

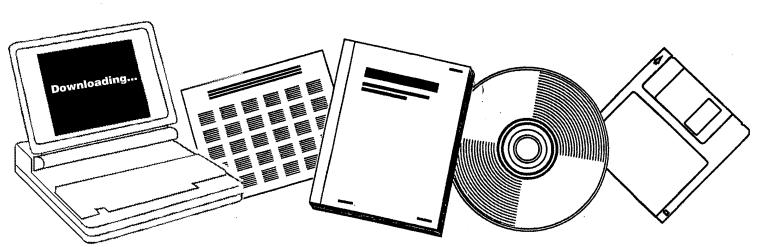
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ANNUAL REVIEW OF AIRCRAFT ACCIDENT DATA, U.S. GENERAL AVIATION, CALENDAR YEAR 1972

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

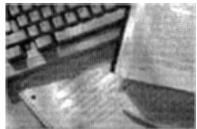
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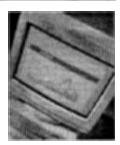
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ANNUAL REVIEW **OF** AIRCRAFT ACCIDENT DATA

U.S. GENERAL AVIATION **CALENDAR YEAR 1972**



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16.Abstract

The Annual Review of Aircraft Accident Data is a statistical compilation from reports of 4,256 general aviation accidents that occurred during calendar year 1972. Also included are 44 collisions between aircraft. By coding each aircraft involved in the collisions, an additional 44 records are produced, bringing total accidents records to 4,300.

17. Key Words Aircraft Accidents, U. S. General Aviation, accident rates, aviation safety, crash injuries, collisions between aircraft, small fixed-wing aircraft, large fixed-wing aircraft, rotorcraft, gyrocopters, gliders, cause/factor calculations

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ANNUAL REVIEW OF AIRCRAFT ACCIDENT DATA

U.S. GENERAL AVIATION CALENDAR YEAR 1972

NATIONAL TRANSPORTATION SAFETY BOARD Washington, D.C. 20591
REPORT NUMBER: NTSB-ARG-74-3

FOREWORD

The Statistical Review of General Aviation Accidents is published annually by the National Transportation Safety Board. This 1972 review contains statistical information compiled from reports of 4,256 general aviation accidents that occurred during the calendar year 1972.

In the analysis of accidents, a collision between aircraft is treated as one accident in the overall total. However, each aircraft involved in a collision is analyzed and coded completely. 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 be different for 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 in dual instruction, the accident would appear twice, once in the pleasure flying column and once in the dual instruction column.

Forty-four collisions between aircraft are included. By coding each aircraft involved in the collisions an additional 44 records were produced, bringing the total accident records to 4,300. One U.S. air carrier and two foreign registered aircraft were involved in these collisions. The tabulations of statistical information exclude these 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.

There are three accidents in this report with suicide as a cause/factor. They have been included in all computations except rates. These accidents occurred in small single engine fixed wing aircraft, two during pleasure flying and one during non scheduled air taxi passenger operations.

November 1974

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ANALYSIS OF STATISTICAL INFORMATION

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ANALYSIS OF ACCIDENTS Overview

In U. S. general aviation in 1972, 4,256 accidents occurred, an 8.43-percent decrease from the 4,648 accidents in 1971. (See Table 1.) Since 1968, the number of general aviation accidents has decreased each year. (See Figure 1.)

Fatal accidents increased steadily from 1963 to a high of 692 in 1968, but reversed this trend in 1969 and 1970. In 1969, there were 647 fatal accidents, a 6.5-percent decrease from 1968, and the 641 fatal accidents in 1970 reflect a further 0.93-percent decrease over 1969. However, in 1971, fatal accidents increased to 661 (3.12-percent increase), and in 1972 fatal accidents increased to 695 (5.14-percent increase).

In 1972, 4,300 aircraft were involved in 4,256 general aviation accidents. More than 23 percent of these aircraft were destroyed, and 75 percent were damaged substantially. Of the 4,256 accidents, 695 were fatal (16.3 percent), and 386 resulted in serious injury (9.1 percent). Minor injuries occurred in 585 accidents (13.7 percent); there were no injuries in 2,589 accidents, 60.8 percent of the total.

Of the 8,793 persons aboard the general aviation aircraft involved in accidents in 1972, 1,383 (15.7 percent) were fatally injured, 566 (7.6 percent) were injured seriously, 1,116 persons (12.7 percent) were injured slightly, and 5,627 (64 percent) were not injured. An average of 2.05 persons were aboard each general aviation aircraft involved in an accident during 1972.

Fire ensued after impact in 186 (26.8 percent) fatal accidents, but in only 110 (3.1 percent) nonfatal accidents, i.e., 62.8 percent of the accidents in which fire ensued after impact were fatal.

In 1972, U. S. general aviation aircraft flew 27 million aircraft-hours, 1.5 million more aircraft hours than reported for 1971 and nearly twice the 1963 total of 15 million hours. During the same period, the trend for the total accident rate per 100,000 aircraft-hours flown has been downward. 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 from a change in the definition of "substantial damage" (Section 430.2 of the National Transportation Safety Board's

Regulations). From 1968 to 1972, the accident trend was downward -- from 4,968 accidents in 1968 to 4,256 in 1972. The trend of the total accident rate per 100,000 aircraft-hours flown has also been decreasing, 20.6 in 1968 to 15.8 in 1972.

Since 1964, the fatal accident rate per 100,000 aircraft-hours flown has been decreasing, 3.34 in 1964 to 2.57 in 1972, with a low of 2.46 in 1970.

Table 1

Overview
U. S. General Aviation
1971 - 1972

	1971	1972	Percentage Change
Aircraft-hours flown	25,512,000	26,974,000	+ 5.73
Eligible aircraft	131,149	145,010	+ 10.57
Total accidents	4,648	4,256	- 8.43
Aircraft involved 1/	4,699	4,300	- 8.49
Aircraft damage Destroyed Substantial Minor/none Unknown/not reported	1,060 3,592 48 0	1,026 3,226 29 19	- 3.21 - 10.19 - 39.58 Undefined
Injury index Fatal Serious Minor None Unknown/not reported	661 409 640 2,938	695. 386 585 2,589 1	+ 5.14 - 5.62 - 8.59 - 11.88 Undefined
Injuries 2/ Fatal Serious Minor None Unknown/not reported	1,355 745 1,207 6,413 0	1,426 683 1,152 5,636	+ 5.24 - 8.32 - 4.56 - 12.12 Undefined
Total aboard	9,505	8,793	- 7.49
Fire after impact 1/ Fatal accidents Nonfatal accidents	207 125	186 110	- 10.14 - 12.00

^{1/} Includes all aircraft involved in collisions.

^{2/} Includes persons aboard aircraft involved in collisions with general aviation aircraft along with persons injured on the ground.

ACCIDENTS, FATALITIES
U. S. GENERAL AVIATION
1963-1972

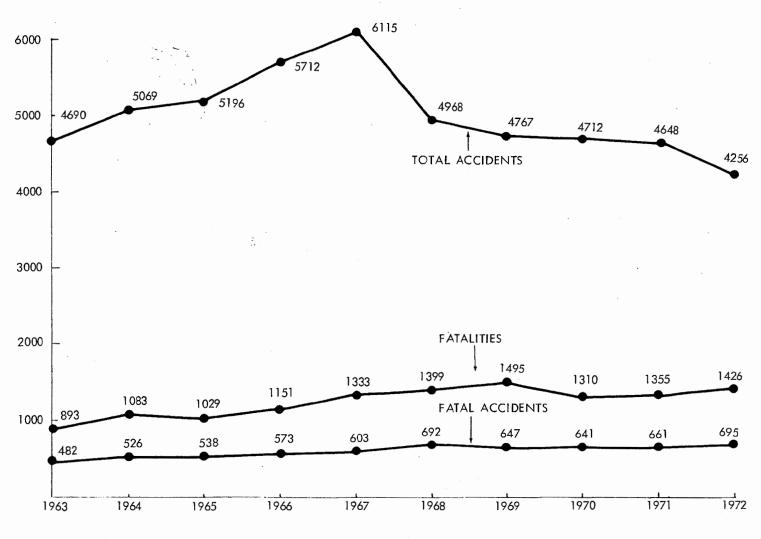
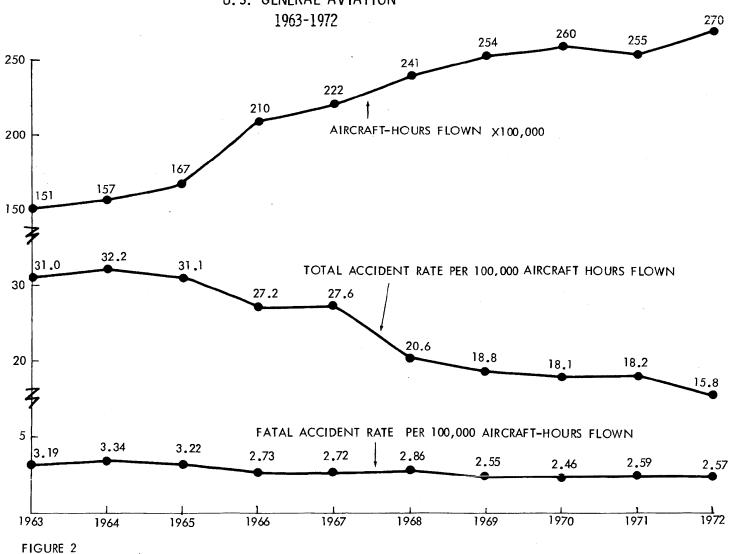


FIGURE 1

7

AIRCRAFT - HOURS FLOWN, ACCIDENT RATES U.S. GENERAL AVIATION



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Type of Accident

The 10 types of accidents which occurred most frequently in 1972 are listed below in descending order of frequency:

Table 2 Ten Most Frequent First Types of Accidents

Total Accidents - 4,256

First Type of Accident	Frequency	Percent of Total
Engine failure or malfunction	919	21.59
Ground-water loop-swerve	569	13.37
Hard landing	309	7.26
Stall	207	4.86
Collided with trees	199	4.68
Overshoot	175	4.11
Collision with ground/water, uncontrolled	174	4.09
Collided with wires/poles	171	4.02
Nose over/down	150	3.52
Stall/mush	146	3.43

An analysis of the accident record of the types of certificates held by the pilots involved in the 10 most frequent accident types is summarized in Table 3. The qualitative ratings for 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:

$$x^2 = \frac{(F_0 - F_e)^2}{F_e}$$

 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 > 3.84 but = or < 10.8, a qualitative rating of low equation was (L) or high (H) was recorded, depending on whether the sign of the difference between Fo - Fe was negative or positive. When the numerical rating was > 10.8, a qualitative rating of very low (VL) or very high (VH) was given. When the numerical rating was < or = 3.84, a qualitative rating of average (a) was assigned. A rating of L or H means that the statistical difference between Fo and Fe 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.

Analysis of Accident Records by Accident Type and Pilot Certificate

Pilot Certificate

	First Type of Accident	Student	Private	Commercial	Airline Transport	Commercial With Flight Instructor	Airline Trans. With Flight Instructor
	Engine failure or malfunction	VΓ	a	н	a	Н	a
	Ground-water loop- swerve	VH	a	VL	a	L	a.
	Hard landing	VH	a	ΛΓ	L	a	a
□	Stall	a.	a.	a	a	a	L
t	Collided with trees	a	a	a	a	a	a
	Overshoot	a´	Н	L	a	L	a
	Collision with ground/ water, uncontrolled	a	Н	a	a	a	a
	Collided with wires/poles	a	L	VH	a	a a	a.
	Nose over/down	a	a	a	a	a	a.
	Stall, mush	a	a	a.	a	a	a

L - low

VL - very low

H - high

VH - very high

a - average

Table 4

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

Pilot Certificate

				Airline	Commercial With Flight	Airline Trans With Flight	. Total (All Pilot
First Type of Accident	Student	Private	Commercial	Transport	Instructor	Instructor	Certificates)
Engine failure or malfunction	72(120)	365(398)	258(219)	30(28)	156(121)	25(25)	919
Ground-water loop- swerve	145(74)	251(247)	91(135)	11(17)	53(75)	13(15)	569
Hard landing	86(40)	144(134)	41(73)	3(9)	29(41)	5(8)	309
Stall	26(27)	92(90)	55(49)	5(6)	25(27)	1(6)	207
Collided with trees	19(26)	90(86)	60(47)	6(6)	20(26)	4(5)	199
Overshoot	30(23)	104(76)	22(42)	5(5)	13(23)	1(5)	175
Collision with ground/ water, uncontrolled	15(23)	98(75)	31(41)	3(5)	18(23)	5(5)	174
Collided with wires/poles	18(22)	56(74)	64(41)	1(5)	24(23)	5(5)	171
Nose over/down	24(20)	56(65)	43(36)	2(5)	20(20)	5(4)	150
Stall, mush	11(19)	71(63)	37(35)	2(4)	17(19)	6(4)	146
Total (all accident types)	559	1863	1022	129	566	115	

Note: Expected values computed as the product of the marginal totals divided by the overall total accident records of 4,297.

The seven 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 frequently 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
Pilot - improper recovery from bounced landing
Weather - unfavorable wind conditions

Private - Overshoot

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

Private -- Collision With Ground/Water, Uncontrolled

Pilot - spatial disorientation
Weather - low ceiling
Pilot - continued VFR flight into adverse weather conditions
Weather - fog

Weather - rain

Commercial -- Engine Failure or Malfunction

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

Commercial -- Collided With Wires/Poles

Pilot - failed to see and avoid objects or obstructions Terrain - high obstructions Pilot - misjudged clearance

Commercial With Flight Instructor --Engine Failure or Malfunction

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

Accident Causes/Factors

In 1972, cause was determined for 681 fatal accidents and 3,4% nonfatal accidents.

The 10 most frequently cited causes or related factors of fatal accidents are given in Table 5. "Weather -- low ceiling" was assigned as a cause/factor in 183 (26.87 percent) of the 681 fatal accidents. "Pilot-failed to obtain/maintain flying speed" was second on the list with 156 (22.91 percent) fatal accidents. The majority of the 10 leading causal citations involved the weather or the pilot because of something he did nor did not do; for example, "continued VFR flight into adverse weather conditions."

In Table 6, the 10 most frequently assigned causes/factors of the 3,496 nonfatal accidents are given. "Overload failure" leads the list with 487 (13.93 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 - 681

10 Most Frequently Cited Causes/Factors	Frequency	Percentage of Fatal Accidents
Weather - low ceiling	183	26.87
Pilot - failed to obtain/maintain flying speed	156	22.91
Pilot - continued VFR flight into adverse weather conditions	148	21.73
Weather - fog	124	18.21
Terrain - high obstructions	110	16.15
Pilot - spatial disorientation	105	15.42
Pilot - inadequate preflight preparation or planning	98	14.39
Weather - rain	83	12.19
Pilot - exercised poor judgment	57	8.37
Miscellaneous - undetermined	54	7.93

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

Nonfatal Accidents - 3,496

10 Most Frequently Cited Causes/Factors	Frequency	Percentage of Nonfatal Accidents
Miscellaneous acts, conditions - overload failure	487	13.93
Terrain - high obstructions	437	12.50
Pilot - inadequate preflight preparation or planning	437	12.50
Pilot - failed to maintain directional control	394	11.27
Pilot - failed to obtain/maintain flying speed	335	9 . 58
Weather - unfavorable winds conditions	312	8.92
Terrain - rough/uneven	310	8.87
Pilot - improper level off	281	8.04
Pilot - mismanagement of fuel	245	7.01
Pilot - selected unsuitable terrain	241	6.89

Kinds of Flying

Kinds of flying considered were 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 1972 cannot be compared with the rates from previous years because of a change in the Safety Board's definition of "substantial damage," which was made 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. (See Figure 3.)

The fatal accident rates per 100,000 aircraft-hours flown are plotted in Figure 4. Fatal accident rates for pleasure flying were consistently higher than for the remaining kinds of flying. In fact, the accident rates for pleasure flying were larger than the rates for instructional, business/corporate, and air taxi flying by a factor of approximately three. Aerial application fatal accident rates were consistently higher than business/corporate, air taxi, and instructional flying rates. Business/corporate and air taxi fatal accident rates ran relatively close together, except for the last 3 years, 1970 through 1972, when the air taxi rates were higher than the business/corporate rates. The instructional flying fatal accident rates were consistently lower than for any other kind of flying, except in 1971 when the business/corporate rate was lower. Although instructional flying ranked third in total accident rates, it had the lowest fatal accident rates from 1964 through 1972, except for 1971.

Table 7

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

	1964	1965	1966	1967	1968	1969	1970	1971	1972	
Instructional	21.20	20.59	15.71	22.65	15.16	12.24	15.11	15.18	13.69	
Pleasure	58.14	52.96	40.63	38.75	30.93	29.56	30.53	30.83	26.45	
Business/ corporate	16.52	16.72	15.45	19.38	13.18	9.92	6.90	6.31	6.23	
Aerial application	38.03	30.62	31.12	35.82	28.63	27.31	23.88	25.85	21.20	
Air Taxi	10.07	10.65	12.44	13.25	8.80	9.20	7.66	6.65	5.75	
Table 8	Fable 8 Kind of Flying Fatal Accident Rates Per 100,000 Aircraft-Hours Flown									
	1964	1965	1966	. <u>1967</u>	1968	1969	1970	1971	1972	
Instructional	0.79	0.99	0.68	0.89	0.99	0.83	1.12	1.17	1.13	
Pleasure	6.67	6.87	5.36	4.49	5.17	4.60	4.51	4.78	4.71	
Business/ corporate	1.72	1.40	1.45	2.07	1.84	1.52	1.14	1.05	1.31	
Aerial application	, 4.30	3.32	4.24	3.72	3.04	2.45	2.70	2.62	2.14	
Air Taxi	1.39	1.39	1.43	1.87	2.25	1.30	1.53	1.44	1.64	

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

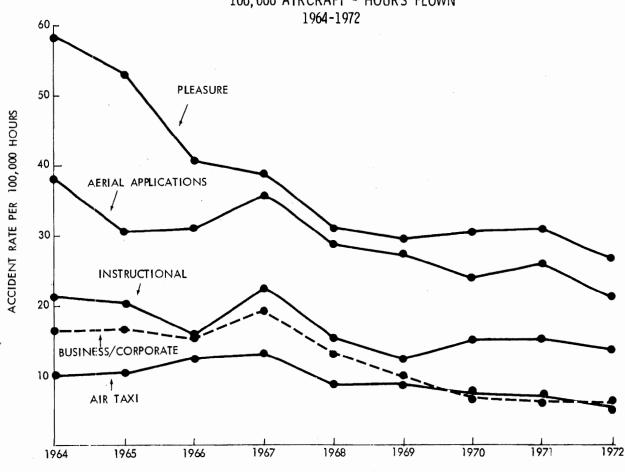
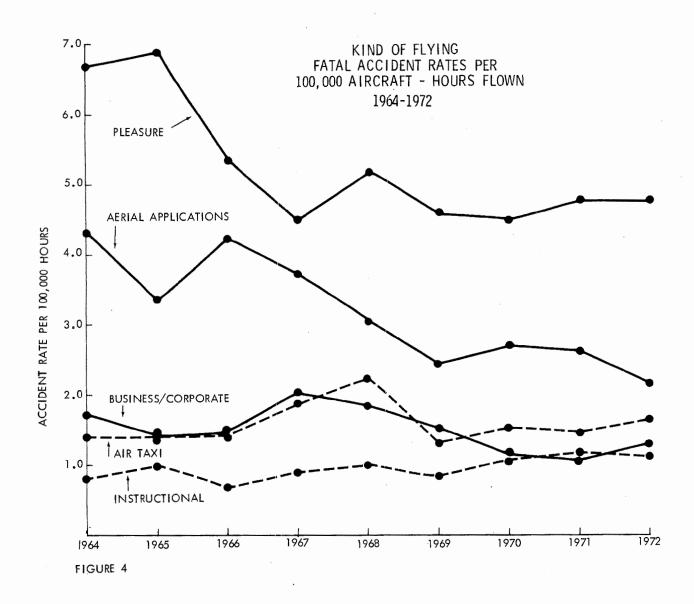


Figure 3



STATISTICAL INFORMATION

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GENERAL AVIATION ACCIDENTS

ALL CATEGORIES OF AIRCRAFT

STATISTICAL RECAPITULATION OF ACCIDENTS U. S. GENERAL AVIATION ALL OPERATIONS 1971-1972

	1971	1972
Total Accidents · · · · · · · · · · · · · · · · · · ·	4,648	4,256
Aircraft Involved 1/	4,699	4,300
Injury Index Fatal Serious Minor None Unknown	661 409 640 2,938 0	695 386 585 2,589
Injuries 1/ Fatal Serious Minor None	1,355 745 1,207 6,413	1,426 683 1,152 5,636
Total Aboard	9,505	8,793
Aircraft Damage 1/ Destroyed Substantial Minor/None Not Reported	1,060 3,592 48 0	1,026 3,226 29 19
Fire After Impact Tratal Accidents	207 125	186 110
Active Aircraft (Est.) 2/	131,149	145,010
Hours Flown (Est.) 2/	25,512,000	26,974,000
Accident Rates Per 100,000 Hours Flown TotalFatal	18.2 2.6	15.8 2.6

^{1/} Includes all aircraft involved in collisions

^{2/} Source: FAA

ACCIDENTS, RATES, ACTIVE AIRCRAFT

ALL OPERATIONS

1972

	F	IXED-WING		BALLOON/ BLIMP	ROTOF	RCRAFT
•	Single Engine	Multi- Engine	Glider		Heli- copter	Gyro- copter
ACCIDENTS	3 , 478	487	50	1	223	22
AIRCRAFT INVOLVED	3,511	490	50	1	223	22
INJURY INDEX Fatal Serious Minor None Unknown	524 326 501 2,127 0	128 26 31 301 1	7 7 8 28 0	0 0	31 22 43 127 0	5 4 3 10
ACTIVE AIRCRAFT (est.) 1	120,451	19,844	1 , 760	168	2	2,787
AIRCRAFT DAMAGE Destroyed Substantial Minor/None Unknown/Not Reported	790 2,682 24 15	160 328 1 1	9 41 0 0	1 0 0	60 157 3 3	5 16 1 0
HOURS FLOWN (est.) 1/	19,889,300	5,867,000	163,100	10,800	1,04	3,900
ACCIDENT RATES PER 100,000 HOURS FLOWN Total Fatal	17.49 2.63	.8.30 2.18	30.66 4.29	9 . 26 0	23 3	.47 .45

1/ Source: FAA

ACCIDENTS, RATES, INJURY INDEX, AIRCRAFT DAMAGE BY KIND OF FLYING ALL OPERATIONS 1972

				KTN	D OF FLYI	NG				
		NON	COMMERC			110	COMME	RCLAL		
	ONAL				NÇ		AIR I	AXI		
	INSTRUCTIONAL	PLEASURE	BUSTNESS	CORPORATE	CORPORATE AERIAL AFPLICATIÓN	TAN SCHEDU		NONSCHE	EDULED	
	ISNI	PLEA	BUSI	CORF	AERI	PASSG.	CARGO	PASSG.	CARGO	
ACCIDENTS	665	2,208	411	84	376	25	25	76	21	
hours flown (thousands of hours)	4,856	8,339	4,991	2,950	1,773		2,5	555		
ACCIDENT RATES PER 100,000 HOURS Total Accidents Fatal Accidents	13.69 1.13	26.45 4.71	8.23 1.84	2.85 0.41	21.20 2.14		5.	.71 .60		
ACCIDENT INJURY INDEX Fatal Serious Minor None Unknown/Not Reported	55 4 8 89 473 0	392 205 311 1,300	92 24 4 2 252 1	12 3 5 64 0	38 5 4 53 231 0	8 1 3 13 0	11 4 0 10 0	18 4 9 45 0	5 1 2 13 0	
AIRCRAFT DAMAGE Destroyed Substantial Minor None Unknown/Not Reported Total	86 575 4 1 0	548 1,645 15 12 0 2,220	107 303 1 1 0 412	18 64 1 1 0 84	107 270 3 0 0 0	8 16 0 1 0	13 12 0 0 0	23 50 0 3 0	8 13 0 0 0	

1/ Source: FAA

Note: Two pleasure and one air taxi suicide accidents are included in all computations except rates.

