTRICAL)				1		1	1		1
FLIGHT CONTROL GUST LOCK SYSTEM		1	1					1	1
OTHER	1		1	1	1	2	2	1	3
ANTI-ICING, DE-ICING SYSTEMS									
CARBURETOR DE-ICING SYSTEM				1		1	1		1
AIR CONDITION, HEATING AND PRESSURIZATION									
OTHER	1		1		1	1	1	1	2
AUTO PILOT									
FIRE WARNING SYSTEM									
FIRE EXTINGUISHER SYSTEM									
OXYGEN SYSTEM									
OTHER SYSTEMS									
OTHER		1	1	1		1	1	1	2
SUBTOTAL	3	3	6	27	13	40	30	16	46
** INSTRUMENTS/EQUIPMENT AND ACCESSORIES **									
FLIGHT AND NAVIGATION INSTRUMENTS									
ALTIMETERS					1	1		1	1
AIRSPEED				1	2	3	1	2	3
ATTITUDE GYRO		2	2		1	1		3	3
DIRECTIONAL GYRO					2	2		2	2
COMMUNICATIONS AND NAVIGATION EQUIPMENT									
VOR RECEIVERS					1	1		1	1
MISCELLANEOUS EQUIPMENT									
SPRAY, DUSTING EQUIPMENT		1	1	1	2	3	1	3	4

CAUSE/FACTOR TABLE

INSTRUMENTS/EQUIPMENT AND ACCESSORIES (CONTINUED)

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
SUBTOTAL		3	3	2	9	11	2	12	14
** ROORCRAFT **									
ROTOR ASSEMBLIES									
TRANSMISSION ROTOR DRIVE SYSTEM									
FLIGHT CONTROL SYSTEMS									
COLLECTIVE PITCH CONTROL SYSTEM				1		1	1		1
MISCELLANEOUS UNITS AND ASSEMBLIES									
SUBTOTAL				1		1	1		1
** AIRPORTS/AIRWAYS/FACILITIES **									
AIRPORT FACILITIES									
RUNWAY LIGHTING					5	5		5	5
OBSTRUCTION LIGHTING				1	2	3	1	2	3
OTHER					2	2		2	2
AIRPORT CONDITIONS									
WET RUNWAY	1	1	1	6	43	49	6	44	50
ICE/SLUSH ON RUNWAY				9	26	35	9	26	35
SNOW ON RUNWAY				18	38	56	18	38	56
SNOW WINDROWS				26	19	45	26	19	45
UNMARKED OBSTRUCTIONS	1	1	1	3	2	5	3	3	6
SOFT SHOULDERS (RUNWAY)				5	5	10	5	5	10
GLASSY WATER					1	1		1	1
ROUGH WATER					1	1		1	1
HIGH VEGETATION				9	16	25	9	16	25
HIDDEN HAZARD				16	6	22	16	6	22
POORLY MAINTAINED RUNWAY SURFACE				3	8	11	3	8	11
SOFT RUNWAY				5	17	22	5	17	22
WET RAMP/TAXIWAY					2	2		2	2
ICE/SLUSH ON RAMP/TAXIWAY				1	2	3	1	2	3
SNOW ON RAMP/TAXIWAY				2	1	3	2	1	3
SOFT SHOULDERS (RAMP/TAXIWAY)				2		2	2		2
POORLY MAINTAINED RAMP/TAXIWAY SURFACE				1		1	1		1
OTHER	4	4	4	50	77	127	50	81	131
AIRWAYS FACILITIES									
SUBTOTAL		6	6	157	273	430	157	279	436
** WEATHER **									
LOW CEILING	13	141	154	7	47	54	20	188	208
RAIN	1	69	70	4	24	28	5	93	98
FOG	8	88	96	6	53	59	14	141	155
SNOW	3	26	29	7	26	33	10	52	62
HAIL				1		1	1		1
ICING CONDITIONS—INCLUDES SLEET, FREEZING RAIN, ETC	6	11	17	11	11	22	17	22	39
CONDITIONS CONDUCTIVE TO CARB/INDUCTION SYSTEM ICING	1	2	3	61	7	68	62	9	71
UNF/DRABLE WIND CONDITIONS	2	9	11	156	147	303	158	156	314
SUDDEN WINDSHIFT				10	10	20	10	10	20
TURBULENCE IN FLIGHT, CLEAR AIR		4	4	2	2	4	2	6	8
TURBULENCE ASSOCIATED WITH CLOUDS AND/OR THUNDERSTORMS	3	18	21	2	4	6	5	22	27
DOWNDRAFTS, UPDRAFTS	2	10	12	13	41	54	15	51	66
LOCAL WHIRLWIND				7	1	8	7	1	8
SQUALL LINE				1		1	1		1
ADVERSE WINDS ALOFT					3	3		3	3
HIGH TEMPERATURE		5	5	2	19	21	2	24	26
OBSTRUCTIONS TO VISION	1	9	10	3	10	13	4	19	23
HIGH DENSITY ALTITUDE		15	15	7	65	72	7	80	87
THUNDERSTORM ACTIVITY	2	22	24	6	17	23	8	39	47
OTHER	1	7	8	5	7	12	6	14	20
SUBTOTAL	43	436	479	311	494	805	354	930	1284
** TERRAIN **									
WET, SOFT GROUND		1	1	77	33	110	77	34	111
SNOW-COVERED		2	2	21	19	40	21	21	42
ICY				1		1	1		1
HIGH VEGETATION	1	1	1	37	19	56	37	20	57
HIDDEN OBSTRUCTIONS				24	7	31	24	7	31

CAUSE/FACTOR TABLE

TERRAIN (CONTINUED)

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
ROUGH/UNEVEN	2	1	3	204	64	268	206	65	271
ROUGH WATER	1	1	2	2	2	4	3	3	6
GLASSY WATER					3	3		3	3
HIGH OBSTRUCTIONS	23	51	74	163	190	353	186	241	427
LOOSE GRAVEL					2	2		2	2
SANDY				9	1	10	9	1	10
OTHER	4	10	14	76	69	145	80	79	159
SUBTOTAL	30	67	97	614	409	1023	644	476	1120
** MISCELLANEOUS **									
BIRD COLLISION					1	1		1	1
VORTEX TURBULENCE	3		3	9	9	9	12		12
PROP/JET/ROTOR BLAST				6	1	7	5	1	7
ANIMAL(S) ON RUNWAY/TAXIWAY/RAMP				8	1	9	8	1	9
EVASIVE MANEUVER TO AVOID COLLISION	3	1	4	68	17	85	71	18	89
UNQUALIFIED PERSON OPERATED AIRCRAFT				5		5	5		5
FOREIGN OBJECT DAMAGE				3		3	3		3
SMOKE IN COCKPIT	1		1	4		4	5		5
FOREIGN MATERIAL AFFECTING NORMAL OPERATIONS	1		1	40	1	41	41	1	42
UNDETERMINED	26		26	25		25	51		51
DIRECT ENTRIES	2		2				2		2
SUBTOTAL	36	1	37	168	21	189	204	22	226
GRAND TOTAL	1102	678	1780	6765	1577	8342	7867	2255	10122
** MISCELLANEOUS ACTS, CONDITIONS **									
ALTITUDE SETTING-INCORRECT		1	1	1	1	2	1	2	3
ANTI-ICING/DEICING EQUIP-IMPROPER OPER. OF/FAILED TO USE	1	1	2	64		64	65	1	66
CHECKLIST-FAILED TO USE		2	2	13	35	48	13	37	50
DISREGARD OF GOOD OPERATING PRACTICE		2	2	2	5	7	2	7	9
IMPROPER EMERGENCY PROCEDURES	4	6	10	22	5	27	26	11	37
FEATHERED WRONG ENGINE	1		1				1		1
GUST LOCKS ENGAGED	2		2	1		1	3		3
INSTRUMENTS-MISREAD OR FAILED TO READ	3		3	1		1	4		4
SEAT BELT NOT FASTENED		1	1					1	1
NOT ALLIGNED WITH RUNWAY/INTENDED LANDING AREA				22	13	35	22	13	35
UNWARRANTED LOW FLYING	27	11	38	20	13	33	47	24	71
FAILED TO USE ALL AVAILABLE RUNWAY				13	5	18	13	5	18
LANDED AT WRONG AIRPORT					3	3		3	3
INATTENTIVE TO FUEL SUPPLY	3		3	26		26	29		29
FLEW INTO BLIND CANYON	4	2	6	4	1	5	8	3	11
PREMATURE FLAP RETRACTION				1		1	1		1
POORLY PLANNED APPROACH		6	6	4	28	32	4	34	38
MISCALCULATED FUEL CONSUMPTION	4		4	43	4	47	47	4	51
JETTISONED LOAD				1	24	25	1	24	25
STOLEN OR UNAUTHORIZED USE OF AIRCRAFT		7	7	1	17	18	1	24	25
LANDED ON FOAMED RUNWAY					6	6		6	6
IMPROPERLY SECURED				12	3	15	12	3	15
ELECTRICAL FAILURE		1	1	9	11	20	9	12	21
ENGINE LOADED UP	1		1	16	1	17	17	1	18
FATIGUE FRACTURE	8		8	31	1	32	39	1	40
FUEL GRADE-IMPROPER	1		1				1		1
IMPROPER GRADE OIL-LUBRICATING SYSTEM				1		1	1		1
RPM-UNCONTROLLABLE-OVERSPEED				1		1	1		1
WINDSHIELD, DIRTY, FOGGY, ETC-RESTRICTED VISION				2	6	8	2	6	8
IMPROPER ALIGNMENT/ADJUSTMENT		1	1	6	2	8	6	3	9
FAILURE OF TWO OR MORE ENGINES	3	4	7	5	12	17	8	16	24
SEPARATION IN FLIGHT	1	37	38		27	27	1	64	65
FIRE IN CABIN/ COCKPIT/ BAGGAGE COMPARTMENT	3		3	4		4	7		7
FIRE IN ENGINE	2		2	6	1	7	8	1	9
ASYMMETRICAL FLAPS				1		1	1		1
LATERAL IMBALANCE					2	2		2	2
CORRODED/CORROSION	2		2	11	1	12	13	1	14
INCORRECT TRIM SETTING	2		2	7	5	12	9	5	14
CARGO SHIFTED	1		1				1		1
CONGESTED TRAFFIC-PATTERN				1	4	5	1	4	5

CAUSE/FACTOR TABLE

MISCELLANEOUS ACTS, CONDITIONS (CONTINUED)

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
PILOT FATIGUE		12	12		18	18		30	30
FUEL EXHAUSTION	17		17	193		193	210		210
FUEL CONTAMINATION-EXCLUSIVE OF WATER IN FUEL				6		6	6		6
PILOT SUFFERED HEART ATTACK	4		4				4		4
ALCOHOLIC IMPAIRMENT OF EFFICIENCY AND JUDGMENT	31	17	48	2		2	33	17	50
ICE- IN FUEL				7		7	7		7
ICE- ARBURETOR	1		1	69		69	70		70
AIRFRAME ICE	7	3	10	22	3	25	29	6	35
ICE- IN SHIELD		1	1	3		3	3	1	4
IMPROPERLY LOADED AIRCRAFT-WEIGHT-AND/OR CG	5	7	12	12	12	24	17	19	36
INTERFERENCE WITH FLIGHT CONTROLS	1	1	2	7	1	8	8	2	10
WHITOUT				4	2	6	4	2	6
SUNG ARE	1	4	5	1	19	20	2	23	25
LACK OF LUBRICATION-SPECIFIC PART, NOT SYSTEM	1		1	12	1	13	13	1	14
OIL EXHAUSTION-ENGINE LUBRICATION SYSTEM				18		18	18		18
SIMULATED CONDITIONS	3	3	6	27	11	38	30	14	44
FUEL SIPHONING				2	1	3	2	1	3
WATER IN FUEL				28		28	28		28
AIRCRAFT CAME TO REST IN WATER		34	34		66	66		100	100
FROZEN, MOISTURE		1	1	1		1	1	1	2
MISSING	1		1	9	1	10	10	1	11
TOUCH AND GO LANDING		4	4		75	75		79	79
OVERLOAD FAILURE	24		24	23	580	603	47	581	628
WATER JAIL FAILURE	13	1	14	183	9	192	196	9	205
FUEL STARVATION	13		13	152		152	165		165
OIL STARVATION				8	1	9	8	1	9
IMPROPER CLEARANCE-TOLERANCE	1		1	4	4	8	5	4	9
FUEL SELECTOR POSITIONED BETWEEN TANKS	3		3	1		1	4		4
FIRE OF UNDETERMINED ORIGIN				2		2	2		2
UNAPPROVED MODIFICATION	1		1	3		3	4		4
IMPROPER/INADEQUATE VENTING				1		1	1		1
POOR WELD				1		1	1		1
PREVIOUS DAMAGE	2	1	3	32	12	45	35	13	48
LEAK LEAKAGE	1		1	14	1	15	15	1	16
LOW LIQUID LEVEL				2		2	2		2
CIRCUIT BREAKER POPPED				3	8	11	3	8	11
ARCING				2		2	2		2
LOW COMPRESSION				1	1	2	1	1	2
RUNWAY CLOSED					2	2		2	2
DOWN IND		6	6	1	105	106	1	111	112
CARBON DEPOSITS				2		2	2		2
LANDING IN CONSTRUCTION AREA				3	1	4	3	1	4
OVERTORQUED				1		1	1		1
UNDERTORQUED	1		1	1	1	2	1	1	3
LOOSE, PART/FITTING				3	2	5	3	2	5
BENT				5	2	7	5	2	7
BINDING		1	1	5		5	5	1	6
BRITTLE				1		1	1		1
BUCKLED				1	1	2	1	1	2
BURNED				3		3	3		3
CHAFED				5		5	5		5
COLLAPSED		1	1					1	1
CROSSED				1		1	1		1
DETORATED	2		2	6		6	8		8
DISCONNECTED		1	1	18	1	19	18	2	20
DISTORTED				1		1	1		1
ELONGATED				1		1	1		1
EXCESSIVE-WEAR/PLAY				2		2	2		2
ERRATIC				3	7	10	3	7	10
FLUCTUATING				1	2	3	1	2	3
FLUTTER	1		1	1		1	2		2
GROUNDED				3		3	3		3
HIGH VOLTAGE BREAKDOWN				1		1	1		1
IMPROPERLY INSTALLED	1		1	13		13	14		14
JAMMED	1		1	11		11	12		12
OBSTRUCTED				8	2	10	8	2	10
OPEN					1	1		1	1
OVEREATED	1		1	2		2	3		3
EXCESSIVE PRESSURE					1	1		1	1
PRESSURE TOO LOW	1		1	4		4	5		5
PRESSURE, NONE				11	1	12	11	1	12
SCORDED				1		1	1		1

CAUSE/FACTOR TABLE

MISCELLANEOUS ACTS, CONDITIONS (CONTINUED)

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
SHEARED				3		3	3		3
STICKING				1		1	1		1
STRIPPED				1		1	1		1
STUCK				5	1	6	5	1	6
EXCESSIVE TEMPERATURE	1		1	3	3	6	4	3	7
TEMPERATURE TOO LOW				3		3	3		3
VIBRATION, EXCESSIVE	1		1	3	1	4	4	1	5
CONGESTED RAMP/TAXIWAY					2	2		2	2
ICE-INDUCTION				3		3	3		3
FIRE IN WING	1		1	1		1	2		2
LOAD NOT JETTISONED		3	3		7	7		10	10
FAILED TO USE LANDING LIGHT(S)	1		1				1		1
INTENTIONAL GROUND-WATER LOOP-SWERVE				28	11	39	28	11	39
INTENTIONAL WHEELS UP		1	1	44	2	46	44	3	47

DIRECT ENTRY CAUSES

PILOT-INADVERTENTLY MOVED MIXTURE CTL TO OFF PSN.
 PILOT-ACCIDENTLY MOVED GR SWITCH WHILE TAXIING.
 PWR PLT-ENG BACKFIRED IGNITING DRIPPING FUEL.
 MISC-INADQT CLNC BTN ACFT DRG CLSD CRS AIR RACE.
 MISC-INADQT CLNC BTN ACFT DRG CLSD CRS AIR RACE.

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

ANALYTIC TABLE

KIND OF FLYING VS INJURY INDEX
SMALL FIXED WING

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
INSTRUCTIONAL						
DUAL	27	26	27	145	225	222
SOLO	18	13	42	251	324	324
CHECK	3			8	11	11
TRAINING	8	9	17	88	122	122
NONCOMMERCIAL						
PLEASURE	366	206	335	1459	2366	2356
PRACTICE	8	7	22	59	96	96
BUSINESS	74	27	47	260	408	408
CORPORATE/EXECUTIVE	6	5	5	43	59	59
AERIAL SURVEY			1	2	3	3
COMPANY FLIGHT						
OTHER	1			1	2	2
COMMERCIAL						
AERIAL APPLICATION	27	27	32	108	194	193
CROP CONTROL RELATED FLIGHT	10	9	10	115	144	143
FIRE CONTROL	1		1	2	4	4
FIRE CONTROL RELATED FLIGHT	1	1	1	1	4	4
AERIAL MAPPING/PHOTOGRAPHY	1		1	1	3	3
AERIAL ADVERTISING	2	2	1	3	8	8
POWER AND PIPELINE PATROL		5	2	6	13	13

ANALYTIC TABLE

KIND OF FLYING VS INJURY INDEX
SMALL FIXED WING
(CONTINUED)

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
FISH SPOTTING	2				2	1
AIR TAXI-PASSENGER OPERATIONS	18	9	13	55	95	94
AIR TAXI-CARGO OPERATIONS	8	2	3	18	31	31
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	2				2	2
CHARTER-CARGO-INTERNATIONAL						
CHARTER-PASSG-INTERNATIONAL				1	1	1
OTHER	1	1	1	1	4	4
UNKNOWN/NOT REPORTED						
MISCELLANEOUS						
EXPERIMENTATION	1	1	1		3	3
TEST	4	3	10	29	46	46
DEMONSTRATION	3	3	3	3	12	12
FERRY	9	5	13	54	81	81

ANALYTIC TABLE

KIND OF FLYING VS INJURY INDEX
SMALL FIXED WING
(CONTINUED)

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
SEARCH AND RESCUE	1	2	2	7	12	12
AIR SHOW/AIR RACING	12	1	3	4	20	18
PARACHUTE JUMP		4	3	5	12	12
PARACHUTE JUMP-AIR SHOW						
TOWING GLIDERS	2	1	1	4	8	8
SEEDING CLOUDS	1				1	1
HUNTING	8	1	1	2	12	12
POLICE PATROL			1	1	2	2
ALL OTHER PUBLIC FLYING	2			3	5	5
OTHER	6	1	1	2	10	10
UNKNOWN /NOT REPORTED		1		6	7	7

ANALYTIC TABLE

KIND OF FLYING VS AIRCRAFT DAMAGE
SMALL FIXED WING

	<div>DESTROYED</div> <div>SUBSTANTIAL</div> <div>MINOR</div> <div>NONE</div>				RECORDS	ACCIDENTS
INSTRUCTIONAL						
DUAL	41	181	2	1	225	222
SOLO	30	293	1		324	324
CHECK	3	8			11	11
TRAINING	13	107	2		122	122
NONCOMMERCIAL						
PLEASURE	528	1813	13	12	2366	2356
PRACTICE	14	82			96	96
BUSINESS	106	301	1		408	408
CORPORATE/EXECUTIVE	11	47		1	59	59
AERIAL SURVEY	2	1			3	3
COMPANY FLIGHT						
OTHER	1	1			2	2
COMMERCIAL						
AERIAL APPLICATION	71	120	1	2	194	193
CROP CONTROL RELATED FLIGHT	26	117		1	144	143
FIRE CONTROL	1	3			4	4
FIRE CONTROL RELATED FLIGHT	3	1			4	4
AERIAL MAPPING/PHOTOGRAPHY	1	2			3	3
AERIAL ADVERTISING	3	5			8	8
POWER AND PIPELINE PATROL	3	10			13	13

ANALYTIC TABLE

KIND OF FLYING VS AIRCRAFT DAMAGE
SMALL FIXED WING
(CONTINUED)

	<div>DESTROYED</div> <div>SUBSTANTIAL</div> <div>MINOR</div> <div>NONE</div>				RECORDS	ACCIDENTS
FISH SHOOTING	2				2	1
AIR TAXI-PASSENGER OPERATIONS	20	74	1		95	94
AIR TAXI-CARGO OPERATIONS	10	20	1		31	31
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	2				2	2
CHARTER-CARGO-INTERNATIONAL						
CHARTER-PASSG-INTERNATIONAL		1			1	1
OTHER	3	1			4	4
UNKNOWN/NOT REPORTED						
MISCELLANEOUS						
EXPERIMENTATION	2	1			3	3
TEST	9	37			46	46
DEMONSTRATION	4	7	1		12	12
FERRY	18	62	1		81	81

ANALYTIC TABLE

KIND OF FLYING VS AIRCRAFT DAMAGE
SMALL FIXED WING
(CONTINUED)

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS
SEARCH AND RESCUE	2	9		1	12	12
AIR SHOW/AIR RACING	14	6			20	18
PARACHUTE JUMP	3	9			12	12
PARACHUTE JUMP-AIR SHOW						
TOWING GLIDERS	2	6			8	8
SEEDING CLOUDS	1				1	1
HUNTING	7	5			12	12
POLICE PATROL	1	1			2	2
ALL OTHER PUBLIC FLYING	1	4			5	5
OTHER	6	3		1	10	10
UNKNOWN/NOT REPORTED	1	6			7	7

INJURIES, ACCIDENTS
SMALL FIXED WING

	INJURIES					TOTAL
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	
PILOT	578	320	544	2910		4352
COPILOT	44	10	9	55		118
DUAL STUDENT	23	22	21	162		228
CHECK PILOT	2			7		9
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW	5	1	1	8		15
PASSENGERS	611	315	483	2663		4072
 TOTAL	 1263	 668	 1058	 5805	 ABOARD	 8794
 * OTHER AIRCRAFT				146		146
OTHER GROUND	11	14	32	4		61
 GRAND TOTAL	 1274	 682	 1090	 5955		 9001

INVOLVES 4307 TOTAL ACCIDENTS
INVOLVES 617 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

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ANALYTIC TABLE

TYPE OF ACCIDENT VS AIRCRAFT DAMAGE
LARGE FIXED WING

	DESTROYED SUBSTANTIAL MINOR NONE	RECORDS	ACCIDENTS
GROUND - WATER LOOP-SWERVE	5	5	5
DAGGED WINGTIP POD OR FLOAT			
WHEEL -UP LANDING	2	2	2
WHEEL -DOWN LANDING IN WATER			
GEAR COLLAPSED			
GEAR EXTENDED	1	1	1
HARD LANDING			
NOSE UP/DOWN			
ROLL UP			
OVERS HOOT	1	1	1
UNDER HOOT	2	2	2
COLLISION BETWEEN AIRCRAFT			
BOTH IN FLIGHT			
ONE AIRBORNE			
BOTH ON GROUND			
COLLISION WITH GROUND/WATER			
CONTROLLED	1	1	1
UNCONTROLLED	2	2	2
COLLIDED WITH			
WIRES POLES	1	1	1
TREES	1	1	1
OTHER			

ANALYTIC TABLE

TYPE OF ACCIDENT VS AIRCRAFT DAMAGE LARGE FIXED WING (CONTINUED)

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS
RESIDENCE/S						
BUILDING/S	1				1	1
FENCE, FENCEPOSTS						
ELECTRONIC TOWERS						
RUNWAY OR APPROACH LIGHTS						
AIRPORT HAZARD						
ANIMALS						
CROP						
FLAGMAN LOADER						
DITCHES						
SNOWBANK	1				1	1
PARKED AIRCRAFT	1				1	1
AUTOMOBILE						
DIRT BANK						
OBJECT						
BIRD STRIKE						
STALL	1				1	1
SPIN	1				1	1
SPIRAL						
MUSH						
FIRE OR EXPLOSION						
OTHER						

ANALYTIC TABLE

TYPE OF ACCIDENT VS AIRCRAFT DAMAGE
LARGE FIXED WING
(CONTINUED)

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS
IN FLIGHT	1	3			4	4
ON GROUND						
AIRFRAME FAILURE						
IN FLIGHT		2			2	2
ON GROUND						
ENGINE TEARAWAY						
ENGINE FAILURE OR MALFUNCTION	4	4			8	8
PROPELLER/ROTOR FAILURE						
PROPELLER		1			1	1
TAIL ROTOR						
MAIN ROTOR						
PROPELLER ACIDENT TO PERSON						
JET INTAKE/EXH ACIDENT TO PERSON						
PROPELLER/JET/ROTOR BLAST						
TURBULENCE			2		2	2
HAIL DAMAGE TO AIRCRAFT						
LIGHTNING STRIKE						
EVASIVE MANEUVER						
UNCONTROLLED ALT DEVIATION						
DITCHING						
MISSING ACFT NOT RECOVERED	1				1	1
MISCELLANEOUS/OTHER		1			1	1
UNDETERMINED						

ANALYTIC TABLE

PHASE OF OPERATION VS INJURY INDEX LARGE FIXED WING

FATAL
SERIOUS
MINOR
NONE

RECORDS ACCIDENTS

STATIC					
STARTING ENGINE/S					
IDLING ENGINE/S					
ENGINE RUNUP					
IDLING ROTORS					
PARKED-ENGINES NOT OPERATING					
OTHER					
TAXI					
TO TAKEOFF					
FROM LANDING			2	2	2
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		4	5	5
INITIAL CLIMB	1	1	1	3	3
VERTICAL					
OTHER					

ANALYTIC TABLE

PHASE OF OPERATION VS INJURY INDEX
LARGE FIXED WING
(CONTINUED)

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
RUNNING						
ABORTED			1		1	1
ABORTED						
ABORTED						
OTHER						
INFLIGHT						
CLIMB TO CRUISE			4		4	4
NORMAL CRUISE	1	2	2		5	5
DESCENDING			1		1	1
HOLDING						
HOVERING						
POWER-ON DESCENT						
AUTOMATIC DESCENT						
ACROBATICS						
BUZZING						
UNCONTROLLED DESCENT	1				1	1
EMERGENCY DESCENT						
LOW PASS						
OTHER			1		1	1
EN ROUTE TO TREAT CROP						
EN ROUTE TO RELOADING AREA			1		1	1
OTHER						

ANALYTIC TABLE

 PHASE OF OPERATION VS INJURY INDEX
 LARGE FIXED WING
 (CONTINUED)

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
SURVEY FIELD/AREA						
STARTING SWATH RUN	1				1	1
SWATH RUN	1				1	1
FLAREOUT FOR SWATH RUN						
PULLUP FROM SWATH RUN						
PROCEDURE TURNAROUND						
CLEANUP SWATH						
MANEUVER TO AVOID OBSTRUCTION						
RETURN TO STRIP						
LANDING						
TRAFFIC PATTERN-CIRCLING	1		1		2	2
FINAL APPROACH	2		2		4	4
INITIAL APPROACH						
FINAL APPROACH	1	1			2	2
LEVEL OFF/TOUCHDOWN			3		3	3
ROLL			1		1	1
ROLL-ON/RUN-ON						
POWER-ON LANDING						
POWER-OFF AUTOROTATIVE LDG						
GO-AROUND			1		1	1
MISSED APPROACH						
OTHER						
UNKNOWN/NOT REPORTED	1				1	1