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FIRST TYPE OF ACCIDENT BY INJURY INDEX

INJURY INDEX

FIRST TYPE OF ACCIDENT FATA SERION MINOR ONE INMONTH

						RECORDS	ACCIDENTS
GROUND-WATER LOOP-SWERVE	4	11	46	508		569	569
DRAGGED WINGTIP POD OR FLOAT				2		2	2
WHEELS-UP LANDING	1	1		124		126	126
WHEELS-DOWN LANDING IN WATER				2		2	2
GEAR COLLAPSED			7	63		70	70
GEAR RETRACTED				. 51		51	51
HARD LANDING	1	1. 2	30	266		309	309
NOSE OVER/DOWN	1	2	16	131		150	150
ROLL DVER		1	4	9		14	14
OVERSHOOT	6	12	22	135		175	175
UNDERSHOOT	10	10	25	85		130	130
COLLISION BETWEEN AIRCRAFT							
BOTH IN FLIGHT	. 24	8	4	12		48	25
ONE AIRBORNE			2			2	1
BOTH ON GROUND			4	31		35	18
COLLISION WITH GROUND/WATER							
CONTROLLED	70	15	16	32		133	133
UNCONTROLLED	126	11	16	21		174	174
COLL IDED WITH							
WIRES/POLES	33	38	25	75		171	171
TREES .	. 80	22	29	67	1	199	199
RESIDENCE/S			1			1	1
BUILDING/S				7		7	7
FENCE, FENCEPOSTS	. 1	2	12	41		56	56
ELECTRONIC TOWERS	3	1				4	4
RUNHAY OR APPROACH LIGHTS		1	1	. 1		3	3
AIRPORT HAZARD		1	3	9		13	13
ANIMALS				3		3	3
CROP			3	.9		12	12
FLAGMAN LOADER							
DITCHES			5	29		34	34
SNOWBANK			1	16		17	17
PARKED AIRCRAFT			2	21		23	23
AUTOMOBILE	3	ı	. 1	17		22	22
DIRT BANK		1	2	16		. 19	19
OBJECT	7	4	10	74		95	95

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FIRSI	44	A LO	IOUS	70¢	JE JEHOWE	RECORDS	ACC I DENTS
TYPE OF ACCIDENT	برب 1	5° 1	4	1	2,	3	3
BIRD STRIKE	81	37	34	55		207	207
STALL	61	18	6	1		86	86
SPIRAL	4	1	·	•		5	5
MUSH	8	22	29	87		146	146
FIRE OR EXPLOSION	0	22	(0,		140	.,,
IN FLIGHT	5	1	4	15		25	25
•	,	,	7	5		5	5
ON GROUND				2		5	,
AIRFRAME FAILURE	37	7	5.	11		60	60
IN FLIGHT	31	,				5	5
DN GROUND			1	4		,	,
ENGINE TEARAWAY	7.0	,	205			919	919
ENGINE FAILURE OR MALFUNCTION	75	114	205	525		919	919
PROPELLER/ROTOR FAILURE	4	3	9	9		25	25
PROPELLER	2	3	9	5		7	7
TAIL ROTOR							
MAIN ROTOR	3	2	1	2		8 27	8 27
PROP ROTOR ACONT TO PERSON	10	17					21
JET INTAKE/EXH ACONT TO PERS				_		-	
PROPELLER/JET/ROTOR BLAST	_			7		7	7
TURBULENCE	5	6	3	10		24	24
HAIL DAMAGE TO AIRCRAFT							
LIGHTNING STRIKE							
EVASIVE MANEUVER	2			1		3	3
UNCONTROLLED ALT DEVIATION							
DITCHING	1		2			3	. 3
MISSING ACFT NOT RECOVERED	19					19	19
MISCELLANEOUS/OTHER	8	7.	4	14		33	33
UNDETERMINED	10			1		11	11
•							
RECORDS	706	390	590	2610	1	4297	
ACC IDENTS	695	386	585	2589	1		4256

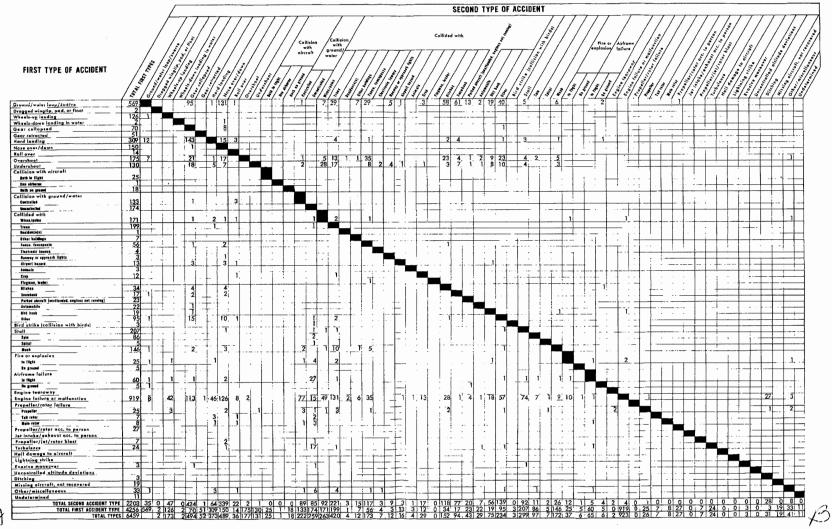
FIRST TYPE OF ACCIDENT BY AIRCRAFT DAMAGE

AIRCRAFT DAMAGE

	AIRC	KAFI	DAN	AGE			
FIRST TYPE OF ACCIDENT	DESTR	subst	AMINO	HOHE		PFCOPDS	ACCIDENTS
GROUND-WATER LOOP-SWERVE	13	556				569	549
DRAGGED WINGTIP POD OR FLOAT		2				2	2
WHEELS-UP LANDING		125	1			126	126
WHEELS-DOWN LANDING IN WATER		2				2	7
GEAR COLLAPSED		70				70	70
GEAR RETRACTED	1	50				51	51
HARD LANDING	8	301				309	309
NOSE OVER/DOWN	4	146				150	150
ROLL OVER	4	10				14	14
OVERSHOOT	. 12	163				175	175
UNDERSHOOT	22	108				130	130
COLLISION BETWEEN AIRCRAFT							
BOTH IN FLIGHT	19	23	5	1		48	25
ONE AIRBORNE		· S				2	1
BOTH ON GROUND		29	5	1		35	18
COLLISION WITH GROUND/WATER							
CONTROLI ED	43	49				133	133
UNCONTROLLED	136	38				174	174
COLLIDED WITH							
WIRES/POLES	70	101				171	171
TREES	102	97				199	199
RESIDENCE/S	1					1	1
BUILDING/S		7				7	7
FENCE, FENCEPOSTS	4	52				56	56
ELECTRONIC TOWERS	4					4	4
RUNWAY OR APPROACH LIGHTS		3				3	3
' AIRPORT HAZARD	3	9	1			13	13
ANIMALS		3				3	3
CROP	3	9				12	12
FLAGMAN LOADER							
DITCHES	2	32				34	34
SNOWBANK		17				17	17
PARKED AIRCRAST		22	1			23	23
AUTOMOBILE	1	20	1			22	72
DIRT BANK	4	15				19	19
OBJECT	8	86	1			95	95

•		40	AIIA'	•			
FIRST	DESTR	هر اهر	ANTIA	HOHE			105105470
TYPE OF ACCIDENT	Or.	S	W	40			ACCIDENTS
BIRD STRIKE	1	1	1			3	3
STALL	110	97			•	207	207
SPIN	70	16				86	86
SPIRAL	5					5	5
MUSH	33	113				146	146
FIRE OR EXPLOSION							
IN FLIGHT	15	10				25	. 25
ON GROUND	2	3				5	5
AIRFRAME FAILURE							
IN FLIGHT	41	19				60	60
ON GROUND	1	4				5	5
ENGINE TEARAWAY							
ENGINE FAILURE OR MALFUNCTION	179	738	2			919	919
PROPELLER/ROTOR FAILURE							
PROPELLER	5	20				25	25
TAIL ROTOR	2	5				7	7
MAIN ROTOR	4	4				8	8
PROP ROTOR ACONT TO PERSON		2	11	14		27	27
JET INTAKE/EXH ACONT TO PERS							
PROPELLER/JET/ROTOR BLAST		7				7	7
TURBULENCE	11	12		1		24	24
HAIL DAMAGE TO AIRCRAFT							
LIGHTNING STRIKE							
EVASIVE MANEUVER	2	1				3	3
UNCONTROL_ED ALT DEVIATION						•	
DITCHING	2	1				3	3
MISSING ACFT NOT RECOVERED	18	1				19	19
MISCELLANEOUS/OTHER	8	23		2		33	33
UNDETERMINED	10	1				11	11
RECORDS	1024 3	3225	29	19		4297	
ACCIDENTS	1019		29	19			4256

FIRST ACCIDENT TYPE VS. SECOND ACCIDENT TYPE



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FIRST PHASE OF OPERATION BY INJURY INDEX

INJURY INDEX

FIRST OPERATIONAL PHASE	FATE	SERIC	WIN	O ⁴ O ⁴	RECORDS	ACCIDENTS
<u>STATIC</u>						
STARTING ENGINE/S		5		3	8	8
IDLING ENGINE/S	4	8		7	19	. 19
ENGINE RUNUP	1	1	1	5	8	8
IDLING ROTORS	4	1	1	1	7	7
PARKED-ENGINES NOT OPERATING				2,	2	2
OTHER				3	3	3
TAXI						
TO TAKEOFF	1		4	64	69	67
FROM LANDING		2	1	58	61	61
OTHER	1	2	3	27	33	33
GROUND TAXE TO TAKEOFF						
GROUND TAXI FROM LANDING				1	1	1
GROUND TAXI, OTHER						
AERIAL TAXI TO TAKEOFF			1		1	1
AERIAL TAXI TO/FROM LANDING				3	. 3	3
AERIAL TAXI, OTHER			1	2	3	3
TAKEOFF						
RUN	3	7	17	151	178	178
INITIAL CLIMB	61	74	95	263	493	493
VERT ICAL	1	4	3	6	14	14
RUNN ING			1	4	5	5
ABORTED		1	6	43	 50	50
ABORTED						
ABORTED			1	1	2	2
OTHER	1		5	4	10	10
INFLIGHT						
CLIMB TO CRUISE	11	10	15	26	62	61
NORMAL CRUISE / /	109	59	97	241	506	502
DESCEND ING	8	5	13	29	55	55
HOLDING						
HOVERING	2	2	4	12	20	20
POWER-ON DESCENT				2	2	2
AUTOROTATIVE DESCENT				1	1	1
ACROBATICS	23	6	1	2	32	32
BUZZING	15	6	2	4	27	27

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FIRST OPERATIONAL PHASE	44	A SER	OUS	40 ⁴ 0 ⁶	E WAR	RECORDS	ACCIDENTS
UNCONTROLLED DESCENT	116	4	4	8	3	132	132
EMERGENCY DESCENT		1				1	1
LOW PASS	22	10	14	21		67	67
CTHER	130	26	26	28		210	209
EN ROUTE TO TREAT CROP	ı	2	1	10		14	14
EN ROUTE TO RELOADING AREA		1	1	3		5	5
SURVEY FIELD/AREA			1	1		2	2
STARTING SWATH RUN	2	5		10		17	17
SWATH RUN	10	8	10	49		77	77
FLAREOUT FOR SWATH RUN		1	2	4		7	7
PULLUP FROM SWATH RUN	٠4	8	5	15		32	32
PROCEDURE TURNAROUND	10	16	9	26		61	61
CLEANUP SWATH	2	1		1		4	4
MANEUVER TO AVOID OBSTRUCTION	1	2	1	ı		5	5
RETURN TO STRIP	1	1	1	6		, 9	9
LAND ING							
TRAFFIC PATTERN-CIRCLING	22	14	14	27		77	74
FINAL APPROACH	47	38	68	148		301	294
INITIAL APPROACH	10	1	1	2		14	14
FINAL APPROACH	22	5	4	9		40	40
LEVEL OFF/TOUCHDOWN	11	31	67	609		718	716
ROLL	5	7	54	583	1	650	650
ROLL-ON/RUN-ON			1	1		2	. 2
POWER-ON LANDING	1	1	3	11		16	. 16
POWER-OFF AUTOROTATIVE LDG			6	11		17	17
GD-AROUND .	8	12	21	42		83	83
MISSED APPROACH	4					4	4
OTHER	5	2	4	16		27	27
UNKNOHN/NOT REPORTED	27			3		30	30
RECORDS	706	390	5 90	2610		4297	
ACC IDENTS	. 695	386	585	2589	1		4256

PHASE OF OPERATION BY AIRCRAFT DAMAGE ALL OPERATIONS

Part			oten	AHTIAL				
STANTING ENGINE/S 8		DEST	SUBS	WINO	HOHE		RECORDS	ACCIDENTS
ENGINE EVALUP 8 6 5 2 88 2 2 2 2 2 2 2 2 3	STATIC							
ENGINE RUNUP 5 2 2 2 7 <t< td=""><td>STARTING ENGINE/S</td><td></td><td>3</td><td>1</td><td>4</td><td></td><td>8</td><td>8</td></t<>	STARTING ENGINE/S		3	1	4		8	8
IDLING ROTORS 3 3 1 7 <	IDLING ENGINE/S		. 8	6	5		19	19
PARKED-ENGINES NOT OPERATING 1	ENGINE RUNUP		6		2		8	8
TAXI TO TAKEOFF 65 4 65 1 3 61 65 1 3 61 65 1 3 61 65 1 3 61 65 1 3 61 60 <td>IDLING ROTORS</td> <td></td> <td>3</td> <td>3</td> <td>1</td> <td></td> <td>7</td> <td>7</td>	IDLING ROTORS		3	3	1		7	7
TAXI TO TAKEOFF 66	PARKED-ENGINES NOT OPERATING	1	1				2	. 2
TO TAKEOFF FROM LANDING 1	OTHER	1	2				3	3
FROM LANDING 1 56 1 3 61 61 61 61 61 61 61 63 33	TAXI							
OTHER 1 30 2 33 33 GROUND TAXI TO TAKEOFF 1 1 1 1 GROUND TAXI, OTHER 1<	TD TAKEOFF		65	4			69	67
GROUND TAXI TO TAKEOFF GROUND TAXI FROM LANDING 1 1 1 GROUND TAXI, OTHER AERIAL TAXI TO TAKEOFF 1 2 1 1 1 AERIAL TAXI TO TAKEOFF 1 2 1 3 3 3 AERIAL TAXI, OTHER 1 2 1 2 1 3 3 AERIAL TAXI, OTHER 1 5 1 6 3 7 TAKEOFF RUN 15 163 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	FROM LANDING	1	56	1	3		61	61
GROUND TAXI FROM LANDING 1 GROUND TAXI, OTHER 1 AERIAL TAXI TO TAKEOFF 1 AERIAL TAXI TO THER LANDING 3 AERIAL TAXI, OTHER 1 TAKEOFF 1 RUN 15 15 163 VERTICAL 3 10 1 YERTICAL 3 10 1 4 1 4 1 4 1 4 1 1 1 1 1 1	OTHER	1	30	2			33	33 .
GROUND TAX1, OTHER AERIAL TAX1 TO TAKEOFF 1	GROUND TAXE TO TAKEOFF							
ABRIAL TAXI TO TAKEOFF 1 1 1 1 1 3 10 178	GROUND TAXI FROM LANDING		1				1	1
ABRIAL TAXI TO/FRON LANDING 3 17 178 </td <td>GROUND TAXI, OTHER</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	GROUND TAXI, OTHER							
ARRIAL TAXI, OTHER 1 2 TAKEOFF TAKEOFF RUN 15 163 178	AERIAL TAXI TO TAKEOFF		1				1	1
TAKEOFF TUN 15 163 178<	AERIAL TAXI TO/FROM LANDING		3				3	3
RUN 15 163	AERIAL TAXI, OTHER	1	2				3	3
INITIAL CLIMB 151 341 1 493 493 VERTICAL 3 10 1 14 14 RUNNING 1 4 5 50 ABORTED 50 50 ABORTED 2 2 2 OTHER 3 7 10 10 10 LIMB TO CRUISE 19 43 5 62 61 NORMAL CRUISE 154 349 2 1 506 502 DESCENDING 15 39 1 506 502 HOURING 5 15 39 1 506 502 POWER-ON DESCENT 2 2 2 2 AUTOROTATIVE DESCENT 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	TAKEOFF							
VERTICAL 3 10 1 14 14 14 14 14 15 5 5 5 5 5 5 5 5 5 5 50	RUN	15	163				178	178
RUNNING 1 4 50	INITIAL CLIMB	151	341	1			493	493
ABORTED 50 50 50 ABORTED 50 50 50 ABORTED 50 50 50 50 ABORTED 50 50 50 50 50 50 50 50 50 50 50 50 50	VERTICAL	. 3	10		1		14	14
ABORTED ABORTED 2 CTHER 3 7 10 10 10 10 10 10 10 10 10	RUNNING	1	4				5	5
ABORTED 2 2 2 0THER 3 3 7 1 10 10 10 10 10 10 10 10 10 10 10 10 1	ABORTED		50				50	50
OTHER 3 7 10 10 LNFL IGHT CLIMB TO CRUISE 19 43 62 61 NORMAL CRUISE 154 349 2 1 506 502 DESCENDING 15 39 1 55 55 HOLDING 15 55 20 20 20 POMER-ON DESCENT 2 2 2 2 AUTOROTATIVE DESCENT 2 6 6 3 3 3	ABORTED							
INFLIGHT CLIMB TO CRUISE 19 43 62 61 NORMAL CRUISE 154 349 2 1 506 502 DESCENDING 15 39 1 55 55 HOUDING 4 4 20 20 20 POMER-ON DESCENT 2 2 2 2 AUTOROTATIVE DESCENT 1 1 1 1 ACROBATICS 26 6 6 32 32	ABORTED		2				2	2
CLIMB TO CRUISE 19 43 62 61 NORMAL CRUISE 154 349 2 1 506 502 DESCENDING 15 39 1 55 55 HOLDING 5 15 50 20 20 20 POMER-ON DESCENT 2 2 2 AUTOROTATIVE DESCENT 1 2 6 6 6 32 32	DTHER	3	7				. 10	10
NORMAL CRUISE 154 349 2 1 506 502 DESCENDING 15 39 1 55 55 HOLDING 5 15 20 20 20 POMER-ON DESCENT 2 2 2 2 AUTOROTATIVE DESCENT 1 1 1 1 ACROBATICS 26 6 6 32 32	INFLIGHT							
DESCENDING 15 39 1 55 55 HOLDING TO STATE OF THE PROPERTY OF	CLIMB TO CRUISE	19	43				62	61
HOLDING HOVERING 5 15 20 20 POWER-ON DESCENT 2 2 2 AUTOROTATIVE DESCENT 1 1 1 ACROBATICS 26 6 32 32	NORMAL CRUISE	154	349	2	1		506	502
HOVERING 5 15 20 20 POHER-ON DESCENT 2 2 2 AUTOROTATIVE DESCENT 1 1 1 ACROBATICS 26 6 32 32	DESCENDING	15	39	1			55	55
POWER-ON DESCENT 2 2 2 AUTOROTATIVE DESCENT 1 1 1 ACROBATICS 26 6 32 32	HOLD ING							
AUTOROTATIVE DESCENT 1 1 1 ACROBATICS 26 6 32 32	HOVERING .	5	15				20	20
ACROBATICS 26 6 32 32	POWER-ON DESCENT		2				2	2
	AUTOROTATIVE DESCENT		1				1	1
	ACROBATICS	26	6				32	32
	BUZZING	17	10				27	27

		oteo,	BALL.	٠ ,			
FIRST OPERATIONAL PHASE	OFST	orto Silver	WINC	HOHE		RECORDS	ACCIDENTS
UNCONTROLLED DESCENT	118	14				132	132
EMERGENCY DESCENT		1				1	1
LOW PASS	35	31		1		67	67
OTHER	143	66	1			210	209
EN ROUTE TO TREAT CROP	2	12				14	14
EN ROUTE TO RELOADING AREA	1	, 4				5	5
SURVEY FIELD/AREA	1	1				2	. 5
STARTING SWATH RUN	5	12				17	17
SWATH RUN	25	52				. 77	77
FLAREOUT FOR SWATH RUN	2	5				7	7
PULLUP FROM SWATH RUN	12	20				3?	32
PROCEDURE TURNAROUND	25	36				61	61
CLEANUP SWATH		1				4	4
, MANEUVER TO AVOID OBSTRUCTION	3	2				5	. 5
RETURN TO STRIP	1	8				9	9
LAND ING	•						•
TRAFFIC PATTERN-CIRCLING	26	50	1			77	74
FINAL APPROACH	72	228	1			301	294
INITIAL APPROACH	11	3				. 14	14
FINAL APPROACH	27	13				40	40
LEVEL OFF/TOUCHDOWN	28	685	4	1		718	716
ROLL	10	640				650	650
ROLL-ON/RUN-ON	1	1				2	2
POWER-ON LANDING	5	11				16	16
POWER-OFF AUTOROTATIVE LDG	1.	16				17	17
GO-ARDUND	16	66	1,	5		83	83
MISSED APPROACH	4					4	. 4
OTHER	7	20				27	27
UNKNOWN/NOT REPORTED	26	4				30	30
1.							
RECORDS	1024		29	19		4297	
ACCIDENTS .	1019	3206	29	19			4256

U.S.GENERAL AVIATION-(ALL OPERATIONS)-1972 RECORDS WITH CAUSE/FACTORS CODED

INVOLVES 4177 TOTAL ACCIDENTS
INVOLVES 681 FATAL ACCIDENTS

	FAT	AL ACCID	ENTS		TAL ACCI	DENTS	ALI	LACCIDE	NTS
BROAD CAUSE/FACTOR	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL *	CAUSE	FACTOR	TOTAL*
PILOT	574	161	579	2916	410	29 32	3490	571	3511
	84•29	23.64	85.02	83.41	11.73	83 • 87	83.55	13.67	84.06
PERSONNEL	47	23	65	260	82	339	30 7	105	404
	6.90	3.38	9.54	7.44	2.35	9.70	.7.35	2.51	9.67
AIRFRAME	7	1	8	23	10	33	30	11	41
	1.03	•15	1.17	•66	•29	•94	•72	•26	•98
LANDING GEAR	•00	•00	•00	130 3.72	48 1.37	177 5.06	130 3.11	48 1 •1 5	177 4.24
POWERPLANT	44	4	47	427	24	448	471	28	495
	6•46	•59	6•90	12.21	•69	12.81	11.28	•67	11.85
SYSTEMS	6	1	7	25	1 4	38	31	15	45
	.88	•15	1.03	•72	• 40	1.09	.74	•36	1.08
INSTRUMENTS/EQUIPMENT AND ACCESSORIES	1	2	3	4	9	13	5	11	16
	•15	• 29	•44	•11	•26	•37	•12	•26	•38
ROTORCRAFT	7	1	7	24	2	26	31	3	33
	1.03	•15	1.03	•69	•06	•74	.74	•07	•79
AIRPORTS/AIRWAYS/FACILITIES	1	10	11	97	2 90	382	98	300	393
	•15	1.47	1.62	2 . 77	8 • 30	10.93	2.35	7.18	9.41
WEATHER	32	256	280	216	481	688	248	737	968
	4.70	37•59	41.12	6.18	13.76	19.68	5.•94	17.64	23.17
TERRAIN	18	122	140	590	504	1090	608	626	1230
	2.64	17.91	20.56	16.88	14.42	31.18	14.56	14 . 99	29.45
MISCELLANEOUS	26 3.82	3 •44		111 3.18	34 •97	145 4•15	137 3.28	37 •89	174 4.17
UNDETERMINED	54 7•93	.00	54 7.93	21 •60	.00	21 •60	75 1.80	.00	75 1.80

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

U.S.GENERAL AVIATION-(ALL OPERATIONS)-1972 RECORDS WITH CAUSE/FACTORS CODED

INVOLVES 4177 TOTAL ACCIDENTS INVOLVES 681 FATAL ACCIDENTS

·	FATAL ACCIDENTS				TAL ACC		ALL ACCIDENTS			
DETAILED CAUSE/FACTOR	CAUSE	FACTOR	JATOT		FACTOR			FAC TOR		
** biful **										
PILOT IN COMMAND ATTEMPTED OPERATION W/KNOWN DEFICIENCIES IN EQUIPMENT		.,	22	20						
ATTEMPTED OPERATION BEYOND EXPERIENCE/ABILITY LEVEL	11 17	11 8	22 25	30 65	11 33	41 98	41 82	22 41	63 123	
BECAME LOST/DISORIENTED	5	10	15	24	16	40	29	26	55	
CONTINUED VFR FLIGHT INTO ADVERSE WEATHER CONDITIONS CONTINUED INTO KNOWN AREA OF SEVERE TURBULENCE	147	1	148	56 1	4	60 2	203 6	5 1	208 7	
DELAYED ACTION IN ABORTING TAKEOFF	í		í	38	i	39	39	1	40	
DELAYED IN INITIATING GO-AROUND DIVERTED ATTENTION FROM OPERATION OF AIRCRAFT	5 11	1	6 20	63	6	69	68	. 7	75	
EXCEEDED DESIGN STRESS LIMITS OF AIRCRAFT	23	1	24	47 4	32	79 4	58 27	4 L 1	99 28	
FAILED TO EXTEND LANDING GEAR FAILED TO RETRACT LANDING GEAR				55		55	55		55	
RETRACTED GEAR PREMATURELY	1	1	1 1	4	1	5 4	4 5	2	6	
INADVERTENTLY RETRACTED GEAR				20		20	20		2.0	
FAILED TO SEE AND AVOID OTHER AIRCRAFT FAILED TO SEE AND AVOID OBJECTS OR DRSTRUCTIONS	20 29		20 29	37 170	1	38 171	. 199	1	58 200	
FAILED TO OBTAIN/MAINTAIN FLYING SPEED	155	1	156	335	•	335	490	î	491	
MISJUDGED, SPEED, ALTITUDE OR CLEARANCE FAILED TO MAINTAIN ADEQUATE ROTOR RPM	2 1		2 1	7 15	1	7 16	16	1	9 17	
FAILED TO USE OR INCORRECTLY USED MISC EQUIPMENT	2	3	5	7	6	13	9	9	18	
FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES ETC IMPROPER OPERATION OF POWERPLANT + POWERPLANT CONTROLS	11	9 1	20 10	45 138	11	· 56	56 147	20 11	76 158	
IMPROPER OPERATION OF BRAKES AND/OR FLIGHT CONTROLS	,	•	107	148	6	154	148	6	154	
IMPROPER OPERATION OF FLIGHT CONTROLS PREMATURE LIFT OFF	30		30	108	3	111	138	3	141	
IMPROPER LEVEL OFF	2	1	3	64 279	1 2	65 281	64 281	1 3	65 284	
IMPROPER IFR OPERATION	19		19	14		14	33		33	
IMPROPER IN-FLIGHT DECISIONS OR PLANNING IMPROPER COMPENSATION FOR WIND CONDITIONS	26 1	10	36 1	99 86	24 12	123 98	125 87	34 I 2	159 99	
INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING	40	58	98	373	64	437	413	122	535	
INADEQUATE SUPERVISION OF FLIGHT LACK OF FAMILIARITY WITH AIRCRAFT	10	21	10 23	109 33	6 92	115 125	119 35	6 113	125	
MISMANAGEMENT OF FUEL	25	21	25	242	3	245	267	3	148 270	
EXERCISED POOR JUDGMENT	48	9	57	122	13	135	170	22	192	
OPERATED CARELESSLY SELECTED UNSUITABLE TERRAIN	2	1	2	5 2 30	2 11	241	233	2 12	9 245	
IMPROPER STARTING PROCEDURES				9		9	9		9	
STARTED ENGINE WITHOUT PROPER ASSISTANCE/EQUIPMENT TAXIED/PARKED WITHOUT PROPER ASSISTANCE	1		1	17 10	1	18 10	1 # 10	1	19 10	
FAILED TO ASSURE THE GEAR WAS DOWN AND LOCKED	1		1	41		41	42		42	
INITIATED FLIGHT IN ADVERSE WEATHER CONDITIONS SPONTANEOUS-IMPROPER ACTION	25		25 4	7 28	3	7 31	32 32	3	32 35	
MISJUDGED DISTANCE, SPEED, AND ALTITUDE	3	1	4	36	1	37	39	2	41	
MISJUDGED DISTANCE AND SPEED MISJUDGED DISTANCE	5 1		. 1	159	2 1	161	164	2 1	166	
MISJUDGED DISTANCE AND ALTITUDE	8		8	92	4	96	100	4	104	
MISJUDGED SPEED AND ALTITUDE MISJUDGED SPEED	1		1	22 26	1 5	23 31	23 27	1	24	
MISJUDGED SPEED AND CLEARANCE	1		1	6	2	91	6	,	32 6	
MISJUDGED ALTITUDE AND CLEARANCE	8		8	12		12	20		20	
MISJUDGED ALTITUDE MISJUDGED CLEARANCE	26 20	2	28 20	31 64	4 2	35 66	57 84	6 2	63 86	
INADEQUATE TRAINING OF STUDENT	-			0.4	1	1	04	1	1	
MISUNDERSTANDING OF ORDERS OR INSTRUCTIONS IMPROPER RECOVERY FROM BOUNCED LANDING	1	1	1 1	156	3	3 159	157	4	160	
INCAPACITATION	8		8	3	3	3	11	,	160 11	
PHYSICAL IMPAIRMENT	15	7 .	22	14	6	20	29	13	42	
SPATIAL DISDRIENTATION PSYCHOLOGICAL CONDITION	105 2	ı	105	9	1	10	114	1	115	
MISUSED OR FAILED TO USE FLAPS	2	7	9	22	16	38	24	23	47	
LEFT AIRCRAFT UNATTENDED ENGINE RUNNING FAILED TO MAINTAIN DIRECTIONAL CONTROL	3		3	2 393	1	2 394	396	ı	307	
SELECTED WRONG RUNWAY RELATIVE TO EXISTING WIND				45	7	52	396 45	7	397 52	
FAILED TO ABORT TAKEOFF	4		4	36	3	39	40	3	43	

LA	USE/ FACI	UK TANLE								
PILOT IN COMMAND (CONTINUED)	FAT	AL ACCIO	ENTS	NONFA	TAL ACCI	DENTS	ALL ACCIDENTS			
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	(.AUS F	FAC TOR	TOTAL	
FAILED TO INITIATE GO-AROUND DIRECT ENTRIES	1 6		1 6	75 2	5	80 2	76 8	, 5	81 8	
SUBTOTAL	914	175	1089	4400	444	4844	5314	619	5933 .	
COPILOT FAILED TO EXTEND LANDING GEAR INADVERTENTLY RETRACTED GEAR FAILED TO SEE AND AVOID DRIECTS OR OBSTRUCTIONS FAILED TO OBTAIN/MAINTAIN FLYING SPEED IMPROPER OPERATION OF POMERPLANT + POMERPLANT CONTROLS IMPROPER OPERATION OF BRAKES AND/OR FLIGHT CONTROLS IMPROPER LEVEL OFF LACK OF FAMILIARITY WITH AIRCRAFT SPONTANEOUS-IMPROPER ACTION MISUSED OR FILED TO USE FLAPS FAILED TO MAINTAIN DIRECTIONAL CONTROL	1 1		1 1 2	1 3 1 2 2 2	2 1 1	1 3 1 2 2 2 2 4 1	1 3 1 1 1 2 2 2	2 1 1	1 3 1 1 1 2 2 2 6 1	
SUBTOTAL	4		4	13	4	1 7	17	4	21	
DUAL STUDENT DELAYED IN INITIATING GO-ARDUND DIVERTED ATTENTION FROM OPERATION OF AIRCRAFT FAILED TO EXTEND LANDING GEAR INADVERTENTLY RETRACTED GEAR FAILED TO SEE OTHER AIRCRAFT FAILED TO SEE OTHER AIRCRAFT FAILED TO SEE AND AVOID OBJECTS OR OBSTRUCTIONS FAILED TO MAINTAIN ADFOUATE ROTOR RPM FAILED TO MAINTAIN ADFOUATE ROTOR RPM FAILED TO USE OR INCORRECTLY USED MISC EQUIPMENT IMPROPER OPERATION OF POWERPLANT + POWERPLANT CONTROLS IMPROPER OPERATION OF FORERELAY + POWERPLANT CONTROLS IMPROPER OPERATION OF FIGHT CONTROLS PREMATURE LIFT—OFF IMPROPER LEVEL OFF IMPROPER LEVEL OFF IMPROPER LEVEL OFF IMPROPER COMPENSATION FOR WIND CONDITIONS INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING SELECTED UNSUITABLE TERRAIN FAILURE TO RELINOUISM CONTROL SPONTANEOUS—IMPROPER ACTION MISJUDGED DISTANCE AND SPEED MISJUDGED DISTANCE AND SPEED MISJUDGED SPEED AND ALTITUDE MISJUDGED SPEED AND ALTITUDE MISJUDGED SPEED AND ALTITUDE MISJUDGED SPEED AND ALTITUDE MISJUDGED CLEARANCE MISUNDERSTANDING OF ORDERS OR INSTRUCTIONS IMPROPER RECOVERY FROM BOUNCED LANDING FAILED TO MAINTAIN DIRECTIONAL CONTROL FAILED TO MAINTAIN DIRECTIONAL CONTROL	1	1	1	1 2 1 1 2 2 2 2 7 7 2 1 1 6 6 6 12 1 4 1 2 2 1 5 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 2	1 2 1 2 2 2 2 7 7 2 1 1 7 6 6 1 1 2 1 1 6 6 1 1 2 2 1 5 2 2 1 5 2 2 1 5 2 2 2 2 2 2	1 2 1 1 2 2 2 2 1 1 1 2 1 1 6 6 6 1 2 1 1 4 9 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 2	1 2 1 2 2 2 2 11 1 7 6 13 1 1 1 1 2 1 1 1 6 1 1 1 1 1 1 1 1 1 1 1	
SUBTOTAL CHECK PILOT DIVERTED ATTENTION FROM OPERATION OF AIRCRAFT FALLED TO MAINTAIN ADEQUATE ROTOR RPM IMPROPER OPERATION OF POWERPLANT + POWERPLANT CONTROLS IMPROPER LEVEL OFF INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING INADEQUATE SUPERVISION OF FLIGHT EXERCISED POOR JUDGEMENT MISUNDERSTANDING OF ORDERS OR INSTRUCTIONS FAILED TO INITIATE GO-AROUND	5	1	6	103 1 1 1 1 1	1	109 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	10R 1 1 1 1 1 1	1	1 1 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
SUBTOTAL				9	3	12	9	3	12	

** PERSONNEL **

PERSONNEL (CONTINUED)	FATAL ACCIDENTS		NONFA	NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
FLIGHT INSTRUCTOR INADEQUATE SUPERVISION OF FLIGHT	. 1	1	2	13	14	27	14	15	29
INADEQUATE TRAINING OF STUDENT MAINTENANCE, SERVICING, INSPECTION		2	2	8	. 6	14	8	8	16
IMPROPER MAINTENANCE(MAINTENANCE PERSONNEL) IMPROPER MAINTENANCE(OMMER PERSONNEL) IMPROPERLY SERVICED AIRCRAFT(GROUND CREH) IMPROPERLY SERVICED AIRCRAFT(OWNER-PILOT)	. 2		2	13 2 1 2	1 2	13 3 1 4	15 4 1 2	1 2	15 5 1 4
INADEQUATE INSPECTION OF AIRCRAFT(MAINTENANCE PERSONNE:_) INADEQUATE MAINTENANCE AND INSPECTION OTHER	1 14	. 1	1 15	1 30 2	2 14 1	4 144 3	3 1 44 2	2 15 1	5 159 3
OPERATIONAL SUPERVISORY PERSONNEL INADEGUATE FLIGHT TRAIN ING-PROCEDURES INADEGUATE GROUND TRAINING-PROCEDURES	1	2	2		2	2	1	4	4 2
INADEQUATE SUPERVISION OF FLIGHT CREW FAILURE TO PROVIDE ADEQ DIRECTIVES, MANUALS, EQUIPMENT	•	2	2 1		î 2	1 2		3	3
DEFICIENCY, COMPANY MAINTAINED EQMT, SERV, REGULATIONS WEATHER PERSONNEL	1	3	4	2	4	6	. 3	7	10
INCORRECT WEATHER FORECAST TRAFFIC CONTROL PERSONNEL		1	1	1			,	1	1
FAILURE TO ADVISE OF UNSAFE AIRPORT CONDITION FAILURE TO ADVISE OF OTHER TRAFFIC ISSUED IMPROPER OR CONFLICTING INSTRUCTIONS		1	1	1		1 1 1	1 1 1	1	1 1 2
INADEQUATE SPACING OF AIRCRAFT OTHER		2 1	2	. 1	2	l 2	1	2	3
AIRPORT SUPERVISORY PERSONNEL IMPROPER MAINTENANCE-AIRPORT FACILITIES				2		2	2		2
FAILURE TO NOTIFY OF UNSAFE CONDITION IMPROPER INSPECTION OF FACILITIES OTHER		1	1	6 2	7 1	13 1 2	6 2	8 1	14 1 2
AIRWAYS FACILITIES PERSONNEL PRODUCTION-DESIGN-PERSONNEL									
SURSTANDARD QUALITY CONTROL POOR/INADEQUATE DESIGN OTHER	1		1	2 3 6	2	5 8	2 4 6	2 2	2 6 8
MISCELLANEOUS-PERSONNEL PILOT OF OTHER AIRCRAFT	21		21	43	6	49	64	6	70
GROUND SIGNALMAN SPECTATOR	1	1	1	1 1 2		1 1 2	1 2	1	2 2 3
GROUND CREHMAN PASSENGER	6	3	1 9	18	3	21	24	6	30
DRIVER OF VEHICLE OTHER	3 2	3	3 5	4 3	6 5	10 8	7 5	6 8	13 13
DIRECT ENTRIES THIRD PILOT				2		2	2		2
FLIGHT ENGINEER OTHER FLIGHT PERSONNEL DISPATCHING	1		1	1		1	2		2
SUBTOTAL	58	25	83	275	84	359	333	109	442
** AIRFRAME **									
WINGS SPARS	1		1	1		1	2		2
WING ATTACHMENT FITTINGS, BOLTS BRACING WIRES, STRUTS				1 2		1 2	1 2		1 2
SKIN AND ATTACHMENTS WINGTIPS	. 1		1	3		3 1	4		4 1
OTHER FUSELAGE	3		.3	2		2	5		5
FLOOR STRUCTURE SKIN AND ATTACHMENTS DODRS, DOOR FRAMES			ı	2	1	1 2 4	2	1	1 2. 5
WINDSHIELDS, WINDOWS, CANOPIES SEATS	•		•	3	1	1 3	3	1	1 3
OTHER LANDING GEAR				2	3	5	2	3	.5
MAIN GEAR-SHOCK ABSORBING ASSY, STRUTS, ATTACHMENTS, ETC NORMAL RETRACTION/EXTENSION ASSEMBLY EMERGENCY/EXTENSION ASSEMBLY TAILWHEEL ASSEMBLIES				1 4 40 7 3	2 6 1 4	16 46 8 7	1 4 40 7 3	2 6 1 4	16 46 8 7

AIRFRAME (CONTINUED)	FAI	TAL ACCIO	ENTS		TAL ACCI		AL	L ACCIDE	NT S
	CAUSE	FACTOR	TOTAL		FACTOR		CAUSE	FACTOR	TOTAL
NDSEWHEEL ASSEMBLIES WHEELS, TIRES, AXLES SKI ASSEMBLIES	,			8 19	9	8 2 8 1	19 1	9	8 28 1
FLOAT ASSEMBLIES SKID ASSEMBLY BRAKING SYSTEM (NORMAL)				1 1 27	1	2	1	1	2 1
LANDING GEAR HAWNING AND INDICATING COMPONENTS GEAR LOCKING MECHANISM SWITCHES, LEVERS, CRANKING MECHANISM, ETC				1 10 5	10	37 14 10 5	27 1 10 5	10 13	37 14 10 5
NOSEMMEEL STEERING OTHER FLIGHT CONTROL SURFACES				4	1 2	5 6	4.	1 2	5 6
ELEVATOR, ASSEMELY ATTACHMENTS RUDDER, SURFACES ATTACHMENTS			2	1	1	2	1	1	2
AILERON, SURFACES ATTACHMENTS HORIZONTAL STABILIZER, ATTACHMENTS FLAP ASSEMBLIES	1	1	1	5 1	1	6 1 1	2	. 2	8 2 1
OTHER	1		1	2	1	3	3		. 4
SUBTOTAL ** POWERPLANT **	9	1	10	173	61	234	1 82	62	244
ENGINE STRUCTURE									
CRANKSHAFT MASTER AND CONNECTING RODS CYLINDER ASSEMBLY	3 2		3 2	10 18 18		10 18 18	10 21 20		10 21 20
PISTON, PISTON RINGS VALVE ASSEMBLIES	ž		3	11		11	14		14 24
RLOWER, IMPELLER ASSEMBLY MOUNT AND VIBRATION ISOLATORS OTHER	4		4	6 1 9		6 1 9	6 1 13		6 1 13
IGNITION SYSTEM MAGNETOES				17		17	17		17
SPARK PLUG COILS IGNITION HARNESS, SMIELDING	1	1	2	9 2 1	2 1	11 2 2	10 2 2	3	13 2 3
SHITCHES LEADS	i		ī	1	•	1	1		1
OTHER FUEL SYSTEM Lines and fittings	1		1	2		2 23	2 24		2 24
SELECTOR VALVES FILTERS, STRAINERS, SCREENS	i		1	6 4		6	7		7 4
CARRURETOR PUMPS FUEL INJECTION SYSTEM	1 1	1	1 2	17 4 2		17 4 2	1 8 5 2	1	18 6 2
VENTS, DRAINS, TANK CAPS RAM AIR ASSEMBLY	1		1	11	1	12	12	1	13 3
OTHER LURRICATING SYSTEM LINES, HOSES, FITTINGS	1		1	11 8	2	13	12 8	2	14
VALVES FILTERS, SCREENS				2 1		2 1	2 1		2
OTHER COOLING SYSTEM COMLING				3	1	4 2	. 3	1	4
OTHER PROPELLER AND ACCESSORIES	_			1		1	1		1
BLADES HUBS Hydraulic Pitch Control Mechanism	3		3 1	14 3 2	1	15 4 2	17 3 3	1 1	18 4 3
SPINNERS, DOMES GOVERNORS				1		1	1 1		1
ALADE RETENTION MECHANISM METAL CAP, BLADE LEADING EDGE OTHER	1		1	2	1	3	1 1 2	1	1 1 3
EXHAUST SYSTEM MAN 1FOLDS				1	•	1	1	•	1
MUFFLERS GASKETS CLAMPS	2		2 1	3 1 3		3 1	. 1 4		5 1
CLANT 3	1		1	3		3	4		4

•										
POWERPLANT (CONTINUĒD)		AL ACCIO			TAL ACC		ALL ACCIDENTS			
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSF	FACTOR	TOTAL	
STACKS BAFFIFS				2		2 1	2		2	
EXTERNAL SUPERCHARGER OTHER	1	1	1 1	2		2	1 2	1	1	
ENGINE ACCESSORIES STARTERS				1		1	1		1	
ENGINE CONTROLS-COCKPIT THROTTLE-POWER LEVER ASSEMBLIES MIXTURE CONTROL ASSEMBLIES	1		1	17	1	18	18	1	19	
INDUCTION AIR, PREHEAT CONTROLS POWERPLANT-INSTRUMENTS				i		1	ì		1	
FUEL QUANTITY GAUGE OTHER		7	5		11 2	11 2		13	13	
MISCELLANEOUS POWERPLANT FAILURE FOR UNDETERMINED REASONS	15		15	153		153 1	168		168	
FOREIGN OBJECT DAMAGE COMPRESSOR STALLS DETONATION	1		1	1		1	1 1		1	
OTHER REDUCTION GEAR ASSEMBLY	1		i	5		5			6	
GEARS, ACCESSORY DRIVE COMPRESSOR ASSEMBLY	1		1	1 2		1 2	3		1	
BLADE, COMPRESSOR ROTOR COMBUSTION ASSEMBLY TURBINE ASSEMBLY	1		•	2		2	,		,	
WHEEL, TURBINE OTHER				I 1		1 1	1		1 1	
ACCESSORY DRIVE ASSEMBLY LURICATING SYSTEM FUEL SYSTEM										
NOZZLE, FUEL FUEL SHUTOFF				1 1		1	1		1 1	
SAFETY SYSTEM IGNITION SYSTEM										
TORQUEMETER OTHER AIR BLEED					1	1		1	1	
AIR NEED EXHAUST SYSTEM THRUST REVERSER										
PROPELLER SYSTEM CONSTANT SPEED DRIVE										
POWER LEVER PROPELLER LEVER										
REVERSE THRUST LEVER ENGINE INDICATING EQUIPMENT ENGINE INSTALLATION										
SUBTOTAL	51	5	56	453	26	479	: 504	31	535	
** SYSTEMS **										
ELECTRICAL SYSTEM BATTERIES	1		1	2	2	4	3	2	5	
GENERATORS/AITERNATORS REGULATOR RELAYS AND WIRING	1		1	1	8	9 1 2	1 1 2	8	9 2 2	
MOTORS PROTECTIVE DEVICES				1	3	1 4	1	3	1	
HYDRAULIC SYSTEM RESERVOIR, LINES, FITTINGS				3		3	3		3	
SEALS SHUT-OFF VALVE FLIGHT CONTROL SYSTEMS				1		1	1		1	
AILERON AND AILERON TAR CONTROL SYSTEM ELEVATOR AND ELEVATOR TAB CONTROL SYSTEM	1		1	4 2	1	4	4	1	4	
RUDDER AND RUDDER TAB CONTROL SYSTEM WING FLAP CONTROL SYSTEM (HYDRAULIC)	1		1	4		4	1		4	
FLIGHT CONTROL BOOST SYSTEM (HYDRAULIC) ANTI-ICING, DE-ICING SYSTEMS PROPELLER ANTI-ICING, DE-ICING SYSTEMS				2		2	2	-	2	
CARBURETOR DE-ICING SYSTEM AIR CONDITION, HEATING AND PRESSURIZATION	1		1	1	1	i	1	1	5	

SYSTEMS (CONTINUED)		_						•	
	FAT	AL ACCIO	DENTS		TAL ACCI		AL	L ACC IDE	NTS
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FAC T OR	TOTAL
OTHER AUTO PILOT FIRE WARNING SYSTEM FIRE EXTINGUISHER SYSTEM	1		1				1		1
POWERPLANT DXYGEN SYSTEM				1		1	1		1
CREW SYSTEM OTHER SYSTEMS OTHER		1	1	1		1	1	1	.1
SUBTOTAL	6	1	7	27	16	43	33	17	50
** INSTRUMENTS/EQUIPMENT AND ACCESSORIES **									
FLIGHT AND NAVIGATION INSTRUMENTS ALTIMETERS ALRSPEED OTHER COMMUNICATIONS AND NAVIGATION EQUIPMENT TRANSMITTERS AND/OR RECEIVERS VOR RECEIVERS COMPASS RECEIVERS MISCELLANEOUS ECUIPMENT	1	1	1 2	1	3 1 1	1 3 1 1	1	4 1 3 1 1	1 4 2 3 1
SPRAY, DUSTING EQUIPMENT SIGN TOWING EQUIPMENT GLIDER LAUNCH/TOW EQUIPMENT OTHER				2	1	2. 1 1	2	1	2 1 1
SUBTOTAL	1	2	3	4	10	14	5	12	17
** ROTORCRAFT **									
ROTOR ASSEMBLIES MAIN ROTOR BLADES TAIL ROTOR BLADES MAIN ROTOR HEAD ASSEMBLIES UNIVERSAL JOINTS, COUPLINGS OTHER	1 1 3	1	2 2 3	5 1 1	i	5 1 1	6 1 1 1 3	1 2	7 3 1 1 3
TRANSMISSION ROTOR DRIVE SYSTEM ENGINE DRIVE SHAFT MAIN ROTOR DRIVE SHAFT MAIN ROTOR GEAR BOX TAIL ROTOR GEAR BOX OTHER				2 1 2 1 3		2 1 2 1 3	2 1 2 1 3		2 1 2 1 3
FLIGHT CONTROL SYSTEMS CYCLIC PITCH CONTROL SYSTEM COLLECTIVE PITCH CONTROL SYSTEM TAIL ROTOR PITCH CONTROL SYSTEM OTHER	1		1	4 3 1	. 1	4 3 1 1	5 3 1 1	1	5 3 1 2
MISCELLANEDUS UNITS AND ASSEMBLIES TAIL BOOMS/PYLONS/CONES OTHER			•	1 1		1	1		1
SUBTOTAL	7	2	9	26	2	28	33	4	37
** AIRPORTS/AIRWAYS/FAC ILITIES **									
AIRPORT FACILITIES APPROACH LIGHTING RUNMAY LIGHTING RAMP FACILITIES OTHER AIRPORT CONDITIONS WET RUNMAY ICE/SLUSH ON RUNMAY SNOW ON RUNMAY SNOW HINDROWS UMMARKED OBSTRUCTIONS SOFT SHOULDERS (RUNMAY) ROUGH WATER HIGH VEGETATION HIDDEN HAZARD		i	1	1 1 3 12 7 6 3 6	1 3 1 2 38 18 31 15 6 23 1	1 3 2 3 41 30 38 21 9 29 1 24	1 1 3 12 7 6 3 6	1 3 1 2 38 18 32 15 6 23 1	1 3 2 3 41 30 39 21 9 29 1 24
					•	• •		•	1.