CAUSE/FACTOR TABLE

LARGE FIXED WING

INVOLVES 38 TOTAL ACCIDENTS
INVOLVES 7 FATAL ACCIDENTS

BROAD CAUSE/FACTOR -----	FATAL ACCIDENTS -----			NONFATAL ACCIDENTS -----			ALL ACCIDENTS -----		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
PILOT	5 71.43	.00	5 71.43	18 58.06	1 3.23	18 58.06	23 60.53	1 2.63	23 60.53
PERSONNEL	1 14.29	.00	1 14.29	8 25.81	1 3.23	9 29.03	9 23.68	1 2.63	10 26.32
AIRFRAME	.00	.00	.00	1 3.23	.00	1 3.23	1 2.63	.00	1 2.63
LANDING GEAR	.00	.00	.00	2 6.45	2 6.45	4 12.90	2 5.26	2 5.26	4 10.53
POWERPLANT	.00	.00	.00	7 22.58	.00	7 22.58	7 18.42	.00	7 18.42
SYSTEMS	.00	.00	.00	3 9.68	.00	3 9.68	3 7.89	.00	3 7.89
INSTRUMENTS/EQUIPMENT AND ACCESSORIES	.00	.00	.00	.00	.00	.00	.00	.00	.00
ROTORCRAFT	.00	.00	.00	.00	.00	.00	.00	.00	.00
AIRPORTS/AIRWAYS/FACILITIES	.00	.00	.00	2 6.45	5 16.13	6 19.35	2 5.26	5 13.16	6 15.79
WEATHER	.00	2 28.57	2 28.57	3 9.68	1 3.23	4 12.90	3 7.89	3 7.89	6 15.79
TERRAIN	.00	.00	.00	.00	1 3.23	1 3.23	.00	1 2.63	1 2.63
MISCELLANEOUS	1 14.29	.00	1 14.29	2 6.45	.00	2 6.45	3 7.89	.00	3 7.89
UNDETERMINED	1 14.29	.00	1 14.29	1 3.23	.00	1 3.23	2 5.26	.00	2 5.26

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

INVOLVES 38 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									
DELAYED ACTION IN ABORTING TAKEOFF				1		1	1		1
DIVERTED ATTENTION FROM OPERATION OF AIRCRAFT				1		1	1		1
INADVERTENTLY RETRACTED GEAR				1		1	1		1
FAILED TO SEE AND AVOID OTHER AIRCRAFT	1		1				1		1
FAILED TO OBTAIN/MAINTAIN FLYING SPEED	1		1	2		2	3		3
FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES ETC				3		3	3		3
IMPROPER OPERATION OF POWERPLANT + POWERPLANT CONTROLS				1		1	1		1
IMPROPER LEVEL OFF				1		1	1		1
IMPROPER IFR OPERATION	1		1	1		1	2		2
IMPROPER COMPENSATION FOR WIND CONDITIONS				1		1	1		1
INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING	1		1	4		4	5		5
INADEQUATE SUPERVISION OF FLIGHT				3		3	3		3
LACK OF FAMILIARITY WITH AIRCRAFT					1	1		1	1
FAILED TO ASSURE THE GEAR WAS DOWN AND LOCKED				2		2	2		2
SPONTANEOUS-IMPROPER ACTION				1		1	1		1
MISJUDGED DISTANCE AND SPEED				1		1	1		1
MISJUDGED ALTITUDE	1		1				1		1
MISJUDGED CLEARANCE				1		1	1		1
FAILED TO MAINTAIN DIRECTIONAL CONTROL				1		1	1		1
FAILED TO INITIATE GO-AROUND				1		1	1		1
SUBTOTAL	5		5	26	1	27	31	1	32
COPILOT									
FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES, ETC				1		1	1		1
MISJUDGED DISTANCE AND ALTITUDE				1		1	1		1
FAILED TO MAINTAIN DIRECTIONAL CONTROL				1		1	1		1
SUBTOTAL				3		3	3		3
** PERSONNEL **									
FLIGHT INSTRUCTOR									
MAINTENANCE, SERVICING, INSPECTION									
INADEQUATE MAINTENANCE AND INSPECTION				6		6	6		6
OPERATIONAL SUPERVISORY PERSONNEL									
WEATHER PERSONNEL									
TRAFFIC CONTROL PERSONNEL									
AIRPORT SUPERVISORY PERSONNEL									
FAILURE TO NOTIFY OF UNSAFE CONDITION				1		1	1		1
AIRWAYS FACILITIES PERSONNEL									
PRODUCTION-DESIGN-PERSONNEL									
OTHER				1		1	1		1
MISCELLANEOUS-PERSONNEL									
PILOT OF OTHER AIRCRAFT	1		1				1		1
GROUND SIGNALMAN					1	1		1	1
THIRD PILOT									
FLIGHT ENGINEER									
DISPATCHING									
SUBTOTAL	1		1	8	1	9	9	1	10
** AIRFRAME **									
WINGS									
FUSELAGE									
LANDING GEAR									
NORMAL RETRACTION/EXTENSION ASSEMBLY					1	1		1	1
WHEELS, TIRES, AXLES					1	1		1	1
BRAKING SYSTEM (NORMAL)				1		1	1		1
NOSEWHEEL STEERING				1		1	1		1
FLIGHT CONTROL SURFACES									
RUDDER, SURFACES ATTACHMENTS				1		1	1		1

AIRFRAME (CONTINUED)

CAUSE/FACTOR TABLE

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
S BTOTAL				3	2	5	3	2	5
** POWERPLANT **									
ENGINE STRUCTURE									
IGNITION SYSTEM									
SPARK PLUG				1		1	1		1
FUEL SYSTEM									
CARBURETOR				1		1	1		1
PUMP				1		1	1		1
RAM AIR ASSEMBLY				1		1	1		1
LUBRICATING SYSTEM									
COOLING SYSTEM									
PROPELLER AND ACCESSORIES									
OTHE				2		2	2		2
EXHAUST SYSTEM				1		1	1		1
OTHE									
ENGINE ACCESSORIES									
ENGINE CONTROLS-COCKPIT									
POWERPLANT-INSTRUMENTS									
MISCELLANEOUS									
POWERPLANT FAILURE FOR UNDETERMINED REASONS				1		1	1		1
REDUCTION GEAR ASSEMBLY									
COMPRESSOR ASSEMBLY									
COMBUSTION ASSEMBLY									
TURBINE ASSEMBLY									
ACCESSORY DRIVE ASSEMBLY									
LUBRICATING SYSTEM									
FUEL SYSTEM									
SAFETY SYSTEM									
IGNITION SYSTEM									
TORQUE METER									
AIR BLEED									
EXHAUST SYSTEM									
THRUST REVERSER									
PROPELLER SYSTEM									
CONSTANT SPEED DRIVE									
POWER LEVER									
PROPELLER LEVER									
REVERSE THRUST LEVER									
ENGINE INDICATING EQUIPMENT									
ENGINE INSTALLATION									
S BTOTAL				8		8	8		8
** SYSTEMS **									
ELECTRICAL SYSTEM									
BATTERIES				2		2	2		2
HYDRAULIC SYSTEM									
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									
S BTOTAL				3		3	3		3
** AIRPORTS/AIRWAYS/FACILITIES **									
AIRPORT FACILITIES									
AIRPORT CONDITIONS									
ICE/SLEASH ON RUNWAY					2	2		2	2
SNOW ON RUNWAY					1	1		1	1
UNMARKED OBSTRUCTIONS				1		1	1		1
OTHER				1	2	3	1	2	3
AIRWAY FACILITIES									

CAUSE/FACTOR TABLE

AIRPORTS/AIRWAYS/FACILITIES (CONTINUED)

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
SUBTOTAL				2	5	7	2	5	7
** WEATHER **									
LOW CEILING					1	1		1	1
RAIN					1	1		1	1
UNFAVORABLE WIND CONDITIONS				1	1	1	1	1	1
TURBULENCE ASSOCIATED WITH CLOUDS AND/OR THUNDERSTORMS				2	1	3	2	1	3
HIGH DENSITY ALTITUDE		1	1					1	1
THUNDERSTORM ACTIVITY		1	1		1	1		1	1
OTHER								1	1
SUBTOTAL		2	2	3	4	7	3	6	9
** TERRAIN **									
ROUGH/UNEVEN					1	1		1	1
SUBTOTAL					1	1		1	1
** MISCELLANEOUS **									
EVASIVE MANEUVER TO AVOID COLLISION				1		1	1		1
FOREIGN MATERIAL AFFECTING NORMAL OPERATIONS	1		1	1		1	2		2
UNDETERMINED	1		1	1		1	2		2
SUBTOTAL	2		2	3		3	5		5
GRAND TOTAL	8	2	10	59	14	73	67	16	83
** MISCELLANEOUS ACTS, CONDITIONS **									
IMPROPER EMERGENCY PROCEDURES				2	1	3	2	1	3
GUST LOCKS ENGAGED	1		1				1		1
SEAT BELT NOT FASTENED					2	2		2	2
POORLY PLANNED APPROACH		1	1					1	1
IMPROPERLY SECURED				1		1	1		1
ELECTRICAL FAILURE				1	1	2	1	1	2
FATIGUE FRACTURE				1		1	1		1
FAILURE OF TWO OR MORE ENGINES					1	1		1	1
SEPARATION IN FLIGHT					1	1		1	1
FIRE IN CABIN/ COCKPIT/ BAGGAGE COMPARTMENT					1	1		1	1
FIRE IN ENGINE				2		2	2		2
FIRE IN BRAKES/ WHEEL ASSEMBLY/ WHEEL WELL				1	1	2	1	1	2
IMPROPERLY LOADED AIRCRAFT-WEIGHT-AND/OR CG				2		2	2		2
INTERFERENCE WITH FLIGHT CONTROLS	1		1				1		1
WATER IN FUEL				1		1	1		1
AIRCRAFT CAME TO REST IN WATER		1	1		1	1		2	2
SEAT BELT SIGN OFF					1	1		1	1
OVERLOAD FAILURE				2	4	6	2	4	6
MATERIAL FAILURE				4	1	5	4	1	5
FUEL STARVATION				2		2	2		2
IMPROPER CLEARANCE-TOLERANCE				1		1	1		1
PREVIOUS DAMAGE					2	2		2	2
DOWNDOWN					2	2		2	2
LANDED IN CONSTRUCTION AREA				1		1	1		1
DETERIORATED				1		1	1		1
DISCONNECTED				1		1	1		1
EXCESSIVE-WEAR/PLAY				1		1	1		1
GROUNDING				2		2	2		2
OVERHEATED				1		1	1		1
PRESSURE TOO LOW					1	1		1	1
VIBRATION, EXCESSIVE				1	1	2	1	1	2
SEAT BELT SIGN ON					1	1		1	1
INTENTIONAL GROUND-WATER LOOP-SWERVE				1		1	1		1
INTENTIONAL WHEELS UP				2	2	4	2	2	4

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

ANALYTIC TABLE

KIND OF FLYING VS INJURY INDEX
LARGE FIXED WING

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
INSTRUCTIONAL						
DUAL				1	1	1
SOLO				1	1	1
CHECK						
TRAINING						
NONCOMMERCIAL						
PLEASURE	1	1		1	3	3
PRACTICE				1	1	1
BUSINESS				2	2	2
CORPORATE/EXECUTIVE	2	2	1	7	12	12
AERIAL SURVEY						
COMPANY FLIGHT						
OTHER						
COMMERCIAL						
AERIAL APPLICATION						
CROP CONTROL RELATED FLIGHT						
FIRE CONTROL	2			1	3	3
FIRE CONTROL RELATED FLIGHT				1	1	1
AERIAL MAPPING/PHOTOGRAPHY						
AERIAL ADVERTISING						
POWER AND PIPELINE PATROL						
OTHER						

ANALYTIC TABLE

KIND OF FLYING VS INJURY INDEX
LARGE FIXED WING
(CONTINUED)

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
FISH SPOTTING						
AIR TAXI-PASSENGER OPERATIONS	1		1		2	2
AIR TAXI-CARGO OPERATIONS			1		1	1
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	1	1	1		3	3
CHARTER-PASSG-INTERNATIONAL						
OTHER		1			1	1
UNKNOWN/NOT REPORTED						
MISCELLANEOUS						
EXPERIMENTATION						
TEST			2		2	2
DEMONSTRATION						
FERRY	1	1	2		4	4
OTHER						

ANALYTIC TABLE

KIND OF FLYING VS INJURY INDEX
LARGE FIXED WING
(CONTINUED)

FATAL
SERIOUS
MINOR
NONE

RECORDS ACCIDENTS

SEARCH AND RESCUE
AIR SHOW/AIR RACING
PARACHUTE JUMP
PARACHUTE JUMP--AIR SHOW
TOWING GLIDERS
SEEDING CLOUDS
HUNTING
POLICE PATROL
ALL OTHER PUBLIC FLYING
OTHER
UNKNOWN/NOT REPORTED