AIRPORTS/AIRWAYS/FACILITIES (CONTINUED)	FAT	AL ACCIE	ENTS	NONFA	TAL ACCI	DENTS	ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FAC TOR	TOTAL	CAUSF	FACTOR	TOTAL
POORLY MAINTAINED RUNWAY SURFACE SOFT RUNWAY HET RAMP/TAXIWAY ICE/SLUSH ON RAMP/TAXIWAY SNOW ON RAMP/TAXIWAY SOFT SHOULDERS (RAMP/TAXIWAY) SOFT TAXIWAY			1	3 17 1 1	13 23 1 1 2	16 40 1 1 3 3	3 17	14 23 1 1 2 2	17 40 1 1 3 3
DIRECT ENTRIES AIRHAYS FACILITIES	1	В	9	1	109	1 43	35 1	117	152 1
SUBTOTAL	1	10	11	. 111	317	428	112	327	439
** WEATHER **									
LOW CEILING RAIN FOG SNOW ICING CONDITIONS-INCLUDES SLEET, FREEZING RAIN, ETC CONDITIONS CONDUCIVE TO CARA/INDUCTION SYSTEM ICING UNFAVORABLE WIND CONDITIONS SUDDEN WINDSHIFT TURBULENCE IN FLIGHT, CLEAR AIR TURBULENCE ASSOCIATED WITH CLOUDS AND/OR THUNDERSTORMS DOWNDRAFTS, UPPRAFTS LOCAL WHIRLWIND TORNADO SOUALL LINE ADVERSE WINDS ALOFT HIGH TEMPERATURE DBSTRUCTIONS TO VISION	9431664331114	174 79 121 28 25 7 7 1 19 7	183 83 124 29 31 6 10 2 30 11	9 5 4 5 7 36 113 100 5 6 17 7 7	54 25 36 14 22 30 199 14 12 8 30 2	63 30 40 19 29 66 312 24 17 14 47 9 1	18 9 7 6 13 40 116 10 6 17 21 7 1	22 B 104 157 42 47 32 206 14 13 27 37 2	246 113 164 48 60 72 322 24 19 44 58 9 1 1 1 4 25
HIGH DENSITY ALTITUDE THUNDERSTORM ACTIVITY OTHER	4	21 23 7	21 27 7	8 3 3	76 15 4	84 18 7	8 7 3	97 38 11	105 45 14
SUBTOTAL	51	526	577	243	577	820	294	1103	1397
** TERRAIN **									
WET, SOFT GROUND SNOW-COVERED HIGH VEGETATION HIDDEN OBSTRUCTIONS ROUGH/UNEVEN ROUGH HATER GLASSY HATER HIGH OBSTRUCTIONS LOGSE GRAVEL SANDY OTHER	10	2 1 1 100	1 1 6 1 1 110	67 20 34 9 222 2 154 1 13 85	24 14 40 5 88 4 2 283 1 5	91 34 74 14 310 6 2 437 2 18	67 20 35 10 226 2 164 1 13 87	24 14 40 5 90 5 3 383 1 5	91 34 75 15 316 7 3 547 2 18
SUBTOTAL	18	123	141	607	536	1143	62 5	659	1284
** MISCELLANEOUS **									
RIRD COLLISION VORTEX TURBULENCE PROP/JET/ROTOR BLAST ANIMAL(S) ON RUNNAY/TAXIWAY/RAMP EVASIVE MANEUVER TO AVOID COLLISION UNOUALIFIED PERSON OPERATED AIRCRAFT SUICIDE FOREIGN OBJECT DAMAGE SHOKE IN COCKPIT FOREIGN MATERIAL AFFECTING NORMAL OPERATIONS UNDETERMINED DIRECT ENTRIES	1 4 8 1 3 1 3 54	3	1 4 11 1 3 1 3 54 5	2 14 5 3 42 1 7 36 21	2 1 1 22 1	2 16 6 4 64 2 7 2 41 21 21	3 18 5 3 50 2 3 8 39 75	2 1 1 25 1	3 20 6 4 75 3 8 2 44 75
SUBTOTAL	80	3	83	133	34	167	213	37	250

MISCELLANEOUS (CONTINUED)	FATAL ACCIDENTS				TAL ACC 1		ALL ACCIDENTS			
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	
GRAND TOTAL	1205	874	2079	65 77	2120	8697	7782	2994	10776	
** MISCELLANEOUS ACTS. CONDITIONS **										
ALTIMETER SETT (NG-INCORRECT ANTI-ICING/DEICING EQUIP-IMPROPER OPER. OF/FAILED TO USE CHECKLIST-FAILED TO USE CREW COORDINATION-POOR DISREGARD OF GOOD OPERATING PRACTICE	3	1 1 1	1 4 1	68 4 1	1 5 38 6 3	1 73 42 7 4	71 4 1	2 6 39 7 3	2 77 43 8 4	
IMPROPER EMERGENCY PROCEDURES	8	4	12	26	12	38	34	16	50	
FEATHERED WRONG ENGINE INSTRUMENTS-MISREAD OR FAILED TO READ	1	3	4	2 4	. 3	2 7	? 5	6	2 11	
SEAT BELT NOT FASTENED	1	5 1	6 2		1	1 32	1	. 6	7	
NOT ALLIGNED WITH RUNWAY/INTENDED LANDING AREA UNWARRANTED LOW FLYING	1 36	15	51	17 37	15 13	50	18 73	16 28	34 101	
FAILED TO EXTEND THE LANDING FLAPS		•		7	1	1 7	Я	1 12	1	
FAILED TO USE ALL AVAILABLE RUNWAY LANDED AT WRONG AIRPORT	1	2	3	'	10 5	17 5	. n	5	20 5	
INATTENTIVE TO FUEL SUPPLY	2		2	47	7	54	49	7	56	
FLEW INTO BLIND CANYON PREMATURE FLAP RETRACTION	3	6	9	10	1	11 5	13	7 3	20 5	
POORLY PLANNED APPROACH	ı	14	15	8	56	64	9	70	79	
MISCALCULATED FUEL CONSUMPTION JETTISONED LOAD	3	1	3 1	38	3 20	41 20	41	3 21	44 21	
STOLEN OR UNAUTHORIZED USE OF AIRCRAFT		9	9	1	8	9	ı	17	18	
LANDED ON FDAMED RUNWAY CORRECTING LENSES—NOT USED					6 1	6		6 1	6	
IMPROPERLY SECURED	- 5		5	21	4	25	2.5	4	30	
BOGUS PART COMMUNICATIONS FAILURE				3	2	3 2	3	2	3 2	
ELECTRICAL FAILURE	1	1	2	_ 3	16	19	4	17	21	
ENGINE LOADED UP FATIGUE FRACTURE	6		6	23 30	1 2	2 4 32	2 3 36	1 2	24 38	
FUEL GRADE-IMPROPER	(1		0	1	1	2	l l	1	2	
HYDRAULIC FAILURE WINDSHIELD, DIRTY, FOGGY, ETC-RESTRICTED VISION				3	1 10	4 13	3	1 10	13	
WRONG PART				4	10	4	6	10	4	
IMPROPER ALIGNMENT/ADJUSTMENT FAILURE OF TWO OR MORE ENGINES	1		,	11	9	11 15	1)	12	11 19	
SEPARATION IN FLIGHT	1	3 43	44		28	28	í	71	72	
FIRE IN CABIN/ COCKPIT/ BAGGAGE COMPARTMENT	2		2	. 2	. 3	5 23	2)	3 7	7	
FIRE IN ENGINE FIRE IN BRAKES/ WHEEL ASSEMPLY/ WHEEL WELL	2	. 1	5 2	17 1	6	1	3	,	28 3	
ASYMETRICAL FLAPS	1		1	2			1		1	
LATERAL IMBALANCE CORRODED/CORROSION	3	1	4	4	3	2 7	2 7	4	2 11	
INCORRECT TRIM SETTING	1		1	1		1	2		2	
CONGESTED TRAFFIC-PATTERN PILOT FATIGUE	1	3 15	3 16	3	3 9	12	4	6 24	6 2 B	
FUEL EXHAUSTION	17		17	171	2	173	188	2	190	
FUEL CONTAMINATION-EXCLUSIVE OF WATER IN FUEL PILOT SUFFERED HEART ATTACK	1		1 6	5		5	6		6 6	
ALCOHOLIC IMPAIRMENT OF EFFICIENCY AND JUDGMENT	13	5 4	18	6	3	9	19	8	27	
HYPOXIA CARBON MONOXIDE PDISONING		1	4	1		1	1	4 1	5 1	
ICE-IN FUEL				8 1		8 1	۶ 1		8	
ICE-ENGINE ICE-CARBURETOR	4		4	62		62	66		1 66	
AIRFRAME ICE	9	11	20	13	14	2 7 6	22	25	47 8	
ICE-WINDSHIELD IMPROPERLY LDADED AIRCRAFT-WEIGHT-AND/OR CG	2	2 18	20	8	3 15	23	10	5 33	43	
INTERFERENCE WITH FLIGHT CONTROLS WHITEOUT	2	1	2 1	4	3	7 5	6 1	3	9	
SUNGLARE		4	4	2	27	29	2	31	33	
LACK OF LUBRICATION-SPECIFIC PART, NOT SYSTEM				11	1	12	11	1.	12	
OIL EXHAUSTION-ENGINE LUBRICATION SYSTEM OIL EXHAUSTION-PROPELLER SYSTEM	1		1	12 1		12 1	13 1		13	
OIL CONTAMINATION				ī.		1	1		1	
SIMULATED CONDITIONS FUEL SIPHONING	1	S	3	50	31	51 1	21 1	33	54	
WATER IN FUEL				38		38	38		38	
AIRCRAFT CAME TO REST IN WATER FROZEN, MOISTURE		50	50	3	73	73 3	3	123	123 3	

MISCELLANEOUS ACTS, CONDITIONS (CONTINUED)	FATAL ACCIDENTS				TAL ACCI		ALL ACCIDENTS			
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CA US E	FACTOR	TOTAL	
MISSING TOUCH AND GO LANDING		3	3	3	76	3 76	3	79	3 79	
HYDROPLANING ON WET RUNWAY	2.0	,	29	1	4 4 2	5	1 62	4	5	
OVERLOAD FAILURE MATERIAL FAILURE	28 9	1	9	24 192	463 13	487 205	52 201	464 13	516 214	
FUEL STARVATION	19		19	145	1	146	164	1	165	
OIL STARVATION IMPROPER CLEARANCE-TOLERANCE				4 8	2	10	4 8	2	10	
FUEL SELECTOR POSITIONED BETWEEN TANKS				6		6	6		6	
TIEDOWN LINES SNAPPED FIRE OF UNDETERMINED ORIGIN				1	2	1 3	1	2	1	
UNAPPROVED MODIFICATION				2	1	3	2	1	3	
POOR WELD PREVIOUS DAMAGE	1	2	3	1 8	1 7	2 2 5	1 9	1 19	2 28	
LEAK/LEAKAGE	•	_	,	20	2	22	20	2	22	
LOW FLUID LEVEL				1	1.6	1	1	1.6	1	
CIRCUIT BREAKER POPPED LOW COMPRESSION				1	14 1	15 2	i	14 1	15 2	
RUNWAY CLOSED		,	,		3	3		3	3	
DOWNWIND CARBON DEPOSITS	. 1	6 1	6 2	1	95	96 1	1 2	101	102	
OVER TORQUED				1		1	1 2		1	
UNDER TORQUED LOOSE, PART/FITTING	1		1	1 5	1	1 6	5	1	2 6	
GROUND RESONANCE				1		1	1		1	
BENT BINDING				3 6	1	4 7	3 6	1	4	
BURST				1		1	1		1	
BURNED CHAFFED .	1		1	4 5		4 5	4 6		6	
CROSSED			•	2	1	3	2	1	3	
DETERIORATED DISCONNECTED	2 1		2 1	5 32	1	6 35	7 33	1 3	8 36	
DISTORTED	-			1	_	1	1		l	
ELONGATED EXCESSIVE-WEAR/PLAY	1		1	7	1	1 8	8	1) 9	
ERRATIC	•	4	4	3	10	13	3	14	17	
FLUCTUATING FLUTTER	1	1	2	4	2	2	5	2	2 6	
GROUNDED	1		ī	3	2	5	4	2	6	
EXCESSIVE VOLTAGE IMPROPERLY INSTALLED	4	1	-	1	1	1 17	1 20	2	1	
JAMMED	4	1	5	16 10	1	11	10	1	22 11	
DBSTRUCTED OPEN	3		3	17	1	18	20	1	21	
OUT OF BALANCE				1	1	1	1	1	l I	
OVERHEATED	2		2	7	2	9	9	2	Il	
EXCESSIVE PRESSURE PRESSURE TOO LOW				1 11	6	1 17	11	6	1 17	
PRESSURE, NONE				8	'1	. 8	A Q		8	
SHEARED STICKING				1	1	10 2	1	1	10	
STUCK			,	5	1	6	5	1	6	
EXCESSIVE TEMPERATURE VIBRATION, EXCESSIVE	1 2		1 2	7	3	10	9	. 3	1	
CONGESTED RAMP/TAXIHAY	_		_	1	6	7	1	6	7	
ICE-INDUCTION / FIRE IN WING	2		Z	1	1	1	1 2	1	1	
FIRE IN EMPENNAGE	-		-	1		ī	1		1	
LOAD NOT JETTISONED				3	10 2	13	3	1 O 2	13 2	
FAILED TO USE LANDING LIGHT(S) . INTENTIONAL GROUND-WATER LOOP-SWERVE				29	4	33	29	4	33	
INTENTIONAL WHEELS UP				33	3	36	33	3	36	

DIRECT ENTRY CAUSES

PILOT-RPRTD FELL ASLEEP, EXHSTD FUEL, DITCHING, MISC-PREMATURE TOW RELEASE AT ACFT, REASON UNKNOWN MISC-INTENTIONAL SPIN, UNABLE TO RECOVER.

DIRECT ENTRY CAUSES (CONTINUED)

PILOT-LNDD DN UNLIGHTED RWY INTO THE WIND.
PILOT-LACK-D RECENCY OF EXPERIENCE IN TYPE ACFT
PERSONNEL-INADEQUATE SUPERVISION BY FLT EXAMINER
MISC-LDSS OF CTL IN MTN TERRAIN FOR UNDET REASON.
PLT-PSBL DISORIENTN DUE INJESTN LRG AMT TRAND DRUG
MISC-RESERVE CHUTE OPENED, SPILLED INTO SLIPSTREAM.
PILOT-DESCENDED BLO MDA FOR UNDETERMINED REASON.
ARPT COND-HUD HOLE
MISC-FIRE FROM UNDETERMINED SOURCE
PERSONNEL-INADEQUATE SUPERVISION OF WORK CREW.
PILOT-LDSS OF CTL FOR UNDETERMINED REASON.
PILOT-LDSS OF CTL FOR UNDETERMINED REASON.
PILOT-FAILED TO MAINTAIN ADDT LATERAL SEPARATION
MISC-DSCNT RLO MDA DRG VOR APCH-REASON NOT DTRMD
PILOT-CONTU FLT INTO AREA OF LOW CLOUDS

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

INSTRUCTIONAL ALL OPERATIONS

FXCLUDES ACCIDENTS WITHOUT CAUSAL ASSIGNMENT

INVOLVES 657 TOTAL ACCIDENTS
INVOLVES 53 FATAL ACCIDENTS

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	FAT	FATAL ACCIDENTS			TAL ACCI	DENTS	ALL ACCIDENTS			
BROAD CAUSE/FACTOR	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	
PILOT	44 83•02	10 18.87	44 83.02	534 88.41	72 11.92	534 88.41	578 87 . 98	82 12.48	578 87•98	
PERSONNEL.	8 15•09	7 13.21	13 24.53	50 8.28	26 4•30	75 12.42	58 8•83	33 5.02	88 13.39	
ATRFRAME	.00	.00	.00	2 •33	3 •50	5 •83	2 •30	3 •46	.76	
LANDING GFAR	.00	.00	.00	11 1•82	3 •50	14 2.32	11 1.67	3 •46	14 2.13	
POWERPL ANT	3 5.66	•00	3 5.66	41 6.79	2 •33	43 7.12	44 6.70	2 •30	46 7.00	
SYSTEMS	.00	.00	.00	1 •17	1 •17	2 •33	1 •15	1 •15	.30	
INSTRUMENTS/EQUIPMENT AND ACCESSORIES	.00	.00	.00	.00	2 •33	2 •33	.00	.30 2	.30	
ROTORCR4FT.	.00	.00	.00	1 •17	1 •17	2 •33	1 •15	1 •15	.30	
ATRPORTS/AIRWAYS/FACILITIFS	•00	2 3 . 77	2 3.77	15 2.48	53 8.77	68 11.26	15 2.28	55 8.37	70 10.65	
WFATHFR	.00	9 16.98	9 16.98	32 5.30	71 11.75	103 17.05	32 4.87	80 12.18	112 17.05	
TERRAIN	2 3•77	8 15.09	10 18.87	84 13.91	66 10.93	150 24.83	86 13.09	74 11.26	160 24•35	
MTSCFLLANEOUS	2 3•77	1 . 1.89	3 5.66	20 3.31	5 •83	25 4•14	22 3•35	6 •91	28 4•26	
UNDETERMINED	7 13.21	.00	7 13.21	5 .83	.00	5 .83	12 1.83	.00	12 1.83	

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 PELATED FACTOR IN THE SAME CAUSAL CATEGORY. THE ACCIDENT IS REPRESENTED ONCE UNDER THE TOTAL FOR THAT CATEGORY

NONCOMMERCIAL (PLEASURE) ALL OPERATIONS

EXCLUDES ACCIDENTS WITHOUT CAUSAL ASSIGNMENT

INVOLVES 2153 TOTAL ACCIDENTS
INVOLVES 383 FATAL ACCIDENTS

		FAT	AL ACCID	FNTS	NONFA	TAL ACCI	DENTS	ALL ACCIDENTS		
	PROAD CAUSE/FACTOR	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
	PILOT	344 89•82	101 26.37	347 90.60	1528 86.33	216 12•20	1537 86.84	1872 86.95	317 14.72	1884 87.51
	PFRSONNEL.	24 6•27	1.57	30	105 5.93	29 1.64	134 7.57	129 5.99	35	164
	ATRERAME	3 •78	1 •26	1.04	13 •73	4 •23	17 ⊶96	16 •74	5 •23	21 •98
	I ANDING GFAR	.00	.00	.00	62 3.50	26 1.47	87 4.92	62 2.88	26 1.21	87 4•04
5	POWERP ANT	17 4.44	2 •52	19 4.96	180 10.17	10 •56	189 10.68	197 9.15	. 12 . •56	208 9.66
1	SYSTEMS	1 •26	.00	.26	9 •51	8 •45	17 •96	10 •46	8 •37	18 •84
	INSTRUMENTS/EQUIPMENT AND ACCESSORIES	.00	2 •52	2 •52	1 •06	1 •06	2 •11	1 •05	3 •14	.19
	ROTORCRAFT	3 .78	.00	3 •78	.11	.00	2 •11	5 •23	•00	5 •23
	ATRPORTS/AIPWAYS/FACTI ITIES	.00	7 1.83	7 1.83	59 3.33	157 8.87	214 12.09	59 2.74	164 7.62	221 10.26
	WEATHER	13 3.39	165 43.08	174 45.43	123 6.95	266 15.03	384 21.69	136 6.32	431 20.02	558 25•92
	TEBRA[N	6 1.57	76 19.84	82 21.41	283 15•99	260 14.69	540 30•51	289 13,42	336 15•61	622 28.89
	MTSCFLLANEOUS	12 3.13	1 •26	13 3.39	41 2.32	17 •96	58 3.28	53 2.46	18 •84	71 3.30
	UNDETERMINED	25 6.53	.00	25 6.53	8 •45	.00	8 •45	33 1.53	.00	33 1.53

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

^{*} IF AN ACCIDENT TRULUDES BOTH A CAUSE AND RELATED FACTOR IN THE SAME CAUSAL CATEGORY. THE ASSISTENT IS REPRESENTED ONCE UNDER THE TOTAL FOR THAT CATEGORY

NONCOMMERCIAL (BUSINESS) ALL OPERATIONS

FXCLUDES ACCIDENTS WITHOUT CAUSAL ASSIGNMENT

INVOLVES 409 TOTAL ACCIDENTS
INVOLVES 92 FATAL ACCIDENTS

		FATAL ACCIDENTS NO			NONFA	TAL ACCI	DENTS	ALL ACCIDENTS		
	RROAD CAHSE/FACTOR	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
	PILOT	74 80•43	25 27 . 17	75 81.52	253 7 9.81	41 12•93	254 80.13	327 79•95	66 16.14	329 80.44
	PFRSONNEL.	5 5.43	•00	5 5•43	24 7 . 57	6 1.89	30 9.46	· 29 7.09	6 1.47	35 8.56
	ATRERAME	11.09	•00	. 1 1.09	2	2 •63	4 1.26	3 .73	2 .49	5 1.22
	LANDING GFAP	•00	•00	•00	28 8.83	6 1.89	34 10.73	28 6.85	6 1.47	34 8•31
- 46	POWERPLANT	7 7.61	2 2•17	8 8.70	42 13.25	6 1.89	48 15•14	49 11.98	8 1.96	56 13.69
	SYSTEMS	2 2.17	.00	2 2.17	2 •63	3 •95	5 1•58	4 •98	3 •73	7 1•71
	INSTRUMENTS/EQUIPMENT AND ACCESSORIES	1 1.09	.00	1 1.09	.00	4 1.26	4 1.26	1 •24	4 •98	5 1.22
	ROTORCRAFT	.00	•00	.00	5 1.58	1 • 32	6 1•89	5 1.22		6 1.47
	ATRPORTS/AIRWAYS/FACILITIFS	.90	1 1•09	1 1.09	4 1.26	34 10.73	38 11•99	4 •98	35 8.56	39 9•54
	WFATHER	10 10.87	43 46.74	50 54.35	27 8.52	41 12•93	68 21.45	37 9.05	84 20.54	118 28.85
	TERRAIN	4 4•35	19 20.65	23 25.00	51 16.09	39 12.30	89 28.08	55 13.45	58 14.18	112 27.38
	MISCFLLANFOUS	1 1.09	1 1.09	2 2.17	13 4.10	3 •95	16 5•05	14 3.42	4 •98	18 4.40
	UNDETERMINED	11 11•96	.00	11 11.96	2 •63	.00	2 •63	13 3.18	.00	13 3.18

THE FIGURES OPPOSITE FACH 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

NONCOMMERCIAL (CORP/EXECUTIVE) ALL OPERATIONS

EXCLUDES ACCIDENTS WITHOUT CAUSAL ASSIGNMENT

INVOLVES 82 TOTAL ACCIDENTS
INVOLVES 12 FATAL ACCIDENTS

	FAT	AL ACCID	ENTS	NONFA	TAL ACCI	DENTS	ALL ACCIDENTS		
BROAD CAUSE/FACTOR	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
			٠						
PTLOT	8 66.67	? 16.67	8 66.67	45 64•29	5 7.14	46 65.71	53 64.63	7 8.54	54 65.85
PFRSONNEL .	.00	.00	.00	13 18.57	1 1.43	14 20.00	13 15.85	1. 1.22	14 .17.07
ATRFRAME	.00	.00	•00	1 1.43	00	1.43	1	•00	1.22
LANDING GEAR	•00	.00	.00	10 14.29	1 1.43	11 15.71	10 12.20	1 1.22	11 13.41
POWERPL ANT	1 8.33	.00	1 8.33	16 22.86	1 1.43	16 22.86	17 20.73	1	17 20.73
SYSTEMS	1 R.33	.00	1 8.33	1 1.43	.00	1.43	2 2.44	•00	2 2.44
INSTRUMENTS/EQUIPMENT AND ACCESSORIES	.00	.00	• o o	.00	.00	• 0 0	.00	.00	.00
ROTORCRAFT	1 9.33	.00	1 8•33	.00	.00	.00	1 1.22	.00	1 1•22
ATRPORTS/AIRWAYS/FACILITIES	.00	.00	.00	5.71	6 8.57	9 12.86	4 4.88	6 7.32	9 10.98
WEATHER	•00	8 66.67	8 66.67	4 5•71	15 21.43	18 25.71	4 4.88	23 28.05	26 31.71
TFRRAIN	.00	1 8.33	8.33	4 5.71	3 4 . 29	7 10.00	4 4.88	4 4.88	8 9.76
MISCELLANEOUS	2 16.67	.00	2 16.67	1 1.43	•00	l 1.43	3 3.66	.00	3 3.66
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

COMMERCIAL (AFRIAL APPLICATION) ALL OPERATIONS

EXCLUDES ACCIDENTS WITHOUT CAUSAL ASSIGNMENT

INVOLVES 374 TOTAL ACCIDENTS
INVOLVES 38 FATAL ACCIDENTS

84

	FAT	AL ACCIO	ENTS	NONFA	TAL ACCI	DENTS	ALL ACCIDENTS		
AROAD CAUSE/FACTOR	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
PILOT	33 36.84	2 5•26	33 86.84	248 73.37	26 7 . 69	250 73•96	281 74.73	28 7 . 45	283 75•27
PERSONNEL	.00	.00	.00	28 8.28	5 1.48	32 9•47	28 7.45	5 1.33	32 8•51
ATRERAME	• 00	.00	•00	•00	.00	•00	.00	.00	-00
LANDING CEAR	.00	•00	.00	6 1.78	2 •59	8 2.37	6 1.60	? •53	8 2.13
PUMEBDE 974	3 7.89	.00	3 7.89	82 24•26	2 •59	83 24.56	85 22 . 61	2 •53	86 22 . 87
SYSTEMS	•00	.00	.00	4 1.18	.00	4 1.18	4 1.06	.00	4 1.06
INSTRUMENTS/FOUTPMENT AND ACCESSORIES	.00	.00	.00	2 •59	.00	2 •59	2 •53	.00	.53
ROTORCRAFT	1 2•63	• 0 0	1 2.63	5 1•48	.00	5 1.48	6 1.60	.00	6 1.60
ATRPORTS/ATPWAYS/FACTI TTIFS	.00	.00	.00	2 •59	13 3•85	14 4.14	2 •53	13 3.46	14 3.72
WFATHER	1 2,63	7.89	4 10.53	10 2.96	37 10.95	47 13.91	11 2.93	40 10.64	51 13.56
TERRATN	? 5•26	7 14•42	9 23 . 6લ	10 0 29.59	61 23 . 96	181 53•55	102 2 7. 13	88 23.40	190 50.53
MISCELLAMEOUS	1 2.63	.00	1 2.63	14 4.14	4 1.18	18 5.33	15 3.99	1.06	19 5.05
HMDETERMINED	1 2.63	•00	. 1 2.63	2 •59	.00	2 •59	3 .80	•00	.80

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

COMMERCIAL (AIR TAXI) ALL OPERATIONS

FXCLUDES ACCIDENTS WITHOUT CAUSAL ASSIGNMENT

INVOLVES 139 TOTAL ACCIDENTS
INVOLVES 40 FATAL ACCIDENTS

		FAT	AL ACCID	ENTS	NONFA	TAL ACCI	DENTS	ALL ACCIDENTS		
PROAD CAUSE/FACTOR	PROAD CAUSE/FACTOR	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL*
	PILOT	28 70.00	9 22.50	29 72.50	70 70.71	12 12.12	70 70•71	98 70.50	21 15.11	99 71•22
	PFRSONNEL	7 17.50	10.00	11 27.50	11 11.11	9 9.09	19 19.19	18 12.95	13 9.35	30 · 21.58
	ATRFRAME	2 5.00	.00	2 5.00	1 1.01	.00	1 1.01	3 2.16	•00	3 2.16
	LANDING GEAP	.00	•00	.00	8 8.08	6 6.06	14 14.14	8 5.76	6 4•32	14 10.07
ρ ή -	POWERPLANT	5 12.50	.00	5 12.50	15 15•15	.00	15 15•15	20 14.39	.00	20 14•39
ĭ	SYSTEMS	1 2•50	.00	1 2.50	2 2•02	.00	2 2•02	3 2.16	.00	3 2.16
	INSTRUMENTS/EQUIPMENT AND ACCESSO-1ES	.00	.00	•00	•00	•00	•00	00	.00	.00
	ROTORCRAFT	1 2.50	1 2.50	2.50	2.02 2	.00	2.02 2	3 2.16	1 •72	3 2.16
	ATRPORTS/ATRWAYS/FACILITIES	• 0 0	.00	•00	7 7.07	9 9•09	15 15•15	7 5.04	9 6.47	15 10.79
	WFATHFR	3 7.50	17 42.50	19 47.50	7 7.07	19 19•19	24 24•24	10 7.19	36 25 . 90	43 30.94
	TFRRAIN	2 5.00	4 10.00	6 15.00	11 11.11	10 10.10	21 21.21	13 9.35	14 10.07	27 19.42
,	MISCELLANEOUS	10.00	.00	4 10.00	2 2.02	2 2•02	4 4.04	6 4.32	2 1.44	8 5.76
	INDETERMINFO	l 2.50	.00	1 2•50	.00	.00	.00	.72	.00	.72

THE FIGURES OPPOSITE FACH 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 HELATED FACTOR IN THE SAME CAUSAL CATEGORY, THE ACCIDENT IS REPRESENTED ONCE UNDER THE TOTAL FOR THAT CATEGORY

KIND OF FLYING BY INJURY INDEX

INJURY INDEX

	48	, P.V	OUS	HO4 .01	AE JHEHOW		
KIND OF FLYING	4*	50	4	. 4		RECORDS	ACCIDENTS
INSTRUCTIONAL							
DUAL	31	19	32	148		230	230
SOLO	9	14	35	207		. 265	265
CHECK		2	1	9		12	12
TRAINING	15	13	21	110		159	158
NONCOMMERCIAL							
PLEASURE	395	205	321	1299		2220	2208
PRACTICE	12	10	15	56		93	93
BUSINESS	92	24	43	252	1	412	411
CORPORATE/EXECUTIVE	12	3	5	64		84	84
AERIAL SURVEY	1	1	1	6		9	9
COMPANY FLIGHT							
OTHER	2			6		8	8
COMMERC IAL					•	•	
AERIAL APPLICATION	29	43	28	118		218	218
CROP CONTROL RELATED FLIGHT	5	11	22	105	•	143	143
FIRE CONTROL	1		2	3		6	6
FIRE CONTROL RELATED FLIGHT	3		1	5		9	9
AERIAL MAPPING/PHOTOGRAPHY	2	1	1	4		8	7
AERIAL ADVERTISING		1	1	4		6	6
POWER AND PIPELINE PATROL	2	3		4		9	9
FISH SPOTTING				2		2	2
AIR TAXI-PASSENGER OPERATIONS	26	5	12	58		101	101
AIR TAXI-CARGO OPERATIONS	16	5	z	23		46	46
CONSTRUCTION WORK	2			1		3	3
SCHEDULED PASSENGER SERVICE							
SCHEDULED CARGO SERVICE							
INTRA-STATE CHARTER PASSG.				1		1	1
INTRA-STATE CHARTER CARGO.							
MILITARY CONTRACT-PASSENGER				1		1	1
MILITARY CONTRACT-CARGO							
CHARTER CARGO-DOMESTIC			1	4		5	5
CHARTER PASSG-DOMESTIC	1		4	2		7	7
CHARTER-CARGO-INTERNATIONAL	1	1				2	2
CHARTER-PASSG-INTERNATIONAL							
OTHER	3	1		6		10	10

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IND OF FLYING	4	P S	4	r, 40	A JUKHOW	RECORDS	ACCIDENTS
UNKNOWN/NOT REPORTED				1		1	1
MISCELLANEOUS							
EXPERIMENTATION		1				1	. 1
TEST	8	8	5	17		38	38
DEMONSTRATION	4		5	6		15	15
FERRY	12	6	9	39		66	' 66
SEARCH AND RESCUE	2	2	2	4		10	10
AIR SHOW/AIR RACING	5	3	2	1		11	10
PARACHUTE JUMP		2	5	7		14	14
PARACHUTE JUMP-AIR SHOW	1					1	ı
TOWING GLIDERS			2	2		4	4
SEEDING CLOUDS					•		
HUNT ING	2	1		5		. 8	В
POLICE PATROL		1	5	9		15	15
HIGHWAY TRAFFIC ADVISORY			1	2		3	3
ALL OTHER PUBLIC FLYING	4	,3	2	8		17	17
OTHER	3	1	4	6		14	14
UNKNOWN/NOT REPORTED	5			5		10	10
ECORDS	706	390	590	2610		4297	
CCIDENTS	695	386		2589	1		4256

KIND OF FLYING BY AIRCRAFT DAMAGE ALL OPERATIONS

		ß	(A)	•					
	, S ^Q	FORE S	AFRIC	A HOME				0568006	ACCIDENTS
	O.	30.	W	40				KECUKUS	ACCIDENTS
INSTRUCTIONAL									
DUAL	42	185	5	1				230	230
SOLO	20	244	1.					265	265
CHECK	1	11						12	12
TRAINING	23	135	7					159	158
NONC OMMERC I AL									
PLEASURE .	548	1645	15	12				2220	2208
PRACTICE	21	72						93	93
BUSINESS	107	303	1	1	,			412	411
CORPORATE/EXECUTIVE	18	64	1	1				84	84
AERIAL SURVEY	2	7						9	9
COMPANY FL IGHT									
OTHER	2	6						8	8
COMMERC IAL									
AERIAL APPLICATION	75	143						218	218
CROP CONTROL RELATED FLIGHT	21	119	3					143	143
FIRE CONTROL	2	4						6	6
FIRE CONTROL RELATED FLIGHT	5	4						9	9
AERIAL MAPPING/PHOTOGRAPHY	4	2	2 .					8	7
AERIAL ADVERTISING	3	3						6	6
POWER AND PIPELINE PATROL	4	5						9	9
FISH SPOTTING		2						2	2
AIR TAXI-PASSENGER OPERATIONS	31	67		3				101	101
AIR TAXI-CARGO OPERATIONS	21	25						46	46
CONSTRUCTION WORK	2	1						3	3
SCHEDULED PASSENGER SERVICE									
SCHEDULED CARGO SERVICE									
INTRA-STATE CHARTER PASSG.		1						1	1
INTRA-STATE CHARTER CARGO.									
MILITARY CONTRACT-PASSENGER		1						1	1
MILITARY CONTRACT-CARGO									
CHARTER CARGO-DOMESTIC		5						5	5
CHARTER PASSG-DOMESTIC	1	6						7	7
CHARTER-CARGO-INTERNATIONAL	.1	1						2	2
CHARTER-PASSG-INTERNATIONAL									
OTHER	3	7						10	10

ANALYTIC TABLE

•		oted a	PHI.	. ي.		
KIND OF FLYING	DEST	ROTED ST	WINC	40kg	RECORDS A	CCIDENTS
UNKNOWN/NOT REPORTED		1			1	1
MISCELLANEOUS						
EXPERIMENTATION		1			1	1
TEST.	16	21	1		38	38
DEMONSTRATION	5	10			. 15	15
FERRY	16	50			66	66
SEARCH AND RESCUE	3	7			10	10
AIR SHOW/AIR RACING	4	5	1	1	11	10
PARACHUTE JUMP	2	11	1		14	14
PARACHUTE JUMP-AIR SHOW	. 1				1	1
TOWING GLIDERS		4			4	4
SEEDING CLOUDS						
HUNT ING	4	4			8	8
POLICE PATROL	4	11			15	15
HIGHWAY TRAFFIC ADVISORY		3			3	3
ALL OTHER PUBLIC FLYING	5	12			17	17
DTHER	2	12			14	14
UNKNOWN/NOT REPORTED	5	5			10	10
RECORDS	1024	3225	29	19	4297	
ACCIDENTS	1019	3206	29	19		4256

INJURIES, ACCIDENTS GENERAL AVIATION (ALL OPERATIONS)-1972

INJURIES

		INJUNIES								
•	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL			
PILOT	638	346	552	2760	1		4297			
COPILOT	. 47	8	7	82			144			
DUAL STUDENT . CHECK PILOT	. 21	20	25 2	165 5			231 7			
FLIGHT ENGINEER NAVIGATOR	1	1		1			3			
CABIN ATTENDANT	1			7			8			
EXTRA CREW	8	5	7	18			38			
PASSENGERS	667	286	523	2589			4065			
TOTAL	1383	666	1116	5627	1	A BO AR D	8793			
		3								
* OTHER AIRCRAFT	6			2 7			8			
OTHER GROUND	37	17	36	7			97			
GRAND TOTAL	1426	683	1152	5636	1		8898			

INVOLVES 4256 TOTAL ACCIDENTS INVOLVES 695 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.

The American Committee of the Committee

(INCLUDES ALL AIRCRAFT RECORDS INVOLVED IN COLLISIONS)

INJURIES, ACCIDENTS INSTRUCTIONAL(DUAL)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
	PILOT	.25	15	35	155			230
	COPILOT DUAL STUDENT CHECK PILOT FLIGHT ENGINEER NAVIGATOR	21	20	24 1	157			222 1
	CABIN ATTENDANT EXTRA CREW PASSENGERS	7	2	7 ·	31			47
	TOTAL	53	37	67	345		A BO AR D	502
- 55 -	* OTHER AIRCRAFT OTHER GROUND	7 2	1	1 3	11			20 5
	GRAND TOTAL	62	38	71	356			527

INVOLVES 230 TOTAL ACCIDENTS INVOLVES 31 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.

INSTRUCTIONAL(SOLO-SUPERVISED) INJURIES, ACCIDENTS

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL	
	PILOT COPILOT DUAL STUDENT CHECK PILOT FLIGHT ENGINEER NAVIGATOR CABIN ATTENDANT EXTRA CREW	9	14	. 35	207			265	
	PASSENGERS			1	1			2	
	TOTAL	9	14	36	208		A BO AR D	267	
- 56 -	* OTHER AIRCRAFT OTHER GROUND			*.	8			8	
	GRAND TOTAL	9	14	36	216			275	

INVOLVES 265 TOTAL ACCIDENTS
INVOLVES 9 FATAL ACCIDENTS

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

INJURIES, ACCIDENTS INSTRUCTIONAL(TRAINING)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
	PILOT COPILOT	14	11	22	112			159
	DUAL STUDENT CHECK PILOT FLIGHT ENGINEER NAVIGATOR CABIN ATTENDANT				2			2
	EXTRA CREW Passengers			5	13			18
	TOTAL	14	11	27	127		A BO AR D	179
- 57 -	* OTHER AIRCRAFT OTHER GROUND	1	1	1	5			7
	GRAND TOTAL	15	12	28	132			187

INVOLVES 158 TOTAL ACCIDENTS INVOLVES 15 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 (CHECK)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL	
	PILOT		1	2	9			12	•
	COPILOT DUAL STUDENT				5			1 5 6	
	CHECK PILOT FLIGHT ENGINEER NAVIGATOR CABIN ATTENDANT			1	5			6	
	EXTRA CREW PASSENGERS		1		3			4	
	TOTAL		3	3	22		A BO AR D	28	
- 58 -	* OTHER AIRCRAFT OTHER GROUND				. 2			2	
	GRAND TOTAL		3	3	24			30	

INVOLVES 12 TOTAL ACCIDENTS INVOLVES FATAL ACCIDENTS

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

INJURIES, ACCIDENTS NONCOMMERCIAL(PLEASURE/PERSONAL TRANSPORTATION)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL	
	PILOT	357	176	285	1402			2220	
	COPILOT DUAL STUDENT CHECK PILOT FLIGHT ENGINEER NAVIGATOR	22	6	1	13			42	
	CABIN ATTENDANT								
	EXTRA CREW PASSENGERS	2 435	211	376	1767			2789	
	TOTAL	816	393	662	3184		A BO AR D	5055	
59	* OTHER AIRCRAFT	7	2		18			27	
•	OTHER GROUND	4	6	11	4			25	
				.70					
	GRAND TOTAL	827	401	673	3206			5107	

INVOLVES 2208 TOTAL ACCIDENTS
INVOLVES 392 FATAL ACCIDENTS

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

INJURIES, ACCIDENTS NONCOMMERCIAL (PRACTICE)

INJURIES

	•	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
	PILOT	12	8	17	56			93
	COPILOT	2			2			4
	DUAL STUDENT CHECK PILOT FLIGHT ENGINEER NAVIGATOR			1	1			2
	CABIN ATTENDANT							
	EXTRA CREW	'n	2	5	20			28
	PASSENGERS	1	2	,	20			. 20
	TOTAL	15	10	23	79		ABOARD	127
- 60 ,	* OTHER AIRCRAFT OTHER GROUND				3			3
	GRAND TOTAL	15	10	23	82			130

INVOLVES 93 TOTAL ACCIDENTS INVOLVES 12 FATAL ACCIDENTS

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

INJURIES, ACCIDENTS NONCOMMERCIAL(BUSINESS-NONPROFESSIONAL PILOT)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
	PILOT COPILOT DUAL STUDENT CHECK PILOT FLIGHT ENGINEER	86 7	27	39 2	259 7	1	-	412 16
	NAVIGATOR CABIN ATTENDANT EXTRA CREW PASSENGERS	1 .80	19	1 31	2 218			2 2 348
	TOTAL	174	46	73	486	1	ABOARD	780
- 61 - ·	* OTHER AIRCRAFT OTHER GROUND	1 3.,	4	4	3			8 8
	GRAND TOTAL	178	50	78	489	1		796

INVOLVES 411 TOTAL ACCIDENTS
INVOLVES 92 FATAL ACCIDENTS

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

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

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
	PILOT COPILOT DUAL STUDENT CHECK PILOT FLIGHT ENGINEER	12 6	2	3	67 17			84 25
	NAVIGATOR CABIN ATTENDANT EXTRA CREW PASSENGERS	1 27	6	14	1 1 158			2 1 205
	TOTAL	46	8	19	244		ABOARD	317
62 1	* OTHER AIRCRAFT OTHER GROUND			1	3			3 1
	GRAND TOTAL	46	. 8	20	247			321

INVOLVES 84 TOTAL ACCIDENTS
INVOLVES 12 FATAL ACCIDENTS

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

INJURIES, ACCIDENTS NONCOMMERCIAL (AERIAL SURVEY)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
	PILOT COPILOT DUAL STUDENT CHECK PILOT FLIGHT ENGINEER NAVIGATOR CABIN ATTENDANT	1	1		6			9 1
	EXTRA CREW Passengers		1	3	12			16
	TOTAL	1	2	4	19		A BO ARD	26
- 63 -	OTHER AIRCRAFT OTHER GROUND							
	GRAND TOTAL	1	2	4	19			26

INVOLVES 9 TOTAL ACCIDENTS
INVOLVES 1 FATAL ACCIDENTS

INJURIES, ACCIDENTS NONCOMMERCIAL (OTHER)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL	
	PILOT COPILOT DUAL STUDENT CHECK PILOT FLIGHT ENGINEER NAVIGATOR CABIN ATTENDANT	2			6			8	
	EXTRA CREW PASSENGERS	2			2			4	
	TOTAL	4			8		A BO AR D	12	
- 64 -	OTHER AIRCRAFT OTHER GROUND	3							
	GRAND TOTAL	4			8			12	

INVOLVES INVOLVES

8 TOTAL ACCIDENTS 2 FATAL ACCIDENTS

INJURIES, ACCIDENTS COMMERCIAL (AERIAL APPLICATION-CROP CONTROL)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL		
	PILOT COPILOT DUAL STUDENT CHECK PILOT FLIGHT ENGINEER NAVIGATOR CABIN ATTENDANT	29	43	28	118			218		
	EXTRA CREW PASSENGERS	1						1.		
	TOTAL	30	43	28	118		A BO AR D	219		
1 65 -	OTHER AIRCRAFT OTHER GROUND									
	GRAND TOTAL	30	43	28	118			219		

INVOLVES 218 TOTAL ACCIDENTS INVOLVES 29 FATAL ACCIDENTS

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

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL		
	PILOT COPILOT DUAL STUDENT CHECK PILOT FLIGHT ENGINEER NAVIGATOR	5	11	22	105		·	143		
	CABIN ATTENDANT EXTRA CREW									
	PASSENGERS				2			2		
	TOTAL ,	5	11	. 22	107		ABOARD	145		
1 66 1	* OTHER AIRCRAFT OTHER GROUND				3			3		
	GRAND TOTAL	5	11	22	111			149		