1

2

3

3

ANALYTIC TABLE

KIND OF FLYING VS AIRCRAFT DAMAGE
LARGE FIXED WING

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS
INSTRUCTIONAL						
DUAL	1				1	1
SOLO	1				1	1
CHECK						
TRAINING						
NONCOMMERCIAL						
PLEASURE	2	1			3	3
PRACTICE		1			1	1
BUSINESS		2			2	2
CORPORATE/EXECUTIVE	4	7	1		12	12
AERIAL SURVEY						
COMPANY FLIGHT						
OTHER						
COMMERCIAL						
AERIAL APPLICATION						
CROP CONTROL RELATED FLIGHT						
FIRE CONTROL	3				3	3
FIRE CONTROL RELATED FLIGHT		1			1	1
AERIAL MAPPING/PHOTOGRAPHY						
AERIAL ADVERTISING						
POWER AND PIPELINE PATROL						
OTHER						

ANALYTIC TABLE

KIND OF FLYING VS AIRCRAFT DAMAGE
LARGE FIXED WING
(CONTINUED)

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS
FISH POTTING						
AIR TAXI-PASSENGER OPERATIONS	1	1			2	2
AIR TAXI-CARGO OPERATIONS		1			1	1
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	1	2			3	3
CHARTER-PASSG-INTERNATIONAL						
OTHER			1		1	1
UNKNOWN/NOT REPORTED						
MISCELLANEOUS						
EXPERIMENTATION						
TEST		2			2	2
DEMONSTRATION						
FERRY	2	2			4	4
OTHER						

ANALYTIC TABLE

KIND OF FLYING VS AIRCRAFT DAMAGE
LARGE FIXED WING
(CONTINUED)

DESTROYED
SUBSTANTIAL
MINOR
NONE

RECORDS ACCIDENTS

SEARCH AND RESCUE
AIR SHOW/AIR RACING
PARACHUTE JUMP
PARACHUTE JUMP-AIR SHOW
TOWING GLIDERS
SEEDING CLOUDS
HUNTING
POLICE PATROL
ALL OTHER PUBLIC FLYING
OTHER
UNKNOWN/NOT REPORTED

1 2

3 3

INJURIES, ACCIDENTS
LARGE FIXED WING

	INJURIES					TOTAL
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	
PILOT	8	2	3	27		40
COPILOT	5	2	3	23		33
DUAL STUDENT				1		1
CHECK PILOT						
FLIGHT ENGINEER	1			2		3
NAVIGATOR						
CABIN ATTENDANT		2		1		3
EXTRA CREW	1			3		4
PASSENGERS	20	9	29	75		133
TOTAL	35	15	35	132		217
					ABOARD	

OTHER AIRCRAFT
OTHER GROUND

GRAND TOTAL 35 15 35 132 217

INVOLVES 40 TOTAL ACCIDENTS
INVOLVES 8 FATAL ACCIDENTS

GENERAL AVIATION ACCIDENTS

ROTORCRAFT

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ANALYTIC TABLE

TYPE OF ACCIDENT VS AIRCRAFT DAMAGE ROTORCRAFT-1971

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS
GROUND-WATER LOOP-SWERVE	4	3			7	7
DRAGGED WINGTIP POD OR FLOAT						
WHEELS-UP LANDING						
WHEELS-DOWN LANDING IN WATER						
GEAR COLLAPSED	1				1	1
GEAR RETRACTED						
HARD LANDING	3	22			25	25
NOSE OVER/DOWN		2			2	2
ROLL OVER		4			4	4
OVERSHOT						
UNDERSHOOT						
COLLISION BETWEEN AIRCRAFT						
BOTH IN FLIGHT						
ONE AIRBORNE		4			4	2
BOTH ON GROUND						
COLLISION WITH GROUND/WATER						
CONTROLLED	6	11			17	17
UNCONTROLLED	10	16			26	26
COLLIDED WITH						
WIRES/POLES	10	12			22	22
TREES	2	6			8	8
OTHER						

ANALYTIC TABLE

TYPE OF ACCIDENT VS AIRCRAFT DAMAGE
ROTORCRAFT-1971
(CONTINUED)

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS
RESIDENCE/S						
BUILDING/S		1			1	1
FENCE, FENCEPOSTS	1	1			2	2
ELECTRONIC TOWERS						
RUNWAY OR APPROACH LIGHTS						
AIRPORT HAZARD						
ANIMALS						
CROP	2	1			3	3
FLAGMAN LOADER						
DITCHES						
SNOWBANK						
PARKED AIRCRAFT		2			2	2
AUTOMOBILE	1				1	1
DIRT BANK						
OBJECT	1	9			10	10
BIRD STRIKE						
STALL	1				1	1
SPIN						
SPIRAL						
MUSH						
FIRE OR EXPLOSION						
OTHER						

ANALYTIC TABLE

TYPE OF ACCIDENT VS AIRCRAFT DAMAGE
ROTORCRAFT-1971
(CONTINUED)

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS
IN FLIGHT	1				1	1
ON GROUND						
AIRFRAME FAILURE						
IN FLIGHT	2	1			3	3
ON GROUND	1	2			3	3
ENGINE TEARAWAY						
ENGINE FAILURE OR MALFUNCTION	14	69			83	83
PROPELLER/ROTOR FAILURE						
PROPELLER						
TAIL ROTOR	1	4			5	5
MAIN ROTOR	3	1			4	4
PROPELLER/ROTOR ACIDENT TO PERSON	1	1	2		4	4
JET INTAKE/EXHAUST ACIDENT TO PERSON						
PROPELLER/JET/ROTOR BLAST						
TURBULENCE	1				1	1
HAIR DAMAGE TO AIRCRAFT						
LIGHTNING STRIKE						
EVASIVE MANEUVER						
UNCONTROLLED ALTITUDE DEVIATION						
DITCHING						
MISSING ACFT NOT RECOVERED						
MISCELLANEOUS/OTHER	2	5			7	7
UNDETERMINED						

ANALYTIC TABLE

PHASE OF OPERATION VS INJURY INDEX
ROTORCRAFT-1971

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
STATIC						
STARTING ENGINE/S						
IDLING ENGINE/S						
ENGINE RUNUP				1	1	1
IDLING ROTORS	3	1	3	3	10	10
PARKED-ENGINES NOT OPERATING						
OTHER						
TAXI						
TO TAKEOFF				1	1	1
FROM LANDING						
OTHER						
GROUND TAXI TO TAKEOFF						
GROUND TAXI FROM LANDING						
GROUND TAXI, OTHER						
AERIAL TAXI TO TAKEOFF				1	1	1
AERIAL TAXI TO/FROM LANDING				1	1	1
AERIAL TAXI, OTHER	1			1	2	2
TAKEOFF						
RUN	1				1	1
INITIAL CLIMB	2	4	5	12	23	23
VERTICAL			1	5	6	6
OTHER						

ANALYTIC TABLE

 PHASE OF OPERATION VS INJURY INDEX
 ROTORCRAFT-1971
 (CONTINUED)

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
RUNNING	1	3	6		10	10
ABORTING						
ABORTING						
ABORTING			3		3	3
OTHER						
INFLIGHT						
CLIMB TO CRUISE	1				1	1
NORMAL CRUISE	7	4	6	25	42	42
DESCENDING						
HOLDING						
HOVERING	2	3	1	9	15	15
POWER-ON DESCENT	1		1	1	3	3
AUTOMATIC DESCENT			1		1	1
ACROBATICS						
BUZZING						
UNCONTROLLED DESCENT	2	2		4	8	8
EMERGENCY DESCENT						
LOW PASS			1	2	3	3
OTHER	1	3		2	6	6
EN ROUTE TO TREAT DROP			1		1	1
EN ROUTE TO RELANDING AREA				1	1	1

ANALYTIC TABLE

 PHASE OF OPERATION VS INJURY INDEX
 ROTORCRAFT-1971
 (CONTINUED)

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
SURVEY FIELD/AREA						
STARTING SWATH RUN		1	2	1	4	4
SWATH RUN	1	1	2	15	19	19
FLAREOUT FOR SWATH RUN				1	1	1
PULLUP FROM SWATH RUN				2	2	2
PROCEDURE TURNAROUND	2	1		2	5	5
CLEANUP SWATH						
MANEUVER TO AVOID OBSTRUCTION						
RETURN TO STRIP				2	2	2
LANDING						
TRAFFIC PATTERN-CIRCLING	1	1		2	4	4
FINAL APPROACH	1	2	6	6	15	15
INITIAL APPROACH						
FINAL APPROACH						
LEVEL OFF/TOUCHDOWN				5	5	5
ROLL			1	3	4	4
ROLL-ON/RUN-ON				2	2	2
POWER-ON LANDING	1	1	5	11	18	18
POWER-OFF AUTOROTATIVE LG			1	22	23	23
GO-AROUND				1	1	1
MISSED APPROACH						
OTHER				2	2	2
UNKNOWN/NOT REPORTED						

CAUSE/FACTOR TABLE

ROTORCRAFT

INVOLVES 239 TOTAL ACCIDENTS
INVOLVES 26 FATAL ACCIDENTS

BROAD CAUSE/FACTOR -----	FATAL ACCIDENTS -----			NONFATAL ACCIDENTS -----			ALL ACCIDENTS -----		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
PILOT	18 69.23	2 7.69	18 69.23	153 71.83	7 3.29	155 72.77	171 71.55	9 3.77	173 72.38
PERSONNEL	6 23.08	1 3.85	6 23.08	22 10.33	2 .94	24 11.27	28 11.72	3 1.26	30 12.55
AIRFRAME	1 3.85	.00	1 3.85	1 .47	.00	1 .47	2 .84	.00	2 .84
LANDING GEAR	.00	.00	.00	4 1.88	.00	4 1.88	4 1.67	.00	4 1.67
POWERPLANT	1 3.85	.00	1 3.85	53 24.88	1 .47	54 25.35	54 22.59	1 .42	55 23.01
SYSTEMS	.00	.00	.00	.00	.00	.00	.00	.00	.00
INSTRUMENTS/EQUIPMENT AND ACCESSORIES	1 3.85	.00	1 3.85	2 .94	1 .47	3 1.41	3 1.26	1 .42	4 1.67
ROTORCRAFT	3 11.54	.00	3 11.54	18 8.45	3 1.41	21 9.86	21 8.79	3 1.26	24 10.04
AIRPORTS/AIRWAYS/FACILITIES	.00	.00	.00	6 2.82	1 .47	7 3.29	6 2.51	1 .42	7 2.93
WEATHER	3 11.54	2 7.69	5 19.23	9 4.23	9 4.23	18 8.45	12 5.02	11 4.60	23 9.62
TERRAIN	5 19.23	5 19.23	10 38.46	43 20.19	31 14.55	74 34.74	48 20.08	36 15.06	84 35.15
MISCELLANEOUS	.00	.00	.00	7 3.29	1 .47	8 3.76	7 2.93	1 .42	8 3.35
UNDETERMINED	.00	.00	.00	1 .47	.00	1 .47	1 .42	.00	1 .42

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

INVOLVES 239 TOTAL ACCIDENTS
INVOLVES 26 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				2		2	2		2
BECAME LOST/DISORIENTED				1		1	1		1
CONTINUED VFR FLIGHT INTO ADVERSE WEATHER CONDITIONS	2		2	2		2	4		4
DIVERTED ATTENTION FROM OPERATION OF AIRCRAFT	1		1	6		6	7		7
FAILED TO SEE AND AVOID OBJECTS OR OBSTRUCTIONS	5		5	13		13	18		18
FAILED TO OBTAIN/MAINTAIN FLYING SPEED	1		1	2		2	3		3
FAILED TO MAINTAIN ADEQUATE ROTOR RPM	1		1	32	1	33	33	1	34
FAILED TO USE OR INCORRECTLY USED MISC EQUIPMENT				1		1	1		1
FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES ETC				5		5	5		5
IMPROPER OPERATION OF POWERPLANT + POWERPLANT CONTROLS	2		2	8		8	10		10
IMPROPER OPERATION OF BRAKES AND/OR FLIGHT CONTROLS				2		2	2		2
IMPROPER OPERATION OF FLIGHT CONTROLS	4		4	14		14	18		18
IMPROPER LEVEL OFF				4		4	4		4
IMPROPER IN-FLIGHT DECISIONS OR PLANNING				3		3	3		3
IMPROPER COMPENSATION FOR WIND CONDITIONS				4		4	4		4
INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING	3		3	30	2	32	33	2	35
INADEQUATE SUPERVISION OF FLIGHT				9		9	9		9
LACK OF FAMILIARITY WITH AIRCRAFT	2	1	3	5	3	8	7	4	11
MISMANAGEMENT OF FUEL				15	1	16	15	1	16
EXERCISED POOR JUDGMENT				4		4	4		4
OPERATED CARELESSLY				1		1	1		1
SELECTED UNSUITABLE TERRAIN				6		6	6		6
SPONTANEOUS-IMPROPER ACTION	1		1	3		3	4		4
MISJUDGED DISTANCE				1		1	1		1
MISJUDGED SPEED AND ALTITUDE	1		1	27		27	28		28
MISJUDGED SPEED				2		2	2		2
MISJUDGED ALTITUDE AND CLEARANCE				4		4	4		4
MISJUDGED ALTITUDE	1		1	4		4	5		5
MISJUDGED CLEARANCE	1		1	16		16	17		17
MISUNDERSTANDING OF ORDERS OR INSTRUCTIONS				1		1	1		1
IMPROPER RECOVERY FROM BOUNCED LANDING				3		3	3		3
INCAPACITATION	1		1				1		1
SPATIAL DISORIENTATION	1		1	4		4	5		5
PSYCHOLOGICAL CONDITION		1	1					1	1
FAILED TO MAINTAIN DIRECTIONAL CONTROL				5		5	5		5
FAILED TO ABORT TAKEOFF				1		1	1		1
SUBTOTAL	27	2	29	241	7	248	268	9	277
DUAL STUDENT									
FAILED TO MAINTAIN ADEQUATE ROTOR RPM				2		2	2		2
IMPROPER OPERATION OF POWERPLANT + POWERPLANT CONTROLS				1		1	1		1
IMPROPER OPERATION OF BRAKES AND/OR FLIGHT CONTROLS				1		1	1		1
IMPROPER OPERATION OF FLIGHT CONTROLS				2		2	2		2
MISJUDGED SPEED AND ALTITUDE				3		3	3		3
FAILED TO MAINTAIN DIRECTIONAL CONTROL				2		2	2		2
SUBTOTAL				11		11	11		11
CHECK PILOT									
ATTEMPTED OPERATION BEYOND EXPERIENCE /ABILITY LEVEL					1	1		1	1
SUBTOTAL					1	1		1	1
** PERSONNEL **									
FLIGHT INSTRUCTOR									
INADEQUATE SUPERVISION OF FLIGHT				1		1	1		1
MAINTENANCE, SERVICING, INSPECTION									
IMPROPER MAINTENANCE(MAINTENANCE PERSONNEL)				1		1	1		1
IMPROPER MAINTENANCE(OWNER PERSONNEL)				1		1	1		1

CAUSE/FACTOR TABLE

PERSONNEL (CONTINUED)

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
IMPROPERLY SERVICED AIRCRAFT(GROUND CREW)				1		1	1		1
IMPROPERLY SERVICED AIRCRAFT(OWNER-PILOT)				1		1	1		1
INADEQUATE INSPECTION OF AIRCRAFT(MAINTENANCE PERSONNEL)				1		1	1		1
INADEQUATE MAINTENANCE AND INSPECTION	2		2	9		9	11		11
OTHER				1		1	1		1
OPERATIONAL SUPERVISORY PERSONNEL									
INADEQUATE SUPERVISION/TRAINING OF RAMP CREWS	1	1	2				1	1	2
DEFICIENCY, COMPANY MAINTAINED EOMT, SERV, REGULATIONS				1		1	1		1
WEATHER PERSONNEL									
TRAFFIC CONTROL PERSONNEL									
AIRPORT SUPERVISORY PERSONNEL									
AIRWAYS FACILITIES PERSONNEL									
PRODUCTION-DESIGN-PERSONNEL									
POOR/INADEQUATE DESIGN				2	1	3	2	1	3
MISCELLANEOUS-PERSONNEL									
PILOT OF OTHER AIRCRAFT				2		2	2		2
SPECTATOR					1	1		1	1
PASSENGER	1		1	1		1	2		2
OTHER	2		2	1		1	3		3
THIRD PILOT									
FLIGHT ENGINEER									
DISPATCHING									
JB TOTAL	6	1	7	23	2	25	29	3	32
** AIRFRAME **									
WINGS									
FUSELAGE									
OTHER				1		1	1		1
LANDING GEAR									
MAIN GEAR-SHOCK ABSORBING ASSY, STRUTS, ATTACHMENTS, ETC				2		2	2		2
NOSWHEEL ASSEMBLIES				2		2	2		2
FLIGHT CONTROL SURFACES									
RUDER, SURFACES ATTACHMENTS	1		1				1		1
JB TOTAL	1		1	5		5	6		6
** POWERPLANT **									
ENGINE STRUCTURE									
MASTER AND CONNECTING RODS				8		8	8		8
CYLINDER ASSEMBLY				5		5	5		5
PISTON, PISTON RINGS				2		2	2		2
VALVE ASSEMBLIES				3		3	3		3
IGNITION SYSTEM									
DISTRIBUTOR				1		1	1		1
SPARK PLUG				1		1	1		1
LEAKS				1		1	1		1
FUEL SYSTEM									
PRIMING SYSTEM				1		1	1		1
CARBURETOR				2		2	2		2
PUMPS				1		1	1		1
VENTS, DRAINS, TANK CAPS				1		1	1		1
LUBRICATING SYSTEM									
OIL COOLERS				1		1	1		1
REGULATORS				1		1	1		1
COOLING SYSTEM									
PROPELLER AND ACCESSORIES									
EXHAUST SYSTEM									
OTHER				1		1	1		1
ENGINE ACCESSORIES									
ENGINE CONTROLS-COCKPIT									
THROTTLE-POWER LEVER ASSEMBLIES				1		1	1		1
POWERPLANT-INSTRUMENTS									
FUEL QUANTITY GAUGE					1	1		1	1
MISCELLANEOUS									
POWERPLANT FAILURE FOR UNDETERMINED REASONS	1		1	21		21	22		22
COMPRESSOR STALLS				1		1	1		1
OTHER				1		1	1		1
REDUCTION GEAR ASSEMBLY									
COMPRESSOR ASSEMBLY									

POWERPLANT (CONTINUED)

CAUSE/FACTOR TABLE

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
COMBUSTION ASSEMBLY									
TURBINE ASSEMBLY									
VANES, GUIDE				1		1	1		1
WHEEL, TURBINE				1		1	1		1
BLADE, TURBINE WHEEL				1		1	1		1
ACCESSORY DRIVE ASSEMBLY									
LUBRICATING SYSTEM									
TUBING				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	1		1	57	1	58	58	1	59
** INSTRUMENTS/EQUIPMENT AND ACCESSORIES **									
FLIGHT AND NAVIGATION INSTRUMENTS									
OTHER					1	1		1	1
COMMUNICATIONS AND NAVIGATION EQUIPMENT									
MISCELLANEOUS EQUIPMENT									
SPRAY, DUSTING EQUIPMENT				2		2	2		2
PICK-UP EQUIPMENT	1		1				1		1
SUBTOTAL	1		1	2	1	3	3	1	4
** ROTORCRAFT **									
ROTOR ASSEMBLIES									
MAIN ROTOR BLADES	1		1	1		1	2		2
TAIL ROTOR BLADES				4	2	6	4	2	6
OTHER				1		1	1		1
TRANSMISSION ROTOR DRIVE SYSTEM									
MAIN ROTOR GEAR BOX	1		1				1		1
MAIN ROTOR PULLEYS, BELTS				1		1	1		1
CLUTCH ASSEMBLY				2		2	2		2
OTHER				1		1	1		1
FLIGHT CONTROL SYSTEMS									
CYCLIC PITCH CONTROL SYSTEM				2		2	2		2
COLLECTIVE PITCH CONTROL SYSTEM				1	1	2	1	1	2
TAIL ROTOR PITCH CONTROL SYSTEM				2		2	2		2
STABILIZING SURFACES-DAMPERS				2		2	2		2
MIXING UNIT				1		1	1		1
MISCELLANEOUS UNITS AND ASSEMBLIES									
TAIL BOOMS/PYLONS/CONES	1		1				1		1
OTHER				1		1	1		1
SUBTOTAL	3		3	19	3	22	22	3	25
** AIRPORTS/AIRWAYS/FACILITIES **									
AIRPORT FACILITIES									
RAMP FACILITIES					1	1		1	1
AIRPORT CONDITIONS									
UNMARKED OBSTRUCTIONS				1		1	1		1
SOFT SHOULDERS (RUNWAY)				1		1	1		1
OTHER				4		4	4		4
AIRWAYS FACILITIES									
SUBTOTAL				6	1	7	6	1	7

CAUSE/FACTOR TABLE

WEATHER (CONTINUED)

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
** WEATHER **									
LOW FLYING		1	1	1	1	2	1	2	3
RAIN					1	1		1	1
FOG	1	1	2	2		2	3	1	4
SNOW				1		1	1		1
CONDITIONS CONDUCTIVE TO CARB/INDUCTION SYSTEM ICING	1		1	1		1	2		2
UNFAVORABLE WIND CONDITIONS				5	3	8	5	3	8
TURBULENCE ASSOCIATED WITH CLOUDS AND/OR THUNDERSTORMS	1		1				1		1
DOWNDRAFTS, UPDRAFTS					1	1		1	1
HIGH TEMPERATURE					1	1		1	1
HIGH DENSITY ALTITUDE				2	2	4	2	2	4
THUNDERSTORM ACTIVITY		1	1					1	1
SUBTOTAL	3	3	6	12	9	21	15	12	27
** TERRAIN **									
WET, SOFT GROUND				6	3	9	6	3	9
SNOW COVERED				2	2	4	2	2	4
HIGH VEGETATION				5	1	6	5	1	6
HIDDEN OBSTRUCTIONS				1		1	1		1
ROUGH/UNEVEN				5	4	9	5	4	9
ROUGH WATER	1		1	1		1	2		2
HIGH OBSTRUCTIONS	3	4	7	16	16	32	19	20	39
SAND				1		1	1		1
OTHER	1	1	2	9	5	14	10	6	16
SUBTOTAL	5	5	10	46	31	77	51	36	87
** MISCELLANEOUS **									
EVASIVE MANEUVER TO AVOID COLLISION				3		3	3		3
FOREIGN OBJECT DAMAGE				1		1	1		1
FOREIGN MATERIAL AFFECTING NORMAL OPERATIONS				3	1	4	3	1	4
UNDETERMINED				1		1	1		1
SUBTOTAL				8	1	9	8	1	9
GRAND TOTAL	47	11	58	430	57	487	477	68	545
** MISCELLANEOUS ACTS, CONDITIONS **									
CREW COORDINATION-POOR	1		1	2		2	3		3
DISREGARD OF GOOD OPERATING PRACTICE				1		1	1		1
IMPROPER EMERGENCY PROCEDURES	1		1				1		1
INSTRUCTIONS-MISINTERPRETED	1		1				1		1
INATTENTIVE TO FUEL SUPPLY				1		1	1		1
POORLY PLANNED APPROACH				1		1	1		1
MISCALCULATED FUEL CONSUMPTION				2	1	3	2	1	3
JETTISONED LOAD				1	1	2	1	1	2
STOLEN OR UNAUTHORIZED USE OF AIRCRAFT				1		1	1		1
IMPROPERLY SECURED				1		1	1		1
FATIGUE FRACTURE	2		2	4		4	6		6
RPM-UNCONTROLLABLE-OVERSPEED					1	1		1	1
SEPARATION IN FLIGHT		3	3		7	7		10	10
FIRE IN ENGINE				1		1	1		1
LATERAL IMBALANCE				1		1	1		1
CORROSION/CORROSION				1		1	1		1
PILOT FATIGUE				1	1	2	1	1	2
FUEL EXHAUSTION				14		14	14		14
FUEL CONTAMINATION-EXCLUSIVE OF WATER IN FUEL				3		3	3		3
PILOT SUFFERED HEART ATTACK		1	1					1	1
ICE-CARBURETOR	1		1				1		1
IMPROPERLY LOADED AIRCRAFT-WEIGHT-AND/OR CG				1	1	2	1	1	2
WHITE OUT				1	1	2	1	1	2
SUNGLASS					2	2		2	2
LACK OF LUBRICATION-SPECIFIC PART, NOT SYSTEM				1		1	1		1
OIL EXHAUSTION-ENGINE LUBRICATION SYSTEM				2		2	2		2
SIMULTANEOUS CONDITIONS		1	1	13	8	21	13	9	22
WATER IN FUEL				2		2	2		2

CAUSE/FACTOR TABLE

MISCELLANEOUS ACTS, CONDITIONS (CONTINUED)

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
AIRCRAFT CAME TO REST IN WATER		4	4		14	14		18	18
MISSING				1		1	1		1
OVERLOAD FAILURE				1	8	9	1	8	9
MATERIAL FAILURE	1		1	19	2	21	20	2	22
FUEL STARVATION				4		4	4		4
PREVIOUS DAMAGE				1		1	1		1
LEAK/LEAKAGE				1		1	1		1
DOWNWIND				1	13	14	1	13	14
CARBON DEPOSITS				1		1	1		1
GROUND RESONANCE	1		1	3		3	4		4
BRITTLE	1		1				1		1
CHAFFED				1		1	1		1
FRAYED				1		1	1		1
IMPROPERLY INSTALLED				1		1	1		1
OBSTRUCTED				2		2	2		2
OVERHEATED				3		3	3		3
PRESSURE TOO LOW				1		1	1		1
SCORED				3		3	3		3
STICKING				1		1	1		1
EXCESSIVE TEMPERATURE				2		2	2		2
ICE-INDUCTION				1		1	1		1
LOAD NOT JETTISONED				2		2	2		2

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

ANALYTIC TABLE

KIND OF FLYING VS INJURY INDEX
ROTORCRAFT-1971

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
INSTR CTIONAL						
DUAL		1	12		13	13
SOLO		1	2		3	3
CHECK			4		4	4
TRAIN NG			3		3	3
NONCO MERCIAL						
PLEAS RE	5	4	5	25	39	39
PRACT CE	1	2	1	6	10	10
BUSIN SS		1	1	3	5	5
CORPO ATE/EXECUTIVE			2	3	5	5
AERIA SURVEY		1	1	2	4	4
COMPA Y FLIGHT						
OTHER				1	1	1
COMME CIAL						
AERIA APPLICATION	4	3	5	24	36	36
CROP ONTROL RELATED FLIGHT	1	3	2	16	22	22
FIRE ONTROL	1	1	1	1	4	4
FIRE ONTROL RELATED FLIGHT	1		1	4	6	6
AERIA MAPPING/PHOTOGRAPHY			4	3	7	7
AERIA ADVERTISING						
POWER AND PIPELINE PATROL		1			1	1
OTHER						

ANALYTIC TABLE

KIND OF FLYING VS INJURY INDEX
ROTORCRAFT-1971
(CONTINUED)