INVOLVES 143 TOTAL ACCIDENTS
INVOLVES 5 FATAL ACCIDENTS

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

INJURIES, ACCIDENTS COMMERCIAL (FIRE CONTROL)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL	
	PILOT COPILOT DUAL STUDENT CHECK PILOT FLIGHT ENGINEER NAVIGATOR CABIN ATTENDANT	1		1	4			6	
	EXTRA CREW Passengers			13	5			18	
	TOTAL	2		14	9		A BO AR D	25	
- 67 -	OTHER AIRCRAFT OTHER GROUND								
	GRAND TOTAL	2		14	9			25	

INVOLVES 6 TOTAL ACCIDENTS INVOLVES 1 FATAL ACCIDENTS

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

INJURIES

	•	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL	
	PILOT	3			6			9	
	COPILOT DUAL STUDENT CHECK PILOT FLIGHT ENGINEER NAVIGATOR CABIN ATTENDANT			•	1			1	
	EXTRA CREW	1	1					2	
	PASSENGERS	5	4	1	8		4.00.40.0	18	
	TOTAL	9	5	1	15		A BO AR D	30	
1 68 1	OTHER AIRCRAFT OTHER GROUND								
	GRAND TOTAL	9	5	1	15			30	

INVOLVES INVOLVES

9 TOTAL ACCIDENTS

3 FATAL ACCIDENTS

INJURIES, ACCIDENTS COMMERCIAL (AERIAL MAPPING/PHOTOGRAPHY)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
	PILOT COPILOT DUAL STUDENT CHECK PILOT FLIGHT ENGINEER NAVIGATOR	1	1		6		-	8
	CABIN ATTENDANT EXTRA CREW PASSENGERS	. 1	1	1	2 5			4 6
	TOTAL	2	2	1	13		A BO ARD	18
. 69 .	OTHER AIRCRAFT OTHER GROUND	1						1
	GRAND TOTAL	3	2	1	13			19

INVOLVES INVOLVES

7 TOTAL ACCIDENTS 2 FATAL ACCIDENTS

INJURIES, ACCIDENTS COMMERCIAL (AERIAL ADVERTISING)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
	PILOT COPILOT DUAL STUDENT CHECK PILOT FLIGHT ENGINEER NAVIGATOR CABIN ATTENDANT EXTRA CREW PASSENGERS		1	1	4		·	6
	TOTAL		1	1	4		A BO AR D	6
- 70 -	OTHER AIRCRAFT OTHER GROUND							
	GRAND TOTAL		1	1	4			6

INVOLVES 6 TOTAL ACCIDENTS
INVOLVES FATAL ACCIDENTS

INJURIES, ACCIDENTS COMMERCIAL (POWER AND PIPELINE PATROL)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
	PILOT COPILOT DUAL STUDENT CHECK PILOT FLIGHT ENGINEER NAVIGATOR CABIN ATTENDANT	2	3		4			9
	EXTRA CREW PASSENGERS		3		1			1 4
		2 - T						
	TOTAL	2	6	•	6		A BO ARD	14
- 71 -	OTHER AIRCRAFT OTHER GROUND							
	GRAND TOTAL	2	6		6		,	14

INVOLVES INVOLVES

9 TOTAL ACCIDENTS 2 FATAL ACCIDENTS

INJURIES, ACCIDENTS COMMERCIAL (FISH SPOTTING)

INJUR IES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
	PILOT COPILOT DUAL STUDENT CHECK PILOT FLIGHT ENGINEER NAVIGATOR CABIN ATTENDANT EXTRA CREW PASSENGERS				2			2
	TOTAL				2		A BO ARD	2
- 72 -	OTHER AIRCRAFT OTHER GROUND							
	GRAND TOTAL				2			2

INVOLVES INVOLVES

2 TOTAL ACCIDENTS FATAL ACCIDENTS

INJURIES.ACCIDENTS COMMERCIAL(AIR TAXI-PASSENGER)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL	
PILOT	•ਰ‡ਰ** '	22	3	9	67			101	
COPILOT DUAL STUDE CHECK PILE FLIGHT END	TC	2		2	11			15	
NAVIGATOR CABIN ATTI	ENDANT				3			3	
EXTRA CREA	Н	_		2				2	
PASSENGERS	S	69	21	36	235			361	
TOTAL	L	93	24	49	316		A BO ARD	482	
* OTHER AIR	CRAFT	5			4			9	
OTHER GROU	UND	1						1	
GRAND TOTAL		99	24	49	320			492	

INVOLVES 101 TOTAL ACCIDENTS INVOLVES 26 FATAL ACCIDENTS

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

INJURIES, ACCIDENTS COMMERCIAL(AIR TAXI-CARGO)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
	FLIGHT ENGINEER NAVIGATOR	15 3	5	3	23 12			46 15
	CABIN ATTENDANT EXTRA CREW PASSENGERS	1 3	3 3	1	3			7 10
	TOTAL	22	. 11	4	41		ABO AR D	78
- 7h	* OTHER AIRCRAFT OTHER GROUND	\$ **2			2			2
	GRAND TOTAL	22	11	4	43			80

INVOLVES 46 TOTAL ACCIDENTS
INVOLVES 16 FATAL ACCIDENTS

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

INJURIES, ACCIDENTS COMMERCIAL (CONSTRUCTION-ROTORCRAFT)

INJURIES

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

INVOLVES 3

3 TOTAL ACCIDENTS 2 FATAL ACCIDENTS

i. "

INJURIES, ACCIDENTS COMMERCIAL (OTHER)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL	
	PILOT COPILOT DUAL STUDENT CHECK PILOT	4	2	4	17			27	
	FLIGHT ENGINEER NAVIGATOR CABIN ATTENDANT	. 1			1		I	2	
	EXTRA CREW PASSENGERS	6		7	20			33	
	TOTAL	12	2	. 11	42		ABOARD	67	
- 76 -	OTHER AIRCRAFT OTHER GROUND								
	GRAND TOTAL	12	2	11	42			67	

INVOLVES 27 TOTAL ACCIDENTS INVOLVES 5 FATAL ACCIDENTS

INJURIES, ACCIDENTS MISCELLANEOUS(EXPERIMENTATION)

INJURIES

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

INVOLVES INVOLVES 1 TOTAL ACCIDENTS FATAL ACCIDENTS

INJURIES, ACCIDENTS MISCELLANEOUS(TEST)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
	PILOT COPILOT DUAL STUDENT	6	8	6	18			38
	CHECK PILOT FLIGHT ENGINEER NAVIGATOR CABIN ATTENDANT		1					1
	EXTRA CREW PASSENGERS	1	1	2	2 2	•		5 4
	TOTAL .	8	10	8	22		ABOARD	48
- 78 -	OTHER AIRCRAFT OTHER GROUND							
	GRAND TOTAL	8	10	8	22			48

INVOLVES 38 TOTAL ACCIDENTS 8 FATAL ACCIDENTS

INJURIES, ACCIDENTS MISCELLANEOUS (DEMONSTRATION)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
	PILOT	3		5	7			15
	COPILOT DUAL STUDENT CHECK PILOT FLIGHT ENGINEER NAVIGATOR CABIN ATTENDANT				4			5
	EXTRA CREW PASSENGERS	7		7	6			20
·	TOTAL	11		12	17		A BO AR D	40
- 79 -	◆ OTHER AIRCRAFT OTHER GROUND	1			6 2			6 3
	GRAND TOTAL	12		12	25			49

INVOLVES 15 TOTAL ACCIDENTS INVOLVES 4 FATAL ACCIDENTS

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

INJURIES, ACCIDENTS MISCELLANEOUS (FERRY)

INJURIES

	• •	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
	PILOT COPILOT DUAL STUDENT CHECK PILOT FLIGHT ENGINEER NAVIGATOR	10	5	9	42 6			66
	CABIN ATTENDANT EXTRA CREW PASSENGERS	3	1	4	3 12			3 20
	TOTAL	14	6	13	63		ABOARD	96
1 80 1	* OTHER AIRCRAFT OTHER GROUND	3	2					5 1
	GRAND TOTAL	18	8	13	63			102

INVOLVES 66 TOTAL ACCIDENTS INVOLVES 12 FATAL ACCIDENTS

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

INJURIES, ACCIDENTS MISCELLANEOUS(SEARCH AND RESCUE)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
	PILOT COPILOT DUAL STUDENT CHECK PILOT FLIGHT ENGINEER NAVIGATOR CABIN ATTENDANT EXTRA CREW	2		4	4			10
	PASSENGERS	1	5	1	4			11
	TOTAL	3	. 5	5	8		ABO AR D	21
- 81 -	OTHER AIRCRAFT OTHER GROUND							
	GRAND TOTAL	3	5	5	8			21

INVOLVES 10 TOTAL ACCIDENTS 1NVOLVES 2 FATAL ACCIDENTS

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INJURIES, ACCIDENTS MISCELLANEOUS(AIR SHOW/RACING)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
	PILOT COPILOT DUAL STUDENT CHECK PILOT FLIGHT ENGINEER NAVIGATOR	2	4	3	2			11 1
	CABIN ATTENDANT EXTRA CREW PASSENGERS	1		•	3			1 3
	TOTAL	3	4	3	6		A BO AR D	16
1 82 1	OTHER AIRCRAFT OTHER GROUND	22	7	20				49
	GRAND TOTAL	25	11	23	6			65

INVOLVES 10 TOTAL ACCIDENTS INVOLVES 4 FATAL ACCIDENTS

INJURIES, ACCIDENTS MISCELLA NEOUS (PARACHUTE .JUMP-SPORTING)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL	
	PILOT COPILOT DUAL STUDENT CHECK PILOT FLIGHT ENGINEER NAVIGATOR CABIN ATTENDANT			4	10			14	
	EXTRA CREW PASSENGERS		2	2	27			31	
	TOTAL		2	6	37		ABOARD	45	
83	OTHER AIRCRAFT OTHER GROUND								
	GRAND TOTAL		2	6	37			45	

INVOLVES 14 TOTAL ACCIDENTS FATAL ACCIDENTS

INJURIES, ACCIDENTS MISCELLA NEGUS (PARACHUTE JUMP-AIR SHOW)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
	PILOT COPILOT DUAL STUDENT CHECK PILOT FLIGHT ENGINEER NAVIGATOR CABIN ATTENDANT	1						1
	EXTRA CREW PASSENGERS	4						4
	TOTAL	5		•			ABOARD	5
- 84 -	OTHER AIRCRAFT OTHER GROUND	2. t						
	GRAND TOTAL	5						5

INVOLVES 1 TOTAL ACCIDENTS INVOLVES 1 FATAL ACCIDENTS

INJURIES, ACCIDENTS MISCELLANEOUS (TOWING GLIDERS)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
	PILOT COPILOT DUAL STUDENT CHECK PILOT FLIGHT ENGINEER NAVIGATOR CABIN ATTENDANT EXTRA CREW PASSENGERS			2	2			4
	TOTAL			2	2		A BO AR D	4
1 20 31	OTHER AIRCRAFT OTHER GROUND							
	GRAND TOTAL			2	2			4

INVOLVES INVOLVES

4 TOTAL ACCIDENTS FATAL ACCIDENTS

INJURIES, ACCIDENTS MISCELLANEOUS (SEEDING CLOUDS)

INJURIES

FATAL SERIOUS MINOR NONE UNKNOWN TOTAL

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

TOTAL

ABOARD

- 86

OTHER AIRCRAFT OTHER GROUND

GRAND TOTAL

INVOLVES INVOLVES

TOTAL ACCIDENTS FATAL ACCIDENTS

INJURIES, ACCIDENTS MISCELLANEOUS (HUNTING)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
	PILOT COPILOT DUAL STUDENT CHECK PILOT FLIGHT ENGINEER NAVIGATOR CABIN ATTENDANT	2		1	5			8
	EXTRA CREW PASSENGERS	3			3			7
	TOTAL	5	1	1	8		A BO AR D	15
î	OTHER AIRCRAFT OTHER GROUND							
	GRAND TOTAL	5	1	1	8			15

INVOLVES 8 TOTAL ACCIDENTS INVOLVES 2 FATAL ACCIDENTS

1,

INJURIES, ACCIDENTS MISCELLANEOUS (POLICE PATROL INCLUDES TRAFFIC ADVISORY)

INJURIES

					- 		
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT			. 6	9			15
COPILOT DUAL STUDENT CHECK PILOT				1			1
FLIGHT ENGINEER NAVIGATOR CABIN ATTENDANT							
EXTRA CREW			2	3			5
PASSENGERS		1	2 2	3 7			10
TOTAL		1	10	20		A BÔ AR D	31
OTHER AIRCRAFT OTHER GROUND							
GRAND TOTAL		1	10	20	·		31

INVOLVES 15 TOTAL ACCIDENTS FATAL ACCIDENTS

•

INJURIES, ACCIDENTS MISCELLANEOUS (HIGHWAY TRAFFIC ADVISORY NON POLICE)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL	
	PILOT COPILOT DUAL STUDENT CHECK PILOT FLIGHT ENGINEER NAVIGATOR CABIN ATTENDANT				3			3	
	EXTRA CREW PASSENGERS			· 1	1			2	
	TOTAL			1	4		A BO AR D	5	
- 69 -	OTHER AIRCRAFT OTHER GROUND								
	GRAND TOTAL			1	4			5	

INVOLVES 3 TOTAL ACCIDENTS FATAL ACCIDENTS

INJURIES, ACCIDENTS MISCELLANFOUS (OTHER)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
	PILOT COPILOT DUAL STUDENT CHECK PILOT FLIGHT ENGINEER NAVIGATOR	11	4	5	21			41
	CABIN ATTENDANT EXTRA CREW PASSENGERS	12	. 2	5	1 20			1 39
	TOTAL	23	6	10	43		A BÓ AR D	82
- %	OTHER AIRCRAFT OTHER GROUND							
	GRAND TOTAL	23	6	10	43			82
					,2			2

INVOLVES 41 TOTAL ACCIDENTS INVOLVES 12 FATAL ACCIDENTS

SELECTED ACCIDENT DATA

All Operations

1972

		•	Anni	dont Donorda	
			Total	dent Records	2407
			Total	<u>F</u> 3	atal
PILOT	TOTAL T	IME			
0-	25 H	ours	180		9
26 -	•	ours	236		25
51 -	,	ours	339		52
101-		ours	853		133
301-	_	ours	389	·	71
501 -		ours	516		86
1001-		ours	831		141
3001-		ours	344		54
5001 -		ours	222		44
•		ours	104		17
		ours	196		35
		eported	87		39
	,	-			
PILOT	TIME IN	TYPE AIRCRAFT			
_			1	•	
5 -		ess Hours	254		29
6-	25.	Hours	799		94 87
26-	50.	Hours	604		87
51 -	100	Hours	595 567		84
101-	300	Hours	767		101
301-	500	Hours	334		50.
501-	1000	Hours	3 3 0		40
1001-	2000	Hours	193		27
2001-	3000	Hours	78 96		13
Over-	3000	Hours	86		9
Unknow	n/not r	eported	257		172

PILOT AGE BY INJURY INDEX ALL OPERATIONS ALL OVER ONE

		48	٠ چ٠	4,	40	Jut.	DECORDE	ACCIDENTS
PILOT	AGE						KECOKUS	ACCIDENTS
16			1	2	1		4	4
17		3	3	2	19		27	27
18		4	2	6	17		29	29
19		9	5	6	21		41	41
20		, 5	8	9	34		56	5.6
21		7	6	4	46		63	63
22		14	11	14	49		на	ឧឧ
23		8	5	13	56		82	82
24		15	14	15	71		115	115
25		21	19	17	73		130	130
26		17	13	20	87		137	. 137
27		24	8	10	65		107	107
28		16	12	16	96		140	140
29		25	12	13	51		141	141
30		19	11	19	85		134	134
31		22	6	15	74		117	117
32		16	17	19	75		127	127
33		28	11	18	81		. 138	138
34		2.2	7	14	70		113	113
35		21	12	14	77		174	1 24
36		19	8	16	71		114	114
37		22	17	17	68		124	124
38		21	8	10	74		113	113
39		20	11	16	70	1	118	118
40		21	6	17	86		130	130
41		18	20	18	93		149	149
42		18	13	15	71		117	117
43		23	11	20	66		120	120
44		21	10	20	84		135	135
45		16	7	18	59		100	100
46		23	11	20	68		122	122
47		20	7	19	53		99	99
48		16	14	21	56		107	107 107
4 9 50		17 20	8 5	11 9	71 62		96	96
		13	1	15	51		80	80
51		13	1	1.3	,,		6.0	017

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PILOT AGE		FATR	SEPI	WINC	ONY	Juraca,		
52				4.	٣.	2		ACCIDENTS
53		13	8	12	38		71	71
54		10	4	14	41		69	69
55		12	9	5	37		63	63
		13	2	5	36		56	56
56		13	3	10	20		. 46	46
57		4	5	4	20		33	33
58 59		2	3	5	16		26	26
		6	3	7	17		33	33
60		9	5	3	. 13		30	30
61		2		3	15		20	20
62		5	2	3	6		16	16
63 64		2		2	7		11	11
		2	1	3	6		12	12
65				1	6		7	7
66		3	1		1		5	5
67		ì	1	2	2		6	6
68		2		1	3		6	6
69		1			2		. 3	3
70		1	1		2		4	4 .
71		1			1		2	2
72					3		3	3
73				1			1	1
74					1		1	1
75				1	2		3	3
76 77					1		1	1
78					1		1	1
UNKNOWN			_					
ONKNOWN	,		2		22		24	. 24
RECORDS	,	706	390	590 2	2610	1	4297	
ACCIDENTS	i_{I}	695	386	585 2	2589	1		4256

CONDITIONS OF LIGHT BY INJURY INDEX ALL OPERATIONS

	4ª	SE.	4,	40	JEFFE	RECORDS	ACCIDENTS
DAWN			3.	22		25	24
DAYLIGHT	490	340	534	2306	1	3671	3634
DUSK (TWILIGHT)	25	9	12	87		1 33	132
NIGHT (DARK)	165	35	38	160		398	396
NIGHT (MOONLIGHT-BRIGHT)	7	5	3	27		42	42
UNKNOWN/NOT REPORTED	19	1		8		28	28
RECORDS	706	390	590	2610	1	4297	
ACC I DENT S	695	386	585	2589	1		4256
PERCENT							

ANALYTIC TABLE

PILOT CERTIFICATE BY INJURY INDEX ALL OPERATIONS

	e pr	AL SER	WIN	AON,	JEHKENOWIE.		RECORDS	ACCIDENTS
STUDENT	58	- 36	75	390			559	55 R
PRIVATE	323	172	269	1099			1863	1861
COMMERCIAL	172	107	133	609	ı		1022	1021
AIRLINE TRANSPORT	33	5	16	75			129	128
PRIVATE W/FLIGHT INSTRUCTOR				4			4	4
COME WITH FLT INSTRUCTOR	87	58	82	339			566	565
ATR W/FLIGHT INSTRUCTOR	24	ь	1.2	73			115	115
OTHER				1			1	1
NONE	8	4	2	8			2.2	22
UNKNOWN/NOT REPORTED	1	2	1	12			16	16
RECORDS	706	390	590	2610	1		4297	
ACC IDENTS	695	386	5.85	2589 PAGE	1 - 94 -			4256

STATE OF OCCURRENCE BY INJURY INDEX

	¢ R ^{TR}	SERI	MIN	40H	RECORDS	ACCIDENTS
ALARAMA	15	7	5	49	76	76
ALASKA	22	14	15	140	191	189
ARIZONA	14	7	12	65	98	98
ARKANSAS	11	9	11	42	73	73
CALTFORNIA	84	48	90	299	511	504
COLORADO	15	10	7	55	87	87
CONNECTICUT	4	5	3	17	29	29
DELAWARE	2			4	6	6
FLORINA	27	17	54	146	. 219	215
GEOPG I &	25	16	18	80	139	137
IJAKAH	3	5	4	9	18	18
IDAHO	7	6	3	24	40	40
ILLINOIS	16	11	15	96	138	136
INDIANA .	13	9	16	50	88	86
10.4∀	7	3	6	62	78	76
KANSAS	13	6	12	48	79	78
KENTUCKY	9	9	9	25	52	51
LUDISIANA	14	. 6	11	40	71	70
MAINF	3	4	9	19	35	35
MARYL AND	7	5	8	15	35	35
MASSACHUSETTS	5	8	8	35	56	55
MICHIGAN	20	10	22	97	149	147
MINNFS0TA	11	4	7	60	82	81
MISSISSIPPI	12	5	5	26	48	48
MISSOUFI	14	6	11	47	78	77
MONTANA	5		P	33	45	45
NEBRASKA	8	3	4	49	64	64
NEVADA	6	4	9	34	53	53
NEM HAMPSHIRE	4	2	4	18	28	27
NEW JEPSEY	5	1	11	45	62	61
NEW MEXICO	14	. 7	8	40	69	69
NEW YORK	17	16	25	82	. 140	140
NORTH CAPOLINA	11	5	13	54	83	83
NORTH FAKOTA	3	4		15	22	22
OHIO	21	9	11	77	. 118	117
UKLAHOMA	8	3	9	35	55	55
OREGON	19	9	13	35	76	. 75

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		~ .	OUS	۹.	, &	JAKA	4/4			
STATE OF OCCURRENCE	4P	' 5EP	CAL	04	٠,	NA.			RECORDS	ACCIDENTS
PENNSYL VAN I A	20.	6	14	58					98	98
RHODE ISLAND		2	1	9					12	12
SOUTH CAROLINA	7	2	10	38					57	57
SOUTH DAKOTA	2	5	4	16					27	27
TENNFSSEE.	17	7	4	27					55	55
TEXAS	45	27	38	146		1			257	255
UTAH	11	5	7	15					38	38
VERMONT	4		2	14					20	19
VIRGINIA	13	7	11	29					60	58
WASHINGTON	19	13	18	57					107	105
WEST VIRGINTA	7	2	4	15					28	28
WISCONSIN	10	7	10	46					73	72
MADWING	9.	3	6	50					38	38
DISTRICT OF COLUMNIA			1						ı	1
UNKNOWN/NOT REPORTED	20								20	20
PUEPTO RICO	3	1	1	5					7	7
VIRGIN ISLANDS				1					1	1
THER (U.S.TERRITORIES AND POSSESSIONS)		2		1					3	3
CANADA	5	2	1	5				•	13	13
MEXICO .	4	4	5	21					34	34
CENTRAL AMERICA			-1	1					2	2
SOUTH AMERICA				3					1	1
EUROPE			1	1					2	2
ASIA	6	2	5	11					21	21
AFRICA	1								1	1
OTHER (FOREIGN COUNTRIES)	6	3	4	9	es :				22	22
PACIFIC OCEAN NOPTH LATITUDES			1						1	1
PACIFIC OCEAN SOUTH LATITUDES	1								. 1	1
ATLANTIC OCEAN NORTH LAT.	2		3	1					6	6
RECORDS	70/	390	590	2610		1			L297	
ACCIDENTS	706 695	386		2589		1			4271	4256
nec (20 H13	073	300	303	2307		•				цало