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
FISH SPOTTING						
AIR TAXI-PASSENGER OPERATIONS	5	4	2	9	20	20
AIR TAXI-CARGO OPERATIONS						
CONSTRUCTION WORK	1			2	3	3
SCHEDULED PASSENGER SERVICE						
SCHEDULED CARGO SERVICE						
INTRA-STATE CHARTER PASSG.			1		1	1
INTRA-STATE CHARTER CARGO.						
MILITARY CONTRACT-PASSENGER						
MILITARY CONTRACT-CARGO						
CHARTER CARGO-DOMESTIC			1	1	2	2
CHARTER PASSG-DOMESTIC	1	1	1	5	8	8
CHARTER-CARGO-INTERNATIONAL						
CHARTER-PASSG-INTERNATIONAL						
OTHER				2	2	2
UNKNOWN/NOT REPORTED						
MISCELLANEOUS						
EXPERIMENTATION						
TEST		1		5	6	6
DEMONSTRATION		1		1	2	2
FERRY	3		3	6	12	12

ANALYTIC TABLE

KIND OF FLYING VS INJURY INDEX
ROTORCRAFT-1971
(CONTINUED)

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
SEARCH AND RESCUE	1	1	3		5	4
AIR SHOW/AIR RACING						
PARACHUTE JUMP						
PARACHUTE JUMP-AIR SHOW						
TOWING GLIDERS						
SEEDING CLOUDS						
HUNTING			1		1	1
POLICE PATROL	2	2	3	8	15	14
ALL OTHER PUBLIC FLYING	1		2	2	5	5
OTHER				1	1	1
UNKNOWN/NOT REPORTED				1	1	1

ANALYTIC TABLE

KIND OF FLYING VS AIRCRAFT DAMAGE
ROTORCRAFT-1971

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS
INSTRUCTIONAL						
DUAL	3	10			13	13
SOLO		3			3	3
CHECK		4			4	4
TRAINING	1	2			3	3
NONCOMMERCIAL						
PLEASURE	9	30			39	39
PRACTICE	2	8			10	10
BUSINESS	2	3			5	5
CORPORATE/EXECUTIVE		5			5	5
AERIAL SURVEY	3	1			4	4
COMPANY FLIGHT						
OTHER		1			1	1
COMMERCIAL						
AERIAL APPLICATION	12	24			36	36
CROP CONTROL RELATED FLIGHT	6	15	1		22	22
FIRE CONTROL	1	3			4	4
FIRE CONTROL RELATED FLIGHT	2	4			6	6
AERIAL MAPPING/PHOTOGRAPHY	3	4			7	7
AERIAL ADVERTISING						
POWER AND PIPELINE PATROL		1			1	1
OTHER						

ANALYTIC TABLE

KIND OF FLYING VS AIRCRAFT DAMAGE
ROTORCRAFT-1971
(CONTINUED)

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS
FISH POTTING						
AIR T XI-PASSENGER OPERATIONS	7	13			20	20
AIR T XI-CARGO OPERATIONS						
CONST UCTION WORK	1	2			3	3
SCHED LED PASSENGER SERVICE						
SCHED LED CARGO SERVICE						
INTRA STATE CHARTER PASSG.		1			1	1
INTRA STATE CHARTER CARGO.						
MILIT RY CONTRACT-PASSENGER						
MILIT RY CONTRACT-CARGO						
CHART R CARGO-DOMESTIC	1	1			2	2
CHART R PASSG-DOMESTIC	3	5			8	8
CHART R-CARGO-INTERNATIONAL						
CHART R-PASSG-INTERNATIONAL						
OTHER		2			2	2
UNKNO N/NOT REPORTED						
MISCE LANEOUS						
EXPER MENTATION						
TEST	1	5			6	6
DEMON TRATION		1	1		2	2
FERRY	3	9			12	12
OTHER						

ANALYTIC TABLE

KIND OF FLYING VS AIRCRAFT DAMAGE
 ROTORCRAFT-1971
 (CONTINUED)

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS
SEARCH AND RESCUE	1	4			5	4
AIR SHOW/AIR RACING						
PARACHUTE JUMP						
PARACHUTE JUMP-AIR SHOW						
TOWING GLIDERS						
SEEDING CLOUDS						
HUNTING			1		1	1
POLICE PATROL	4	11			15	14
ALL OTHER PUBLIC FLYING	2	3			5	5
OTHER	1				1	1
UNKNOWN/NOT REPORTED		1			1	1

INJURIES, ACCIDENTS
ROTORCRAFT-1971

	INJURIES					TOTAL
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	
PILOT	19	22	42	164		247
COPILOT			1	5		6
DUAL STUDENT				13		13
CHECK PILOT				4		4
FLIGHT ENGINEER			1			1
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW		2	2	6		10
PASSENGERS	11	10	28	93		142
 TOTAL	 30	 34	 74	 285	 ABOARD	 423
 OTHER AIRCRAFT						
OTHER GROUND	5	2	1			8
 GRAND TOTAL	 35	 36	 75	 285		 431

INVOLVES 245 TOTAL ACCIDENTS
INVOLVES 26 FATAL ACCIDENTS

GENERAL AVIATION ACCIDENTS

GLIDER AIRCRAFT

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ANALYTIC TABLE

TYPE OF ACCIDENT VS AIRCRAFT DAMAGE
GLIDERS-1971

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS
GROUND-WATER LOOP-SWERVE	3				3	3
DAGGED WINGTIP POD OR FLOAT						
WHEEL-UP LANDING						
WHEEL-DOWN LANDING IN WATER						
GEAR COLLAPSED						
GEAR RETRACTED						
HARD LANDING	2				2	2
NOSE OVER/DOWN						
ROLL OVER						
OVERSHOOT	2				2	2
UNDERSHOOT	10				10	10
COLLISION BETWEEN AIRCRAFT						
BOTH IN FLIGHT						
ONE AIRBORNE						
BOTH ON GROUND						
COLLISION WITH GROUND/WATER						
CONTROLLED	2				2	2
UNCONTROLLED	1	1			2	2
COLLIDED WITH						
WIRES/POLES	1				1	1
TREES	1	2			3	3
OTHER						

ANALYTIC TABLE

TYPE OF ACCIDENT VS AIRCRAFT DAMAGE
GLIDERS-1971
(CONTINUED)

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS
RESIDENCE/S						
BUILDING/S						
FENCE, FENCEPOSTS		1			1	1
ELECTRONIC TOWERS						
RUNWAY OR APPROACH LIGHTS						
AIRPORT HAZARD						
ANIMALS						
CROP						
FLAGMAN LOADER						
DITCHES						
SNOWBANK						
PARKED AIRCRAFT						
AUTOMOBILE						
DIRT BANK						
OBJECT		7			7	7
BIRD STRIKE						
STALL	1	8			9	9
SPIN	4	2			6	6
SPIRAL						
MUSH						
FIRE OR EXPLOSION						

ANALYTIC TABLE

TYPE OF ACCIDENT VS AIRCRAFT DAMAGE
GLIDERS-1971
(CONTINUED)

DESTROYED
SUBSTANTIAL
MINOR
NONE

RECORDS ACCIDENTS

IN FLIGHT				
ON GROUND				
AIRFRAME FAILURE				
IN FLIGHT	4	1	5	5
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				
HAIL DAMAGE TO AIRCRAFT				
LIGHTNING STRIKE				
EVASIVE MANEUVER				
UNCONTROLLED ALT DEVIATION				
DITCHING				
MISSING ACFT NOT RECOVERED				
MISCELLANEOUS/OTHER	2		2	2
UNDETERMINED				

ANALYTIC TABLE

PHASE OF OPERATION VS INJURY INDEX-GLIDER-1971

FATAL
SERIOUS
MINOR
NONE

RECORDS ACCIDENTS

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			1		1
INITIAL CLIMB	1	1	1		3
VERTICAL					

ANALYTIC TABLE

PHASE OF OPERATION VS INJURY INDEX-GLIDER-1971
(CONTINUED)

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
RUNNING						
ABORTED						
ABORTED						
ABORTED						
OTHER	1		1		2	2
INFLIGHT						
CLIMB TO CRUISE						
NORMAL CRUISE						
DESCENDING						
HOLDING						
HOVERING						
POWER-ON DESCENT						
AUTOMATIC DESCENT						
ACROBATICS	1				1	1
BUZZING						
UNCONTROLLED DESCENT						
EMERGENCY DESCENT						
LOW PASS						
OTHER	5	2	1	2	10	10
EN ROUTE TO TREAT CROP						
EN ROUTE TO RELOADING AREA						

ANALYTIC TABLE

PHASE OF OPERATION VS INJURY INDEX-GLIDER-1971
(CONTINUED)

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
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	2	3			5	5
FINAL APPROACH		4	2	9	15	15
INITIAL APPROACH						
FINAL APPROACH						
LEVEL OFF/TOUCHDOWN			1	7	8	8
ROLL				9	9	9
ROLL-ON/RUN-ON						
POWER-ON LANDING						
POWER-OFF AUTOROTATIVE LDG						
GO-AROUND						
MISSED APPROACH						
OTHER				1	1	1
UNKNOWN/NOT REPORTED						

CAUSE/FACTOR TABLE

GLIDERS-1971

INVOLVES 55 TOTAL ACCIDENTS
INVOLVES 10 FATAL ACCIDENTS

BROAD CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
PILOT	8 80.00	.00	80.00	38 84.44	4 8.89	38 84.44	46 83.64	4 7.27	46 83.64
PERSONNEL	2 20.00	.00	20.00	1 2.22	.00	1 2.22	3 5.45	.00	3 5.45
AIRFRAME	1 10.00	.00	10.00	2 4.44	.00	2 4.44	3 5.45	.00	3 5.45
LANDING GEAR	.00	.00	.00	.00	.00	.00	.00	.00	.00
POWERPLANT	.00	.00	.00	.00	.00	.00	.00	.00	.00
SYSTEMS	.00	.00	.00	.00	.00	.00	.00	.00	.00
INSTRUMENTS/EQUIPMENT AND ACCESSORIES	.00	.00	.00	1 2.22	.00	1 2.22	1 1.82	.00	1 1.82
ROTORCRAFT	.00	.00	.00	.00	.00	.00	.00	.00	.00
AIRPORTS/AIRWAYS/FACILITIES	.00	.00	.00	.00	1 2.22	1 2.22	.00	1 1.82	1 1.82
WEATHER	.00	.00	.00	6 13.33	8 17.78	14 31.11	6 10.91	8 14.55	14 25.45
TERRAIN	.00	.00	.00	2 4.44	8 17.78	10 22.22	2 3.64	8 14.55	10 18.18
MISCELLANEOUS	.00	.00	.00	2 4.44	.00	2 4.44	2 3.64	.00	2 3.64
UNDETERMINED	1 10.00	.00	10.00	1 2.22	.00	1 2.22	2 3.64	.00	2 3.64

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

GLIDERS-1971

INVOLVES 55 TOTAL ACCIDENTS
INVOLVES 10 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	1		1				1		1
EXCEEDED DESIGN STRESS LIMITS OF 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	5		5	8		8	13		13
FAILED TO USE OR INCORRECTLY USED MISC EQUIPMENT				1	1	2	1	1	2
FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES ETC				2	1	3	2	1	3
IMPROPER OPERATION OF FLIGHT CONTROLS	3		3	5		5	8		8
IMPROPER LEVEL OFF				1		1	1		1
IMPROPER IN-FLIGHT DECISIONS OR PLANNING				10		10	10		10
INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING				3		3	3		3
INADEQUATE SUPERVISION OF FLIGHT				2		2	2		2
LACK OF FAMILIARITY WITH AIRCRAFT	1		1	2	3	5	3	3	6
SELECTED UNSUITABLE TERRAIN				2		2	2		2
MISJUDGED DISTANCE, SPEED, AND ALTITUDE				1		1	1		1
MISJUDGED DISTANCE AND SPEED				2		2	2		2
MISJUDGED DISTANCE AND ALTITUDE				6		6	6		6
MISJUDGED SPEED	1		1				1		1
MISJUDGED CLEARANCE				2		2	2		2
IMPROPER RECOVERY FROM BOUNCED LANDING				1		1	1		1
INCAPACITATION	1		1				1		1
FAILED TO MAINTAIN DIRECTIONAL CONTROL				1		1	1		1
SUBTOTAL	13		13	51	5	56	64	5	69
DUAL STUDENT									
FAILED TO OBTAIN/MAINTAIN FLYING SPEED				1		1	1		1
SUBTOTAL				1		1	1		1
** PERSONNEL **									
FLIGHT INSTRUCTOR									
INADEQUATE TRAINING OF STUDENT	1		1				1		1
MAINTENANCE, SERVICING, INSPECTION									
OPERATIONAL SUPERVISORY PERSONNEL									
WEATHER PERSONNEL									
TRAFFIC CONTROL PERSONNEL									
AIRPORT SUPERVISORY PERSONNEL									
AIRWAYS FACILITIES PERSONNEL									
PRODUCTION-DESIGN-PERSONNEL									
OTHER	1		1				1		1
MISCELLANEOUS-PERSONNEL									
PILOT OF OTHER AIRCRAFT				1		1	1		1
THIRD PILOT									
FLIGHT ENGINEER									
DISPATCHING									
SUBTOTAL	2		2	1		1	3		3
** AIRFRAME **									
WINGS									
OTHER				1		1	1		1
FUSELAGE									
RULKHEADS				1		1	1		1
LANDING GEAR									
FLIGHT CONTROL SURFACES									
ELEVATOR, ASSEMBLY ATTACHMENTS	1		1				1		1
SUBTOTAL	1		1	2		2	3		3
** INSTRUMENTS/EQUIPMENT AND ACCESSORIES **									

CAUSE/FACTOR TABLE

INSTRUMENTS/EQUIPMENT AND ACCESSORIES (CONTINUED)

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
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									
HIGH VEGETATION					1	1		1	1
HIDDEN HAZARD					1	1		1	1
AIRWAYS FACILITIES									
SUBTOTAL					2	2		2	2
** WEATHER **									
UNFAVORABLE WIND CONDITIONS				2	3	5	2	3	5
SUDDEN WINDSHIFT				1		1	1		1
DOWNDRAFTS, UPDRAFTS				3	2	5	3	2	5
OTHER				1	3	4	1	3	4
SUBTOTAL				7	8	15	7	8	15
** TERRAIN **									
HIGH VEGETATION					1	1		1	1
HIDDEN OBSTRUCTIONS					1	1		1	1
ROUGH UNEVEN				1	1	2	1	1	2
HIGH OBSTRUCTIONS					3	3		3	3
OTHER				1	2	3	1	2	3
SUBTOTAL				2	8	10	2	8	10
** MISCELLANEOUS **									
EVASIVE MANEUVER TO AVOID COLLISION				1		1	1		1
UNDETERMINED	1		1	1		1	2		2
DIRECT ENTRIES				1		1	1		1
SUBTOTAL	1		1	3		3	4		4
GRAND TOTAL	17		17	68	23	91	85	23	108
** MISCELLANEOUS ACTS, CONDITIONS **									
ALTITUDE SETTING-INCORRECT					1	1		1	1
NOT ALIGNED WITH RUNWAY/INTENDED LANDING AREA					1	1		1	1
POORLY PLANNED APPROACH				1	3	4	1	3	4
SEPARATION IN FLIGHT		3	3		1	1		4	4
HYPOXIA	1		1				1		1
OVERLOAD FAILURE	2		2	1	1	2	3	1	4
MATERIAL FAILURE	1		1	2		2	3		3
INTENTIONAL GROUND-WATER LOOP-SWERVE				2		2	2		2

DIRECT ENTRY CAUSES

MISC-PRE-MATURE RELEASE FROM TOW AT TOO LOW ALT.

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

ANALYTIC TABLE

KIND OF FLYING VS INJURY INDEX GLIDERS-1971

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
INSTRUCTIONAL						
DUAL		1		3	4	4
SOLO	1			2	3	3
CHECK						
TRAINING	1			1	2	2
NONCOMMERCIAL						
PLEASURE	8	6	4	20	38	38
PRACTICE		2	1	3	6	6
BUSINESS						
CORPORATE/EXECUTIVE						
AERIAL SURVEY						
COMPANY FLIGHT						
OTHER						
COMMERCIAL						
AERIAL APPLICATION						
CROP CONTROL RELATED FLIGHT						
FIRE CONTROL						
FIRE CONTROL RELATED FLIGHT						
AERIAL MAPPING/PHOTOGRAPHY						
AERIAL ADVERTISING						
POWER AND PIPELINE PATROL						
OTHER						

ANALYTIC TABLE

KIND OF FLYING VS INJURY INDEX
GLIDERS-1971
(CONTINUED)

FATAL
SERIOUS
MINOR
NONE

RECORDS ACCIDENTS

FISH POTTING
AIR T XI-PASSENGER OPERATIONS
AIR T XI-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
MISCELLANEOUS
EXPERIMENTATION
TEST
DEMONSTRATION
FERRY
OTHER

1

1

1

ANALYTIC TABLE

KIND OF FLYING VS INJURY INDEX
GLIDERS-1971
(CONTINUED)

FATAL
SERIOUS
MINOR
NONE

RECORDS ACCIDENTS

SEARCH AND RESCUE

AIR SHOW/AIR RACING

PARACHUTE JUMP

PARACHUTE JUMP-AIR SHOW

TOWING GLIDERS

SEEDING CLOUDS

HUNTING

POLICE PATROL

ALL OTHER PUBLIC FLYING

OTHER

1

1

1

UNKNOWN/NOT REPORTED

ANALYTIC TABLE

KIND OF FLYING VS. AIRCRAFT DAMAGE GLIDERS-1971

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS
INSTRUCTIONAL						
DUAL		4			4	4
SOLO		3			3	3
CHECK						
TRAINING	1	1			2	2
NONCOMMERCIAL						
PLEASURE	10	28			38	38
PRACTICE		6			6	6
BUSINESS						
CORPORATE/EXECUTIVE						
AERIAL SURVEY						
COMPANION FLIGHT						
OTHER						
COMMERCIAL						
AERIAL APPLICATION						
CROP CONTROL RELATED FLIGHT						
FIRE CONTROL						
FIRE CONTROL RELATED FLIGHT						
AERIAL MAPPING/PHOTOGRAPHY						
AERIAL ADVERTISING						
POWER AND PIPELINE PATROL						
OTHER						

ANALYTIC TABLE

KIND OF FLYING VS AIRCRAFT DAMAGE
GLIDERS-1971
(CONTINUED)

DESTROYED
SUBSTANTIAL
MINOR
NONE

RECORDS ACCIDENTS

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
MISCELLANEOUS
EXPERIMENTATION
TEST
DEMONSTRATION
FERRY
OTHER

ANALYTIC TABLE

KIND OF FLYING VS AIRCRAFT DAMAGE
GLIDERS-1971
(CONTINUED)

DESTROYED
SUBSTANTIAL
MINOR
NONE

RECORDS ACCIDENTS

SEARCH AND RESCUE
AIR SHOW/AIR RACING
PARAJUTE JUMP
PARAJUTE JUMP-AIR SHOW
TOWING GLIDERS
SEEDING CLOUDS
HUNTING
POLICE PATROL
ALL OTHER PUBLIC FLYING
OTHER
UNKNOWN/NOT REPORTED

1

1

1

INJURIES, ACCIDENTS
GLIDERS-1971

		INJURIES						
		FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL	
PILOT	10	9	5	31			55	
COPLOT								
DUAL STUDENT			1		3		4	
CHECK PILOT								
FLIGHT ENGINEER								
NAVIGATOR								
CABIN ATTENDANT								
EXTRA CREW								
PASSENGERS	1	1	2	7			11	
TOTAL	11	11	7	41			70	ABOARD
OTHER AIRCRAFT								
OTHER GROUND								
GRAND TOTAL	11	11	7	41			70	

INVOLVES 55 TOTAL ACCIDENTS
INVOLVES 10 FATAL ACCIDENTS

COLLISIONS BETWEEN AIRCRAFT

-160a-

ANALYTIC TABLE

TYPE OF COLLISION(1ST) VS INJURY INDEX

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
BOTH IN FLIGHT	38	8	4	12	62	31
ONE AIRBORNE		2	2	8	12	6
BOTH ON GROUND		2	8	17	27	14
RECORDS	38	12	14	37	101	
ACCIDENTS	19	6	7	19		51

ANALYTIC TABLE

TYPE OF COLLISION (2ND) VS INJURY INDEX

	FATAL	SERIOUS	MINOR	NONE	RECORDS
BOTH IN FLIGHT					
ONE AIRBORNE					
BOTH ON GROUND			1		1
RECORD			1		1

(INCLUDES ALL AIRCRAFT RECORDS INVOLVED IN COLLISIONS)

ANALYTIC TABLE

PHASES OF OPERATION(1ST) VS INJURY INDEX
COLLISIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS
STATIC					
IDLING ENGINE/S	1		2		3
IDLING ROTORS		1	1		2
TAXI					
TO TAKEOFF		2	6		8
FROM LANDING		1	3		4
OTHER			2		2
TAKEOFF					
RUN			1		1
INITIAL CLIMB		1	1		2
ABORTED			1		1
OTHER			1		1
INFLIGHT					
CLIMB TO CRUISE	1		2		3
NORMAL CRUISE	13	1	1		15
DESCENDING	1	1			2
ACROBATICS	1				1
OTHER	7				7
EN ROUTE TO RELOADING AREA	1				1
SWATH RUN	1				1
PROCEDURE TURNAROUND	1				1
LANDING					
TRAFFIC PATTERN-CIRCLING	4		5		9
FINAL APPROACH	7	6	3	3	19
LEVEL OFF/TOUCHDOWN			2	3	5
ROLL		2	3	3	8
POWER-ON LANDING			1	1	2
GO-AROUND		1		1	2
OTHER				1	1

(INCLUDES ALL AIRCRAFT RECORDS INVOLVED IN COLLISIONS)

CAUSE/FACTOR TABLE
COLLISIONS

INVOLVES 51 TOTAL ACCIDENTS
INVOLVES 19 FATAL ACCIDENTS

BROAD CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
PILOT	17 89.47	5 26.32	17 89.47	32 96.97	10 30.30	32 96.97	49 94.23	15 28.85	49 94.23
PERSONNEL	17 89.47	3 15.79	17 89.47	32 96.97	4 12.12	32 96.97	49 94.23	7 13.46	49 94.23
AIRFRAME	.00	.00	.00	.00	.00	.00	.00	.00	.00
LANDING GEAR	.00	.00	.00	.00	.00	.00	.00	.00	.00
POWERPLANT	.00	.00	.00	.00	.00	.00	.00	.00	.00
SYSTEMS	.00	.00	.00	.00	.00	.00	.00	.00	.00
INSTRUMENTS/EQUIPMENT AND ACCESSORIES	.00	.00	.00	.00	.00	.00	.00	.00	.00
ROTORCRAFT	.00	.00	.00	.00	.00	.00	.00	.00	.00
AIRPORTS/AIRWAYS/FACILITIES	.00	.00	.00	1 3.03	4 12.12	5 15.15	1 1.92	4 7.69	5 9.62
WEATHER	1 5.26	1 5.26	2 10.53	.00	1 3.03	1 3.03	1 1.92	2 3.85	3 5.77
TERRAIN	.00	1 5.26	1 5.26	.00	.00	.00	.00	1 1.92	1 1.92
MISCELLANEOUS	1 5.26	.00	1 5.26	.00	.00	.00	1 1.92	.00	1 1.92
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

INVOLVES 51 TOTAL ACCIDENTS
INVOLVES 19 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	2	1	3	2	2	4
FAILED TO SEE AND AVOID OTHER AIRCRAFT	25		25	35	1	36	60	1	61
FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES ETC		2	2	5	6	11	5	8	13
IMPROPER LEVEL OFF				2		2	2		2
IMPROPER IFR OPERATION		1	1					1	1
INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING		2	2					2	2
INADEQUATE SUPERVISION OF FLIGHT				2		2	2		2
LACK OF FAMILIARITY WITH AIRCRAFT					1	1		1	1
EXERCISED POOR JUDGMENT	1	1	2	1	1	2	2	2	4
MISJUDGED DISTANCE, SPEED, AND ALTITUDE				1		1	1		1
MISJUDGED DISTANCE AND SPEED				1		1	1		1
MISJUDGED SPEED					1	1		1	1
MISJUDGED CLEARANCE	1		1	2		2	3		3
MISUNDERSTANDING OF ORDERS OR INSTRUCTIONS					1	1		1	1
IMPROPER RECOVERY FROM BOUNCED LANDING				2		2	2		2
INCAPACITATION	1		1				1		1
PHYSICAL IMPAIRMENT		2	2					2	2
FAILED TO MAINTAIN DIRECTIONAL CONTROL				1		1	1		1
FAILED TO INITIATE GO-AROUND				1		1	1		1
SUBTOTAL	28	9	37	55	12	67	83	21	104
** PERSONNEL **									
FLIGHT INSTRUCTOR									
MAINTENANCE, SERVICING, INSPECTION									
OPERATIONAL SUPERVISORY PERSONNEL									
INADEQUATE SUPERVISION OF FLIGHT CREW		1	1					1	1
WEATHER PERSONNEL									
TRAFFIC CONTROL PERSONNEL									
FAILURE OR DELAY IN INITIATING EMERGENCY PROCEDURES					2	2		2	2
ISSUED IMPROPER OR CONFLICTING INSTRUCTIONS					1	1		1	1
OTHER	4	1	5				4	1	5
AIRPORT SUPERVISORY PERSONNEL									
AIRWAYS FACILITIES PERSONNEL									
PRODUCTION-DESIGN-PERSONNEL									
MISCELLANEOUS-PERSONNEL									
PILOT OF OTHER AIRCRAFT	25	1	26	43	2	45	68	3	71
THIRD PILOT									
FLIGHT ENGINEER									
DISPATCHING									
SUBTOTAL	29	3	32	43	5	48	72	8	80
** AIRPORTS/AIRWAYS/FACILITIES **									
AIRPORT FACILITIES									
RAMP FACILITIES					1	1		1	1
AIRPORT CONDITIONS					1	1		1	1
ICE/SLUSH ON RAMP/TAXIWAY					2	2	2	2	4
OTHER									
AIRWAYS FACILITIES									
SUBTOTAL				2	4	6	2	4	6
** WEATHER **									
RAIN					1	1		1	1
OBSTRUCTIONS TO VISION		2	2					2	2
OTHER	2		2				2		2
SUBTOTAL	2	2	4		1	1	2	3	5

CAUSE/FACTOR TABLE

TERRA N (CONTINUED)

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
** TERRAIN **									
SNO -COVERED		2	2					2	2
UBTOTAL		2	2					2	2
** MISCELLANEOUS **									
DIRECT ENTRIES	2		2				2		2
JBOTAL	2		2				2		2
GRAND TOTAL	65	16	81	100	22	122	165	38	203
** MISCELLANEOUS ACTS, CONDITIONS **									
DISREGARD OF GOOD OPERATING PRACTICE				2	2	4	2	2	4
POORLY PLANNED APPROACH					3	3		3	3
ELECTRICAL FAILURE					1	1		1	1
SEPARATION IN FLIGHT		4	4					4	4
CONGESTED TRAFFIC-PATTERN					3	3		3	3
PILLOT SUFFERED HEART ATTACK	1		1				1		1
SUNGLARE					1	1		1	1
AIRCRAFT CAME TO REST IN WATER		2	2		1	1		3	3
TOUCH AND GO LANDING					4	4		4	4
OVERLOAD FAILURE					1	1		1	1

DIRECT ENTRY CAUSES

MISC- WADOT CLNC BTN ACFT DRG CLSD CRS AIR RACE.
MISC- WADOT CLNC RTN ACFT DRG CLSD CRS AIR RACE.