STATE OF OCCURRENCE/AIRCRAFT DAMAGE

STA	TE OF OCCURRENCE	065	ROTED	STANTIA	NOW.	ı				RECORDS	ACCIDENTS
	AL ARAMA	21	55							76	76
	ALASKA	28	161		2					191	189
	4RT70NA	24	74							98	98
	ARKANSAS	12	60	3						73	73
	CAL IFORNI A	134	371	3	3					511	504
	COLOPADO	24	63							87	87
	CONNECTION	10	19							29	29
	NELAWARE	2	4							6	6
	FLOPIDA	39	176	1	3					219	215
	GEORGIA	38	98	ì	2		•			139	137
	HAWATI	5	13							18	18
	IDAHO	11	29							40	40
	ILLINOIS	19	117	5						138	136
	INDIANA	25	62	1						88	86
	†O₩A	15	64	2						78	76
	KANSAS	20	58	1						79	78
	KENTUCKY	12	39	1						52	51
	LOUISIANA	17	52	2						71	70
	MATNE	7	28							35	. 35
	MARYLAND	12	23							35	35
	MASSACHUSETTS	11	44	1						56	55
	MICHTGAN	27	120	1	1					149	147
	MINNESOTA	10	71	1						82	. 81
	MISSISSIPPI	2.2	26							48	48
	MISSOURI	19	59							78	77
	MONTANA	7	38							45	45
	NEPPASKA	13	51							64	64
	NEVADA	; 9	44							53	53
	NEW HAMPSHIRE	6	22							28	27
	NEW JERSEY	6	56							62	61
	NEW MEXICO	22	-47							69	69
	NEW YORK	24	112		4					140	140
	NORTH CAROLINA	13	69	1						83	83
	NORTH DAKOTA	. 5	17							22	22
	онто	31	86	1						118	117
	OKLAHOMA	11	43		1					55	55
	DREGON	88	46	. 2						76	75

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		ROTED SUBS	PITIA	٠ .	•	
STATE OF OCCURRENCE	Sec.	NR JOS	MIN	HOHE	RECORDS	ACCIDENTS
PENNSYLVANIA	29	68	•	1	98	98
RHODE ISLAND	1	11			. 12	12
SOUTH CAROLINA	9	48			57	57
SOUTH DAKOTA	4	23			27	27
TENNFSSEE	23	32			55	55
TEXAS	67	185	3	8	257	255
UTAH	14	24			38	38
VERMONT	5	18			20	19
VIRGINIA	50	39	1		60	58
WASHINGTON	28	78	1		107	105
WEST VIRGINIA	. 8	20			28	28
WISCONSIN	13	60			73	72
MAOWING	11	27			38	38
DISTRICT OF COLUMBIA		1			1	1
UNKNOWN/NOT REPORTED	19	1			20	20
PUERTO RICO	מ	2			7	7
VIRGIN ISLANDS		1			. 1	1
OTHER (U.S.TERRITORIES AND POSSESSIONS)	2	1			3	3
CANADA	7	6			13	13
MEXICO	5	28	1		34	34
CENTRAL AMERICA		2			5	2
SOUTH AMERICA		1			1	1
EUROPE		2			5	2
ASIA	4	16	1		21	21
AFRICA		1			1	1
OTHER (FOREIGN COUNTRIES)	10	12			22	22
PACIFIC OCEAN NORTH LATITUDES	1				1	1
PACIFIC OCEAN SOUTH LATITUDES	1				1	1
ATLANTIC OCFAN NORTH LAT.	5	1			. 6	6
				,		
RECORDS	1026	3225	29	19	1007	
ACCIDENTS		3206	29	19	4297	10%
400 TO: 41 3	1019	.7200	67	17		F5229

MONTH OF OCCURRENCE BY INJURY INDEX ALL OPERATIONS INJURY INDEX

	•		YINDEX	42		
	éb	TA'SER'	WHO HOHE	JHE HOW THE	RECORDS	ACCIDENTS
01	47	22	32 199		300	296
02	45	17	38 200		300	298
03 .	63	36	41 202		342	340
04	51	30	51 220		352	351
0.5	65	36	76 242 .		419	417
06	75	48	64 258	1	446	44 0
0.7	65	53	68 317		503	499
08	6.8	49	67 287		471	464
09	51	42	57 225		375	371
10	46	17	33 177		273	270
11	66	21	34 144		265	260
12	64	19	29 139		251	250
RECORDS	. 706	390	590 2610	1	4297	
ACCIDENTS	695	386	585 2589	1		4256

ANALYTIC TABLE

TYPE OF POWER BY INJURY INDEX ALL OPERATIONS

	FATASERIOUS NONE JHENOWN	RECORDS	ACC IDENTS
RECIPROCATING ENGINE	667 376 564 2524 1	4132	4093
TURBOJET ENGINE	4 1 1 10	16	16
TURBOPROP ENGINE	12 1 5 21	39	39
TURBOFAN ENGINE			
NONE	7 8 8 26	49	. 49
TURBOSHAFT	16 4 17 29	61	61
RECORDS	706 390 590 2610 1	4297	
ACCIDENTS	695 386 585 2589 1		4256

TYPE OF AIRCRAFT BY INJURY INDEX ALL OPERATIONS

	FATA SERIOUS AONE UNKNOWN	RDS	ACC 1DENTS
	663 356 536 2445 1	001	3961
FIXED-WING		223	223
ROTORCRAFT	31 22 43 127	50	50
GL IDER	7 7 8 28		
BALLOON	1 .	1	1
BLIMP			
DIRIGIBLE			
ROCKET			
CONVERT PLANE		22	22
GYROPLANE	5 4 3 10	22	22
OTHER			
RECORDS	706 390 590 2610 1	4297	
	695 386 585 2589 1		4256
ACCIDENTS	0,3 2,00 2-1 2-1		

ANALYTIC TABLE

TYPE OF AIRCRAFT BY AIRCRAFT DAMAGE ALL OPERATIONS

			,		
DESTROYED SUBSI	MINO	HOHE		RECORDS	ACCIDENTS
949 3011	25	16		4001	3961
60. 157	3	3		223	223
9 41				50	50
1				1	1
5 16	1			22	22
102/ 3225	20	10		4297	
				7271	
1019 3206	29	19			4256
	949 3011 60. 157 9 41 1 5 16	949 3011 25 60 157 3 9 41 1 5 16 1	0 2 3 2 2 5 2 9 1 9	0 65 RO 5 RO 5 RO 10 RO	Design of the state of the stat

XEDNI YBURNIY BY INJURY INDEX SHOULD SHOULD SHOULD ALL

					ENATIONS							
	44	A SEQ	WIN.	OQ AOA'	JH4HOHH	RECORDS	ACC1DENTS					
ON AIRPORT	62	109	209	1638	1	2019	1994					
ON SEAPLANE BASE	1	1	1	5		8	8					
ON HELIPORT	2		2	4		8	В					
ON BARGE/SHIP/PLATFORM			1	1		2	2					
IN TRAFFIC PATTERN .	78	43	43	75		239	234					
WITHIN 1/4 MILE	23	24	32	87		166	165					
WITHIN 1/2 MILE	20	13	15	41		89	89					
WITHIN 3/4 MILE	8	1	4	8		21	21					
WITHIN & MILE	22	8	26	37		93	92					
WITHIN 2 MILES	50	18	26	58		152	151					
WITHIN 3 MILES	35	19	20	56		130	129					
WITHIN 4 MILES	30	12	29	36		107	107					
WITHIN 5 MILES	10	7	9	25		51	51					
BEYOND 5 MILES	338	129	170	517		1154	1148					
UNKNOWN/NOT REPORTED	27	6	3	22		58	58					
RECORDS	706	390	590	2610	1	4297						
ACC IDENTS	695	3 86	585	2589	ı		4256					

ANALYTIC TABLE

FIRE AFTER IMPACT BY INJURY INDEX ALL OPERATIONS

	4 ATA	SERIO	WINO	404¢	. RECORDS	ACC IDENTS
FIRE AFTER IMPACT						
YES	185	42	25	44	296	296
UNKNOWN/NOT REPORTED	1			1	2	2
RECORDS	186	42	25	45	298	
ACCIDENTS	186	42	25	45		298

TYPE OF FLIGHT PLAN BY INJURY INDEX ALL OPERATIONS

	FATA SERO WITH HOPE THE HOP	RECORDS ACCIDENTS
NONE	513 332 506 2204 1	3556 3524
VFR	95 38 57 287	477 477
IFR	85 13 25 93	216 215
CONTROLLED VFR	1	1 1
IFR	1	1 1
TOWER EN ROUTE CONTROL SERVIC		
DVFR	1 2	3 3
VFR FLIGHT FOLLOWING SERVICE	1	1 1
SPECIAL VFR	4 1 1	6 6
OTHER	2	2 2
UNKNOWN/NOT REPORTED	6 5 1 22	34 34
RECURDS	706 390 590 2610 1	4297
ACCIDENTS	695 386 585 2589 1	4256

ANALYTIC TARLE

TYPE OF WEATHER CONDITIONS BY INJURY INDEX

	" ATA	SERIO	WIHO	40HE	Jent HOM!	RECORDS	ACC IDENTS
VFR	496	369	567	2505	1	3938	3898
IFR	154	15	18	74		261	261
BELOW MINIMUMS	24	5	2	4		35	35
UNKNOWN/NOT REPORTED	32	1	3	27		63	62
RECORDS	706	390	590	2610	1	4297	
ACC IDENTS	695	386	585	2589	1		4256

GENERAL AVIATION ACCIDENTS

SMALL FIXED-WING AIRCRAFT

•

TYPE OF ACCIDENT VS INJURY INDEX SMALL FIXED WING

				ED MIN				
	FATA	SERIO	WINO	4046	Jruf PO WA	RECORDS	ACCIDENTS	PERCENT
•					•			
GROUND-WATER LOOP-SWERVE	4	10	45	502		561	561	14.13
DRAGGED WINGTIP POD OR FLOAT				2		2	2	. 05
WHEELS-UP LANDING	1	1		119		121	121	3.05
WHEELS-DOWN LANDING IN WATER				2		. 2	2	. 05
GEAR COLLAPSED			6	61		67	67	1.69
GEAR RETRACTED				50		50	50	1.26
HARD LANDING	1	9	23	251		284	284	7.15
NOSE DVER/DOWN	1	2	15	131		149	149	3.75
ROLL DYER								
DVERS HOOT	6	12	22	132		. 172	172	4.33
UNDERSHOOT	10	10	23	79		122	122	3.07
COLLISION BETWEEN AIRCRAFT								
BOTH IN FLIGHT	24	8	4	11		47	25	1.18
ONE A IRBORNE			2			2	1	. 05
BOTH ON GROUND			4	31		35	18	.88
COLLISION WITH GROUND/WATER								
CONTROLLED	66	12	15	21		114	114	2.87
UNCONTROLLED	121	10	11	13		155	155	3.90
COLLIDED WITH								
WIRES/POLES	28	34	20	54		136	136	3.42
TREES	76	19	26	53	1	175	175	4.41
RES IDENCE/S			1			1	1	• 03
BUILDING/S				ь		6	6	.15
FENCE, FENCEPOSTS		2	11	41		54	54	1.36
ELECTRONIC TOWERS	3	1				4	4	.10
RUNWAY OR APPROACH LIGHTS		1	1	1		3	3	. 08
AIRPORT HAZARD		1	2	9		12	12	.30
ANIMALS				3		3	3	. 08
CRDP			3	8		11	. 11	.28
FLAGMAN LOADER								
DITCHES			5	29		34	34	.66
SNOWBANK			1	16		17	17	.43
PARKED AIRCRAFT			2	19		21	21	.53
AUTOMOBILE	3	1	1	16		21	21	.53
DIRT BANK		1	1	16		18	18	.45
OBJECT	5	4	7	65		81	81	2.04

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	4PT	AL SERI	MIN	40H	Jut 10 th			
TYPE OF ACCIDENT	Ψ.	7	4	4	Jer.	RECORDS	ACCIDENTS	PERCENT
BIRD STRIKE	1	1		1		3	3	.08
STALL	79	34	32	55		200	200	5.04
SPIN	57	17	6	1		81	81	2.04
SPIRAL	4	1				5	5	•13
MUSH	7	22	29	84		142	142	3.58
FIRE OR EXPLOSION								
IN FLIGHT	5	1	4	10		20	20	•50
ON GROUND				4		4	4	.10
AIRFRAME FAILURE								
IN FLIGHT	35	4	3	10		52	52	3.31
ON GROUND			1	3		4	4	.10
ENGINE TEARAWAY								
ENGINE FAILURE OR MALFUNCTION	71	109	1 92	479		851	R51	21.43
PROPELLER/ROTOR FAILURE								
PROPELLER	3	3	9	è		24	24	.60
TAIL ROTOR								
MAIN ROTOR								
PROP ROTOR ACONT TO PERSON	5	15				20	20	.50
JET INTAKE/EXH ACONT TO PERS								
PROPELLER/JET/ROTOR BLAST				6		6	6	.15
TURBULENCE	5	6	3	10		24	24	.60
HAIL DAMAGE TO AIRCRAFT								
LIGHTNING STRIKE								
EVASIVE MANEUVER	2			1		3	3	.08
UNCONTROLLED ALT DEVIATION								
DITCHING	1		1	87 T		2	2	.05
MISSING ACFT NOT RECOVERED	19					. 19	19	.48
MISCELLANEOUS/OTHER	4	4	2	10		20	20	.50
UNDETERM INED	10			1		11	11	.28
				2125				
RECORDS			533		1	3971		
ACC IDENTS PERCENT			528		1		3931	
FENDENI	16.5	0.4	13.4		•0			

PHASE OF OPERATION VS AIRCHAFT DAMAGE SMALL FIXED WING

	Q.E.S	ROTED SUR	STANTIA	AONE			RECURDS	ACCIDENTS	PERCENT	
STATIC										
STARTING ENGINE/S		2	1	4			7	7	.18	
IDLING ENGINE/S		7	6	5			18	18	•45	
ENGINE RUNUP		5		1			6	6	.15	
ICLING ROTOFS										
PARKED-ENGINES NOT OPERATING		1					1	1	.03	
OTHER	1	1					2	2	.05	
TAXI										
TO TAKEOFF		65	4				69	67	1.74	
FROM LANDING	1	56	1	3			61	61	1.54	
OTHER	1	30	2				33	33	.83	
GROUND TAXI TO TAKEOFF										
GROUND TAXI FROM LANDING		1					1	1	.03	
GHOUND TAXI + OTHER										
ALRIAL TAXI TO TAKEOFF										
AERIAL TAXI TO/FROM LANDING										
AERIAL TAXI. OTHER										
TAKEOFF										
RUN	. 15	158					173	173	4.36	
INITIAL CLIMA	147	331					418	478	12.04	
VERTICAL										
RUNNING		1					1	1	.03	
ABORTED		49					49	49	1.23	
AEORTED										
AEORTED									_ :	
OTHER	1	7					8	В	-20	
INFL IGHT										
CLIMB TO CHJISE	18	42					60	59	1.51	
NORMAL CHUISE	134	305	2	1			442	438	11.13	
DESCENDING HOLDING	15	35	1				51	51	1.28	
POWERING POWER-ON DESCENT										
AUTOROTATIVE DESCENT										
ACROBATICS	26	6					32	32	.81	
BUZZING .	17	10					27	27	.68	
CUZZINO .	17	10					21	21	• 08	

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		ROTED SUB	HILE	•			
OPERATIONAL PHASE	ئى.	60 18	MINO	HON	kecurds	ACCIDENTS	PERCENT
UNCONTROLLED DESCENT	111	12	4	4	123	123	3.10
EMERGENCY DESCENT		1			1	1	.03
LOW PASS	34	29		1	64	64	1.61
OTHER	137	58	1		146	195	4.94
EN ROUTE TO TREAT CROP	2	y			11	11	.28
EN POUTE TO RELOADING AREA.		2			٤	S	•05
SURVEY FIELD/AREA	1				1	1	.03
STARTING SWATH RUN	5	10			. 15	15	•38
SWATH RUN	18	41			54	59	1.49
FLAREOUT FOR SWATH HUN	1	Ś			6	6	.15
PULLUP FROM SWATH RUN	11	19			30	30	.76
PROCEDURE TURNAROUND	.24	32			56	56	1.41
CLEANUP SWATH	3	1			4	4	•10
MANEUVER TO AVOID OBSTRUCTION	3	5			5	5	•13
RETURN TO STRIP	1	8			9	9	.23
LANDING							
TRAFFIC PATTERN-CIRCLING	25	47	1		73	70	1.84
FINAL APPROACH	67	207	1		275	268	6.93
INITIAL APPROACH	11.	3			14	14	. 35
FINAL APPROACH	23	. 13			dt.	36	•91
LEVEL OFF/TOUCHDOWN	26	658	4	ì	689	687	17.35
ROLL	y	637			646	646	16.27
ROLL-ON/RUN-ON							
POWFR-ON LANDING							
POWER-OFF AUTOROTATIVE LDG							
GO-AROUNG	14	66	1		81,	81	2.04
MISSED APPROACH	4				4	4	•10
OTHER	7	15			22	22	•55
UNKNOWN/NOT REPORTED	26	4			30	30	.76
RECOPDS	939	2991	25	16	3971		
ACCIDENTS	934	2972	25	16		3931	
PERCENT	23.6	75.3	• 6	.4			

SMALL FIXED WING EXCLUDES RECORDS WHICH HAVE NO CODED CAUSE

INVOLVES 3858 TOTAL ACCIDENTS INVOLVES 632 FATAL ACCIDENTS

	FAT	AL ACCID	ENTS	NONFA	TAL ACCI	DENTS	ALL ACCIDENTS			
RROAD CAUSE/FACTOR	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL#	CAUSE	FACTOR	TOTAL*	
PILOT	542	155	546	2716	378	2730	3258	533	3276	
	85.76	24.53	86.39	84•19	11.72	84.62	84.45	13.82	84.91	
PERSONNEL	38	18	54	232	75	304	270	93	358	
	6.01	2.85	8.54	7•19	2•32	9.42	7.00	2.41	9.28	
AIRFRAME	7 1•11	1 • 16	8 1•27	19 .59	10 •31	29 •90	26 •67	11	37 •96	
LANDING GEAR	.00	• 00	• 00	125 3.87	48 1 • 49	172 5.33	125 3.24	48 1-24	172 4.46	
· POWERPLANT	40	4	43	391	21	409	431	25	452	
	6.33	•63	6.80	12•12	•65	12•68	11.17	•65	11.72	
SYSTEMS	6	1	7	20	14	33	26	15	40	
	• 95	• 16	1.11	•62	•43	1.02	.67	•39	1.04	
INSTRUMENTS/EQUIPMENT AND ACCESSORIES	•00	2 •32	2 •32	3 • 09	7 • 22	10 •31	3 •08	9 •23	12 •31	
ROTORCRAFT	• 00	•00	.00	• 00	• 00	• 00	•00	• 00	•00	
AIRPORTS/AIRWAYS/FACILITIES	1	10	11	92	285	372	93	295	383	
	•16	1.58	1.74	2•85	8.83	11.53	2.41	7 . 65	9.93	
WEATHER	29	245	266	200	439	632	229	684	898	
	4•59	38•77	42.09	6.20	13•61	19.59	5 . 94	17.73	23.28	
TERRAIN	16	115	131	553	447	996	569	562	1127	
	2•53	18.20	20.73	17•14	13.86	30.87	14.75	14.57	29.21	
MISCELLANEOUS	23	3	26	98	33	131	121	36	157	
	3.64	•47	4•11	3.04	1.02	4.06	3.14	•93	4.07	
UNDETERMINED	51 8.07	• 00	51 8.07	19 •59	. 00	19 •59	70 1.81	.00	70 1.81	

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

^{*} IF AN ACCIDENT INCEDEES BOTH A CAUSE AND RELATED FACTOR IN THE SAME CAUSAL CATEGORY, THE ACCIL ST IS REPRESENTED ONCE UNDER THE TOTAL FOR THAT CATEGORY

SMALL FIXED WING EXCLUDES RECORDS WHICH HAVE NO CODED CAUSE

INVOLVES 3858 TOTAL ACCIDENTS
INVOLVES 632 FATAL ACCIDENTS

	FATAL ACCIDENTS NONFATAL ACCIDE			DENTS	NTS ALL ACCIDENTS				
DF1AILED CAUSE/FACTOR	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
\$¢ PILOT ♥\$									
PILOT IN COMMAND									
ATTEMPTED OPERATION WANDOWN DEFICIENCIES IN EGUIPMENT ATTEMPTED OPERATION BEYOND EXPERIENCE/ABILITY LEVEL	11 16	1 I 8	22 24	28 63	10 31	38 94	39 79	21 39	50 118
RECAME LOST/DISORIENTED	5	10	. 15	23	16	39	28	26	54
CONTINUED VER FLIGHT INTO ADVERSE WEATHER CONDITIONS CONTINUED INTO KNOWN AREA OF SEVERE TURNULENCE	142	1	143	54	1	58 2	196	5 1	201
DELAYED ACTION IN ABORTING TAKEDEE	i		1	38	1	39	39	i	40
DELAYED IN INITIATING GO-AROUND DIVERTED ATTENTION FROM OPERATION OF AIRCRAFT	5 11	1 8	6 19	63 44	6 30	69 74	68 55	7 38	75 93
EXCEEDED DESIGN STRESS LIMITS OF AIRCRAFT	22	1	23	4	,,,	4	26	1	27
FAILED TO EXTEND LANDING GEAR FAILED TO HETRACT LANDING GEAR		1	1	54 4	1	54 5	54 4	2	54
RETRACTED GEAR PREMATURELY	1		i	4	1	4	5	2	6 5
INADVERTENTLY RETRACTED GEAR FAILED TO SEE AND AVOID OTHER AIRCRAFT	19		19	19 37	1	19 38	19 56	1	19 57
FAILED TO SEE AND AVOID DRUECTS OR OBSTRUCTIONS	24		24	139	1	140	163	1	164
FAILED TO OBTAIN/MAINTAIN FLYING SPEED MISJUDGED, SPEED, ALTITUDE OR CLEARANCE	152		152	374		324 7	476		476
FAILED TO USE OR INCORRECTLY USED MISC FOULPMENT	5	3	7	5	5	- 10	6	8	9
FAILED TO FOLLOW APPROYED PROCEDURES, DIRECTIVES FTO	11	9	20	34	10	49	50	19	69
IMPROPER OPERATION OF POWERPLANT + POWERPLANT CONTROLS IMPROPER OPERATION OF ARAKES AND/OR FLIGHT CONTROLS	8	1	. 9	131 148	10	141	139 148	11	150 153
IMPROPER OPERATION OF FLIGHT CONTROLS	2.5		25	78	2	80	103	2	105
PREMATURE LIFT OFF IMPROPER LEVEL OFF	2			54	1	65	64	1	65
IMPROPER IFR OPERATION,	17	1	. 17	267 12	2	269 12	269 29	3	272 29
IMPROPER IN-FLIGHT DECISIONS OF PLANNING	25	10	3 =	8.3	22	105	108	32	140
IMPROPER COMPENSATION FOR WIND CONDITIONS INADEQUATE PREFLIGHT PREPARATION AND/OR PLANKING	36	55	1 91	77 345	12 62	89 407	7 R 3 R I	12 117	90 498
INADEQUATE SUPERVISION OF FLIGHT	10		10	96	4	100	106	4	110
LACK OF FAMILIARITY WITH AIRCRAFT MISMANAGEMENT OF FUEL	25 .	19	21 25	31 224	81	112 227	33 249	100	133 252
EXERCISED PORR JUNGMENT	47	9	56	119	12	131	166	71	187
OPERATED CARELESSLY SELECTED UNSUITABLE TERRAIM	1 2	1	1 3	4 219	1 11	5 230	221	1	6
IMPROPER STARTING PROCEDURES	,	1	,	9	11	9	9	12	233
STARTED ENGINE WITHOUT PROPER ASSISTANCE/EQUIPMENT TAXIED/PARKED WITHOUT PROPER ASSISTANCE	1 -		1	17	1	14	18	1	19
FAILED TO ASSURE THE GEAR WAS DOWN AND LOCKED	1		1	10 41		10	1n 42		10
INITIATED FLIGHT IN ADVERSE WEATHER CONDITIONS	25		2.5	6		6	31		31
SPONTANEOUS-IMPROPER ACTION MISJUDGED DISTANCE, SPEED, AND ALTITUDE	4	1	4	26 34	1	27 35	3 n 3 7	1.	31 39
MISJURGED DISTANCE AND SPEED	5	•	- 5	156	2	158	161	2.	163
MISJUDGED DISTANCE MISJUDGED DISTANCE AND ALTITUDE	1		1 8	5	1	6	.6	I	7
MISJUDGED SPEED AND ALTITUDE	1		1	81 19	4	85 19	89 20	4	80 83
MISJUDGED SPEED	ì		î	25	4	29	26	4	30
MISJUDGED SPEED AND CLEARANCE MISJUDGED ALTITUDE AND CLEARANCE	4		,	6		6	.6		. 6
MISJUNGED ALTITUDE	6 25	2	27	10 23	4	10 27	16 48	6	16 54
MISJIDGED CLEARANCE	19		Jò	54	2	56	73	2.	75
INADEQUATE TRAINING DE STUDENT MISUNDERSTANDING DE ORDERS OR INSTRUCTIONS		1	1		1 3	. 1		1	1
IMPROPER RECOVERY FROM BOUNCED LANDING	1	•	i	154	3	157	1 55	3	158
INCAPACITATION PHYSICAL IMPAIRMENT	- 8 15	7	22	3 14	6	3 20	11 29	13	1 l 42
SPATIAL DISCRIENTATION	104	,	104	9	1	10	113	13	114
PSYCHOLOGICAL CONDITION MISUSED OR FAILED TO USE FLAPS	2	17	3	1	1.6	1	3	1	4
LEFT AIRCRAFT UNATTENDED ENGINE RUNNING	-	,	9	72 1	16	38 1	24 1	23	47 1
FAILED TO MAINTAIN DIRECTIONAL CONTROL	2		7	388	1	389	390	1	391
SELECTED WRONG RUNWAY RELATIVE TO EXISTING WIND FAILED TO ARORT TAKEOFF	4		4	44 35	7 3	51 38	44 39	7	5 l 42
FAILED TO INITIATE GO-AROUND	1		i	73	5	78	74	5	79