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

ANALYTIC TABLE

KIND OF FLYING VS INJURY INDEX
COLLISIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
INSTRUCTIONAL						
DUAL	6	6	2	8	22	19
SOLO	1	1	1	4	7	7
CHECK	1				1	1
TRAINING	1		2	2	5	5
NONCOMMERCIAL						
PLEASURE	12	4	7	11	34	24
PRACTICE	1			3	4	4
BUSINESS	3			2	5	5
CORPORATE/EXECUTIVE				2	2	2
AERIAL SURVEY						
COMPANY FLIGHT						
OTHER						
COMMERCIAL						
AERIAL APPLICATION	2				2	1
CROP CONTROL RELATED FLIGHT	2				2	1
FIRE CONTROL						
FIRE CONTROL RELATED FLIGHT						
AERIAL MAPPING/PHOTOGRAPHY						
AERIAL ADVERTISING						
POWER AND PIPELINE PATROL						
FISH SPOTTING	2				2	1
AIR TAXI-PASSENGER OPERATIONS				3	3	2
AIR TAXI-CARGO OPERATIONS						
CONSTRUCTION WORK						
SCHEDULED PASSENGER SERVICE						
SCHEDULED CARGO SERVICE						

CONTINUED ON NEXT PAGE

ANALYTIC TABLE

KIND OF FLYING VS INJURY INDEX
COLLISIONS
(CONTINUED)

FATAL
SERIOUS
MINOR
NONE

RECORDS ACCIDENTS

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				
MISCELLANEOUS				
EXPERIMENTATION				
TEST		1	1	1
DEMONSTRATION				
FERRY				
SEARCH AND RESCUE		2	2	1
AIR SHOW/AIR RACING	4		4	2
PARAJUTE JUMP				
PARAJUTE JUMP-AIR SHOW				
TOWING GLIDERS	1		1	1
SEEDING CLOUDS				
HUNTING				
POLICE PATROL		2	2	1
HIGHWAY TRAFFIC ADVISORY				
ALL OTHER PUBLIC FLYING				
OTHER				
UNKNOWN/NOT REPORTED				

ANALYTIC TABLE

SEGMENTS OF AVIATION VS INJURY INDEX COLLISIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
SML US GEN AVN-COLLISION SAME	32	10	14	38	94	47
SML US GEN AVN-LRG US GEN AVN						
SML US GEN AVN-US AIR CARRIER	4	2			6	3
SML US GEN AVN-US MILITARY	2				2	1
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						

(INCLUDES ALL AIRCRAFT RECORDS INVOLVED IN COLLISIONS)

ANALYTIC TABLE

CONTROLLED/UNCONTROLLED AIRPORT VS INJURY INDEX
COLLISIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
CONTROLLED AIRPORT	8	2		8	18	9	23.08
UNCONTROLLED AIRPORT	12	8	14	26	60	30	76.92
RECORDS	20	10	14	34	78		
ACCIDENTS	10	5	7	17		39	
PERCENT	25.6	12.8	17.9	43.6			

ANALYTIC TABLE

CONTROL ZONE VS INJURY INDEX
COLLISIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
CONTROL ZONE/AREA							
YES	10	4		10	24	12	27.91
NO	20	6	10	21	57	29	66.28
UNKNOWN	2		2	1	5	3	5.81
RECORDS	32	10	12	32	86		
ACCIDENTS	16	5	6	16		43	
PERCENT	37.2	11.6	14.0	37.2			

RECORDS WITH INFORMATION RECORDED

ANALYTIC TABLE

AIRPORT PROXIMITY VS INJURY INDEX COLLISIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS
ON AIRPORT	8	8	14	28	58
ON SEAPLANE BASE				2	2
ON HELIPORT					
ON BARGE/SHIP/PLATFORM					
IN TRAFFIC PATTERN	9	2		6	17
WITHIN 1/4 MILE	2	2			4
WITHIN 1/2 MILE	1				1
WITHIN 3/4 MILE	2				2
WITHIN 1 MILE	1				1
WITHIN 2 MILES					
WITHIN 3 MILES					
WITHIN 4 MILES					
WITHIN 5 MILES				2	2
BEYOND 5 MILES	15				15
UNKNOWN/NOT REPORTED					

(INCLUDES ALL AIRCRAFT RECORDS INVOLVED IN COLLISIONS)

ANALYTIC TABLE

TYPE FLIGHT PLAN VS AIRCRAFT DAMAGE COLLISIONS

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS
NONE	29	50	9	1	89
VFR	2	5	1		8
IFR		3	1		4
CONTROLLED VFR					
IFR					
TOWER EN ROUTE CONTROL SERVICE					
OVFR					
VFR FLIGHT FOLLOWING SERVICE					
SPECIAL VFR					
OTHER					
UNKNOWN/NOT REPORTED	1				1

ANALYTIC TABLE

TYPE WEATHER VS INJURY INDEX COLLISIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS
VFR	38	12	14	38	102
IFR					
BELOW MINIMUMS					
UNKNOWN/NOT REPORTED					

(INCLUDES ALL AIRCRAFT RECORDS INVOLVED IN COLLISIONS)

ANALYTIC TABLE

TYPE AIRCRAFT VS AIRCRAFT DAMAGE COLLISIONS

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS
FIXED-WING	32	54	11	1	98	49
ROTORCRAFT		4			4	2
GLIDER						
BALLOON						
BLIMP						
DIRIGIBLE						
ROCKET						
CONVERT IPLANE						
GYROPLANE						
OTHER						

ANALYTIC TABLE

CONDITIONS OF LIGHT VS INJURY INDEX COLLISIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
DAWN				2	2	1
DAYLIGHT	36	8	10	32	86	43
DUSK				4	4	2
NIGHT (DARK)		4	4		8	4
NIGHT (MOONLIGHT-BRIGHT)	2				2	1
UNKNOWN/NOT REPORTED						

(INCLUDES ALL AIRCRAFT RECORDS INVOLVED IN COLLISIONS)

ANALYTIC TABLE

PILOT CERTIFICATE VS INJURY INDEX COLLISIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS
STUDENT	4	2	8		14
PRIVATE	9	5	5	11	30
COMMERCIAL	7		3	6	16
AIRLINE TRANSPORT	5	1		1	7
PRIVATE W/FLIGHT INSTRUCTOR				1	1
COMBINED WITH FLT INSTRUCTOR	11	5	3	10	29
AIRLINE FLIGHT INSTRUCTOR	2	1	1	1	5
OTHER					
NONE					
UNKNOWN/NOT REPORTED					

(1) INCLUDES ALL AIRCRAFT RECORDS INVOLVED IN COLLISIONS)

ANALYTIC TABLE

STATE OF OCCURRENCE VS INJURY INDEX
COLLISIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS
ALASKA	2				2	1
ARKANSAS				2	2	1
CALIFORNIA	4	4	8	8	24	12
FLORIDA				2	2	1
ILLINOIS		2	2	2	6	3
IOWA	2			2	4	2
KANSAS	2				2	1
KENTUCKY	2				2	1
LOUISIANA	2	2			4	2
MARYLAND				2	2	1
MASSACHUSETTS				2	2	1
MICHIGAN		2	2		4	2
MISSOURI	2				2	1
NEW JERSEY	6				6	3
NEW MEXICO	2				2	1
NEW YORK				6	6	3
NORTH CAROLINA	2				2	1
OHIO		2	2		4	2
OREGON	4				4	2
PENNSYLVANIA	6				6	3
TEXAS	2			6	8	4
VIRGINIA				2	2	1
WISCONSIN				4	4	2

(INCLUDES ALL AIRCRAFT RECORDS INVOLVED IN COLLISIONS)

ANALYTIC TABLE

STATE OF OCCURRENCE VS AIRCRAFT DAMAGE
COLLISIONS

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS
ALASKA	1		1		2	1
ARKANSAS		2			2	1
CALIFORNIA	6	17	1		24	12
FLORIDA		2			2	1
ILLINOIS	2	4			6	3
IOWA	1	2		1	4	2
KANSAS	2				2	1
KENTUCKY	1		1		2	1
LOUISIANA	2	2			4	2
MARYLAND		1	1		2	1
MASSACHUSETTS		1	1		2	1
MICHIGAN	1	2	1		4	2
MISSOURI	1	1			2	1
NEW JERSEY	4	2			6	3
NEW MEXICO	1		1		2	1
NEW YORK		5	1		6	3
NORTH CAROLINA	1		1		2	1
OHIO		4			4	2
OREGON	3		1		4	2
PENNSYLVANIA	4	2			5	3
TEXAS	2	6			8	4
VIRGINIA		1	1		2	1
WISCONSIN		4			4	2

INCLUDES ALL AIRCRAFT RECORDS INVOLVED IN COLLISIONS)

INJURIES, ACCIDENTS
COLLISIONS(BOTH ON GROUND)

		INJURIES					
		FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT				4	24		28
COPILOT							
DUAL STUDENT				1	2		3
CHECK PILOT							
FLIGHT ENGINEER							
NAVIGATOR							
CABIN ATTENDANT							
EXTRA CREW							
PASSENGERS			1	2	11		14
TOTAL			1	7	37		45
							ABOARD
OTHER AIRCRAFT							
OTHER GROUND							
GRAND TOTAL			1	7	37		45
INVOLVES	14	TOTAL ACCIDENTS					
INVOLVES		FATAL ACCIDENTS					

(INCLUDES ALL AIRCRAFT RECORDS INVOLVED IN COLLISIONS)

INJURIES, ACCIDENTS
COLLISIONS (ONE AIRBORNE)

		INJURIES				
		FATAL	SERIOUS	MINOR	NONE	UNKNOWN
PILOT				1	11	
COPILOT						
DUAL STUDENT					2	
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS				1	19	
	TOTAL			2	32	ABOARD
OTHER AIRCRAFT						
OTHER GROUND			1			
GRAND TOTAL			1	2	32	

INVOLVES 6 TOTAL ACCIDENTS
INVOLVES FATAL ACCIDENTS

(INCLUDES ALL AIRCRAFT RECORDS INVOLVED IN COLLISIONS)

INJURIES, ACCIDENTS
COLLISIONS (BOTH AIRBORNE)

	INJURIES					TOTAL
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	
PILOT	28	5	2	27		62
COPILOT	3			5		8
DUAL STUDENT	3	3	2	9		17
CHECK PILOT	1					1
FLIGHT ENGINEER				2		2
NAVIGATOR						
CABIN ATTENDANT				12		12
EXTRA CREW						
PASSENGERS	10	2	1	138		151
TOTAL	45	10	5	193	ABOARD	253
OTHER AIRCRAFT						
OTHER GROUND	1					1
GRAND TOTAL	46	10	5	193		254

INVOLVES 31 TOTAL ACCIDENTS
INVOLVES 19 FATAL ACCIDENTS

(INCLUDES ALL AIRCRAFT RECORDS INVOLVED IN COLLISIONS)

YEARLY ACCIDENT RECORD

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ACCIDENTS, FATALITIES, RATES
U. S. GENERAL AVIATION

1962 - 1971

Year	Accidents		Fatalities	Aircraft- Hours Flown (000)**	Aircraft- Miles Flown (000)**	Accident Rates			
	Total	Fatal				Per 100,000 Aircraft- Hours Flown		Per Million Aircraft- Miles Flown	
						Total	Fatal	Total	Fatal
1962	4,840	430	857	14,500	1,964,586	33.4	2.97	2.46	0.219
1963	4,690	482	893	15,106	2,048,574	31.0	3.19	2.29	2.35
1964	5,069	526	1,083	15,738	2,180,818	32.2	3.34	2.32	0.241
1965	5,196	538	1,029	16,733	2,562,380	31.1	3.22	2.03	0.210
1966	5,712	573	1,149##	21,023	3,336,138	27.2	2.73	1.71	0.172
1967	6,115	603	1,229##	22,153	3,439,964	27.6	2.72	1.78	0.175
1968	4,968#	692#	1,399	24,053	3,700,864	20.6	2.86	1.34	0.186
1969	4,767	647	1,413##	25,351	3,926,461	18.8	2.55	1.21	0.164
1970	4,712	641	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

Three suicide/sabotage accidents included in all computations except rates.

Excludes air carrier fatalities (1966-2, 1967-104, 1969-82) when in collision with general aviation aircraft.

** Source: FAA

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 air carrier operations authorized by a certificate of public convenience and necessity, issued by the Civil Aeronautics Board.

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:

Prior to 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 cowlings, 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, substantial damage means damage or structural failure which adversely affects the structural strength, performance, or flight

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EXPLANATORY NOTES

AIRCRAFT ACCIDENT (con't)

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 cowlings, 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. Table 36 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).

CAUSE AND RELATED FACTORS

In determining the probable cause of an accident, all facts, conditions and circumstances are considered. 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 and Related Factor Table, the figures shown in the columns dealing with Cause will exceed the total number of accidents. The term Factor is used, in general, to reflect those elements of an accident which further explain or supplement the probable cause(s). This provision was incorporated in the coding system to increase its 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 different 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 due to the fact that certain numbers of these accidents are still under investigation and no cause determination could be made by the Safety Board. They were not, therefore, included in 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.

EXPLANATORY NOTES

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

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