PILOT IN COMMAND (CONTINUED)		AL ACCIT	ENTS	NONFA	TAL ACCI	DENTS	ALL ACCIDENTS			
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOT AL	
OIRECT ENTRIES	6		6	?		2	8		8	
SUBTOTA_	874	168	1042	4116	411	4527	4990	579	5569	
COPILOT FAILED TO EXTEND LANDING GEAR INADVERTENTLY RETRACTED GEAR FAILED TO SEE AND AVDID ORJECTS OR OBSTRUCTIONS FAILED TO OBTAIN/MAINTAIN FLYING SPEED IMPROPER OPERATION DE POWERPLANT + POWERPLANT CONTROLS IMPROPER OPERATION OF BRAKES AND/OR FLIGHT CONTROLS IMPROPER LEVEL OPE LACK OF FAMILIARITY WITH AIRCRAFT SPONTANEOUS—IMPROPER ACTION MISUSED OR FAILED TO USE FLAPS	1 1		2	2 2	11.	1 3 1 2 2 2 1 3	1 3 1 1 1 2 2 2	1 1 1	1 3 1 1 1 2 2 1 5	
SUBTOTAL.	4		4	11	3	14	15	3	18	
DUAL STUDENT DELAYED IN INITIATING GD-ARGUND DIVERTED ATTENTION FROM OPERATION OF AIRCRAFT FAILED TO EXTEND LANDING GEAR INADVERTENTLY REFRACTED GEAR FAILED TO SEE OTHER AIRCRAFT FAILED TO SEE OTHER AIRCRAFT FAILED TO SEE AND AVOID OBJECTS OR ORSTRUCTIONS FAILED TO OBTAIN/MAINTAIN FLYING SPEED IMPROPER OPERATION OF PRAKES AND/OR FLIGHT CONTROLS IMPROPER OPERATION OF FRAKES AND/OR FLIGHT CONTROLS IMPROPER OPERATION OF FLIGHT CONTROLS PREMATURE LIFT-OFF IMPROPER LEVEL OFF IMPROPER LEVEL OFF IMPROPER COMPENSATION IMPROPER COMPENSATION IMPROPER COMPENSATION IMPROPER COMPENSATION SELECTED UNSUITABLE TERRAIN SPONTANEOUS-IMPROPER ACTION MISJUDGED LISTANCE, SPEED, AND ALTITUDE MISJUDGED CISTANCE AND SPEED MISJUDGED CISTANCE AND SPEED MISJUDGED SEED AND ALTITUDE MISJUDGED ALTITUDE MISJUDGED ALTITUDE MISJUDGED ALTITUDE MISJUDGED ALTITUDE MISJUDGED CLEARANCE MISJUDGED CLEARANCE MISJUDGED CLEARANCE MISJUDGED CLEARANCE MISJUDGED CLEARANCE MISJUDGED TO MAINTAIN DIRECTIONAL CONTROL FAILED TO MAINTAIN DIRECTIONAL CONTROL	4	1	1	1 2 1 2 2 7 4 6 6 5 14 1 2 2 1 4 4 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 2	1 2 1 2 7 5 6 5 1 1 1 1 2 1 1 1 1 2 1 1 1 2 2 7 7 1 1 1 1	1 2 1 2 2 2 2 1 1 4 4 6 5 5 1 4 4 1 2 2 1 5 2 1 5 2	1 1 1 1 2	1 2 1 7 2 2 2 11 5 6 6 1 1 1 2 1 1 1 5 5 4 8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
SUBTOTAL	5	. 1	6	88	6	94	93	7	100	
CHECK PILOT DIVERTED ATTENTION FROM OPPRATION OF AIRCRAFT 'IMPROPER OPPRATION OF POWERPLANT + POWERPLANT CONTROLS INADEQUATE SUPERVISION OF FLIGHT FXERCISED POOR JUDGEMENT				1 1 3 1		1 1 3 1	1 1 3 1		1 1 3 1	
SUBTOTAL				6		6	6		6	
** PERSONNEL **										
FLIGHT INSTRUCTOR INADEQUATE SUPERVISION OF FLIGHT INADEQUATE TRAINING DE STUDENT MAINTENANCE, SERVICING, INSPECTION IMPROPER MAINTENANCE(MAINTENANCE PERSONNEL) IMPROPER MAINTENANCE(DOWNER PERSONNEL) IMPROPERLY SERVICED AIRCRAFT(GROUND CREW) IMPROPERLY SERVICED AIRCRAFT(GROUND CREW) IMPROPERLY SERVICED AIRCRAFT(MAINTENANCE PERSONNEL INADEQUATE INSPECTION OF AIRCRAFT(MAINTENANCE PERSONNEL INADEQUATE MAINTENANCE AND INSPECTION	1 2 1 1	1 2	2 2 7 1	13 8 13 1 2 2 115	14 6 1 2 2 13	27 14 13 1 1 4 4	14 8 15 1 1 2 3 125	15 8 1 2 2 14	29 16 15 2 1 4 5	

PERSONNEL (CONTINUED)							ALL ACCIDENTS			
•	FA1	AL ACCID	ENTS	NONFA	TAL ACC	DENTS		L ACCIDE	NTS	
	CAUSE	FACTOR	TOTAL	CAUSF	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	
OTHER OPERATIONAL SUPERVISORY PERSONNEL				2	1	3	?	1	3	
IMADEGUATE FLIGHT TRAINING-PROCEDURES IMADEGUATE SUPERVISION OF FLIGHT CREW FAILURE TO PROVIDE ADEO DIRECTIVES, MANUALS, EQUIPMENT		. 2	2 2. 1		1 1	1 1 1		3 3 2	. 3	
DEFICIENCY, COMPANY MAINTAINED EOMT, SERV, REGULATIONS FATHER PERSONNEL INCORRECT WEATHER FORECAST	1	2	3 1	2	2	4	3	. 1	7	
RAFFIG CONTROL PERSONNEL FAILURE TO ADVISE OF UNSAFE AIRPORT CONDITION FAILURE TO ADVISE OF OTHER TRAFFIC				1		1	1		1 1	
ISSUED IMPROPER OR CONFLICTING INSTRUCTIONS INADEQUATE SPACING OF AIRCRAFT OTHER		1 2 1	1 2 1	1 1	2	1 2	1	1 2 3	2 3 3	
IRPORT SUPERVISORY PERSONNEL THPROPER MAINTENANCE-AIRPORT FACILITIES FAILURE TO NOTIFY OF UNSAFE CONDITION IMPROPER INSPECTION OF FACILITIES OTHER		1	1	? 6 2	6	2 1 ? 1 2	? 6 ?	7 1	2 13 1 2	
IRWAYS FACILITIES PERSONNEL RODUCTION-DESIGN-PERSONNEL Substandard Guality Control				1		1	1		1	
PODR/INADERUATE DESIGN OTHER ISCELLANEOUS-PERSONNEL	1		1	3	2	5	3	2	5	
PILOT OF OTHER AIRCRAFT GROUND SIGNALMAN SPECTATOR	20	1	1	41 1 1	5	46 1 1 2	1 1	5 1	66 2 1 2	
GROUND CREWMAN PASSENGER DRIVER OF VEHICLE OTHER DIRECT ENTRIES	4 3 2	5	6 3 2	13 4 3 1	3 6 4	16 10 /	17 7 5 1	5 6 4	22 13 9	
IRN PILOT IGHT ENGINEER OTHER FLIGHT PERSONNEL SPATCHING	1		1				1		, 1	
SUBTOTAL	47	2 0	67	245	75	320	292	95	387	
** AIRFRAME **										
NGS SPARS BRACING WIRES, STRUTS	1		1	2 ·		2	1 2		1 2	
SKIN AND ATTACHMENTS WINGTIPS OTHER	1		1	3 1 2		3 1 2	4 1 5		4 1 5	
USELAGE FLOOR STRUCTURE SKIN AND ATTACHMENTS DOORS, DOOR FRAMES WINDSHIELDS, WINDOWS, CANOPIES SEATS	1		1	2 1 3	1 3 1	. 1 2 4 1 3	? ? 3	3	1 2 5 1 3	
OTHER ANDING GEAR MAIN GEAR-SHOCK ARSORBING ASSY, STRUTS, ATTACHMENTS, ETC				1	. 3	4 15	1 13	3	15	
NORMAL RETRACTION/FXTENSION ASSEMBLY FMERSENCY/EXIENSION ASSEMBLY TAILWHEEL ASSEMBLIES NOSEWHEEL ASSEMBLIES WHEELS, TIRES, AXLES SKI ASSEMBLIES				38 6 3 8 19 1	6 1 4 9	44 7 / 8 28 1	28 6 3 8 19	6 1 4	44 7 7 8 28 L	
FLOAT ASSEMBLIES RRAKING SYSTEM (NORMAL) LANDING GEAR WARNING AND INDICATING COMPONENTS GEAR LOCKING MECHANISM SWITCHES, LEVERS, CRANKING MECHANISM, ETC NOSEWHEEL STEERING OTHER				1 27 1 9 5 4	1 10 13	37 14 9 5 5	27 1 9 5 4	- 10 13	37 14 9 5 5	
FLIGHT CONTROL SURFACES ELEVATOR, ASSEMBLY ATTACHMENTS				1	1	2	1	1	2	

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AIRFRAME (CON"INUED)		TAL ACC I			TAL ACCI		ALL ACCIDENTS			
		FAC TOR			FACTOR		CAUSE	FACTOR	TOTAL	
A ILERON, SURFACES ATTACHMENTS HORIZONTAL STABILIZER, ATTACHMENTS FLAP ASSEMBLIES OTHER	1 1	1	? 1	5 1	1 1 1	6 1 1 2	6 7 7	2 1 1	8 2 1 3	
SUBTOTAL	9	1	10	162	61	223	171	62	233	
** POWERPLANT **										
ENGINE STRUCTURE CRANKSHAFT MASTER AND CONNECTING RODS CYLINDER ASSEMBLY PISTON, PISTON RINGS VALVE ASSEMBLIES RICHER, IMPELLER ASSEMBLY MOUNT AND VIRRATION ISOLATORS OTHER IGNITION SYSTEM	2 1 2		2 1 2	10 15 18 9 21 6		10 15 18 9 21 6 1	10 17 19 11 21 6 1		10 17 19 11 21 6	
MAGNETOES SPARK PLUG COILS IGNITION HARNESS, SHIELDING SHITCHES LEADS OTHER FUEL SYSTEM	. 1 1	1	2 1 1	17 8 2 1	1	17 10 2 2	17 9 2 1 1	3	17 12 2 3 1 1	
LINES AND FITTINGS SELECTOR VALVES FILTERS, STRAINERS, SCREENS CARRURETOR PUMPS FUEL INJECTION SYSTEM VENTS, DRAINS, TANK CAPS RAM AIR ASSEMBLY OTHER	1 1 .1 1	1	1 1 2 1 1	20 6 3 16 4 2 10 2 8	, 1 2	20 6 3 16 4 2 11 2	21 7 3 17 5 2 11	1 1 2	21 7 3 17 6 2 12 2	
LUBRICATING SYSTEM LINES, HOSES, FITTINGS VALVES FILTERS, SCREENS OTHER COOLING SYSTEM				8 2 1 3	1	8 · · · · · · · · · · · · · · · · · · ·	я ? 1 3	1	1 2 1	
COWLING PROPELLER AND ACCESSORIES				1	1	5	1	1	2	
BLADES HUBS HYDRAULIC PITCH CONTROL MECHANISM SPINNERS, DDMES GOVERNORS RLADE RETENTION MECHANISM METAL CAP, BLADE LEADING EDGE OTHER EXHAUST SYSTEM	2 1 1 1		? 1 1	13 3 2 1 1	1 1	14 4 2 1 1	15 3 3 1 1 1 1	1 1	16 4 3 1 1 1 1 1	
MANIFOLDS MUFFLERS GASKETS CLAMPS STACKS BAFFLES EXTERNAL SUPERCHARGER OTHER NGINE ACCESSORIES	2 1	. 1	1	1 3 1 3 2 1		1 3 1 3 2 1	1 5 1 4 2 1	1	1 5 1 4 2 1 1	
ENGINE CONTROLS-COCKPIT THROTTLE-POWER LEVER ASSEMBLIES MIXTURE CONTROL ASSEMBLIES INDUCTION AIR, PREHEAT CONTROLS POWERPLANT-INSTRUMENTS FUEL QUANTITY GAUGE	. 1	2	1	15 6 1	1	16 6 1	16	10	17 6 1	
OTHER MISCELLANEOUS POWERPLANT FAILURE FOR UNDETERMINED REASONS FOREIGN OBJECT DAMAGE	14		14	145	2	145 1	159 1	2	159 1	

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	0.002277707	Circ . Aire								
POWERPLANT (CONTINUED)	FAT	AL ACCIN	ENTS	NONEA	TAL ACCI	DENTS	ALL ACCIDENTS			
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	
DET GNAT 10N OT HER	1		1	1 5		1 5	· 1		1 6	
REDUCTION GEAR ASSEMBLY GEARS, ACCESSORY DRIVE COMPRESSOR ASSEMBLY COMBUSTION ASSEMBLY TURBINE ASSEMBLY ACCESSORY DRIVE ASSEMBLY				1		1	1		1	
LURRICATING SYSTEM FUFL SYSTEM NOZZLE, FUEL FUFL SHUTOFF SAFETY SYSTEM IGNITION SYSTEM TORQUEMETER				1		1	1		1	
OTTHER AIR BLEED EXHAUST SYSTEM THRUST REVERSER PROPELLER SYSTEM CONSTANT SPEED DRIVE POWER LEVER PROPELLER LEVER REVERSE THRUST LEVER ENGINE INDICATING EDUIPMENT SNGINE INSTALLATION					1	1		1	1	
SUBTOTAL	43	5	4 A	415	23	438	458	28	486	
** SYSTEMS **										
ELECTRICAL SYSTEM AATTERIES GENERATORS/ALTERNATORS REGULATOR RELAYS AND WIRING MOTORS PROTECTIVE DEVICES HYDROWLIC SYSTEM	1		1	1 1 1 1	2 4 1	3 9 1 1 1 4	2 1 1 1 1 1	2 8 1	4 5 2 1 1 4	
RESERVOIR, LIMES, FITTINGS SEALS SMUT-OFF VALVE				3 1 1		3 1 1	3 1 1		3 1 1	
FLIGHT CONTROL SYSTEMS ALLERON AND ALLERON TAR CONTROL SYSTEM ELFVATOR AND FLEVATOR TAR CONTROL SYSTEM RUDDEN AND RUDDER TAR CONTROL SYSTEM HING FLAP CONTROL SYSTEM (HYDRAULIC)	1		1	4 2 4	1	4 3 4	4 3 4 1	1	4 4 4 1	
ANTI-ICING, DE-ICING SYSTEMS PROPELLER ANTI-ICING, DE-ICING SYSTEMS CARRURETOR DE-ICING SYSTEM AIR CONDITION, HEATING AND PRESSURIZATION OTHER	1		1	1	1	1	1 1	1 ,	1 2	
AUTO PILOT FIRE HARNING SYSTEM FIRE EXTINGUISHER SYSTEM OXYGEN SYSTEM							1		ľ	
CREW SYSTEM OTHER SYSTEMS				. 1		1	1		1	
OTHER		1	1					1	1	
SURFOTAL	6	1	7 .	5.5	16	38	28	17	45	
** INSTRUMENTS/EQUIPMENT AND ACCESSORIES **										
FLIGHT AND NAVIGATION INSTRUMENTS ALTIMETERS AIRSPEED OTHER		1	1 1	1	2	1 2	1	3 1	1 3 1	
COMMINICATIONS AND NAVIGATION EQUIPMENT TRANSMITTERS AND/OR RECEIVERS VOR RECEIVERS COMPASS RECEIVERS					3 1 1	3 1 1		3 1 1	3 1 1	

ι	AUSE/FACT	DR TABLE							
INSTRUMENTS/EQUIPMENT AND ACCESSORIES (CONTINUED)	FATAL ACCIDENTS			TAL ACCI		۵۱	L ACCIDE	NT S	
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
MISCELLANEOUS EQUIPMENT SPRAY, DUSTING EQUIPMENT SIGN TOWING EQUIPMENT				2	1	2 1	?	1	2 1
SUBTOTAL		2	2	3	8	i i	3	10	13
** AIRPORTS//IRWAYS/FACILITIES **									
AIRPORT FACILITIES APPROACH LIGHTING RUNNAY LIGHTING RAMP FACILITIES OTHER				1	1 3 1 2	1 3 ? 3	1	1 3 1 2	1 3 2 3
AIRPORT CONDITIONS WET RUNNAY ICE/SLUSH ON RUNNAY SNOW ON RUNNAY SNOW HINDROKS UNMARKED UNSTRUCTIONS SOFT SHOULDERS (RUNNAY)		1	t	3 12 7 6 3	37 18 3: 15 5 21	40 30 38 21 8 27	3 12 7 6	37 18 32 15 5	40 30 39 21 8 27
ROUGH WATER HIGH VEGETATION HIDDEN HAZARO POORLY MAINTAINED RUNWAY SURFACE SOFT RUNWAY WET RAMP/TAXIWAY LCE/SULSH ON RAMP/TAXIWAY			1	5 8 3 17	1 19 7 13 23	1 24 15 16 40 1	5 8 3 17	1 19 7 14 23 1	1 24 15 17 40 1
SNOW ON RAMP/TAXIWAY SOFT SHOULDERS (RAMP/TAXIWAY) SOFT TAXIWAY OTHER DIRECT ENTRIES AIRWAYS FACILITIES	1	я	9	1 1 31 1	2 2 1 108	3 3 1 139	1 1 32 1	. 2 1 116	3 3 1 148 1
SUBTOTAL	1	10	11	106	312	418	107	322	429
** HEATHER **									
LOW CEILING RAIN FOG SNOW ICING CONDITIONS-INCLUDES SLEET, FREEZING RAIN, ETC CONDITIONS CONDUCIVE TO CARB/INDUCTION SYSTEM ICING UNFAVORABLE AIND CONDITIONS SUDDEN MINDSHIFT	9 4 3 1 5 3	168 78 117 26 25 2	177 82 120 27 31 5	9 4 5 6 34 107 10	48 20 31 14 21 29 190	57 24 35 19 27 63 297 23	18 8 7 6 12 37 110	216 98 148 40 46 31 195	234 106 155 46 58 66 305 23
TURBULENCE IN FLIGHT, CLEAR AIR TURBULENCE ASSOCIATED WITH CLOUDS AND/OR THUNDERSTORMS DOWNDRAFTS, JPDRAFTS LOCAL WHIRLWIND TORNADO SOVALL LINE	10 .	1 19 7	1 29 10	4 6 11 7 1	10 8 25 2	14 14 36 9	4 16 14 7 1	11 27 32 2	15 43 46 9 1
ADVERSE WIND; ALOFT HIGH TEMPERATURE OBSTRUCTIONS TO VISION HIGH DENSITY ALTITUDE THUNDERSTORM ACTIVITY OTHER	. 3	2 1 5 20 23	1 2 1 5 20 26	1 2 7 3	1 24 8 66 14	1 25 10 73 17	1 7 7	.3 25 13 86 37	1 3 26 15 93 43
		7	7	7	2	4	?	9	11
SUBTOTAL	46 .	506	552	223	526	749	269	1032	1301
** TERRAIN ** WET, SOFT GROUND SNOW-COVERED HIGH VEGETATION HIDDEN OBSTRUCTIONS ROUGH/UNEVEN ROUGH WATER GLASSY WATER HIGH OBSTRUCTIONS LOOSE GRAVEL	1 1 3	1 1 1 94	1 1 4 1 1	62 20 33 9 213 1	23 13 36 5 78 4 2 244	85 33 69 14 291 5 2 3 85	62 20 34 10 216 1	23 13 36 5 79 5 3 338	85 33 70 15 295 6 3 488 2

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TERRAIN (CONTINUED)	FATA				TAL ACCI		ALL ACCIDENTS			
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL.	
SANDY			,	12	5	17	12	5	17	
OTHER .	2	19	. 21	78	67	145	80	86	166	
SURTOTAL	16	116	132	570	478	1048	586	594	1180	
** MISCELLANEOUS **										
AIRD COLLISION VORTEX TURBULFNCE PROPJET/ROTOR ALAST ANIMAL(S) ON RUNWAY/TAXIWAY/RAMP	1 4		1 4	2 14 4 3	2 1 1	2 16 5 4	3 18 4 3	2 1 1	3 20 5 4	
EVASIVE MANEUVER TO AVOID COLLISION UNDUALIFIED PERSON OPERATED AIRCRAFT SUICIDE	8 1 3	3	11 1 3	37 1	22 1	59 2	4.5 2 3	25 1	70 3 3	
FOREIGN OBJECT DAMAGE SMOKE IN COCKPIT FOREIGN MATERIAL AFFECTING NORMAL OPERATIONS	1 2		1 2	3 33	1 5	3 1 38	4 35	1	4 1 40	
UNDETERMINED DIRECT ENTRIES	5 1 3		5 L 3	19 2		19 7	7 n 5		7 0 5	
SURTOTAL	74	3	77	118	33	151	192	' 36	228	
GRAND TOTAL	1125	833	1954	6.085	1952	8037	7210	2785	9995	
** MISCELLANEOUS ACTS, CONDITIONS **										
ALTIMETER SETTING-INCORRECT ANTI-ICING/DEICING EQUIP-IMPROPER OPER. OF/FAILED TO USE CHECKLIST-FAILED TO USE CREW COORDINATION-POOR	2	1 1 1	1 3 1 1	66 4 1	1 5 37	1 71 41 5	68 4	? 6 38 5	2 74 42 6	
DISREGARD OF GOOD OPERATING PRACTICE IMPROPER EMERGENCY PROCEDURES . FEATHERED WRONG ENGINE	8	4	12	1 26 2	12	4 38 2	1 34 2	3 16	50 2	
INSTRUMENTS-MISREAD OR FAILED TO READ . SEAT BELT NOT FASTENED	1	3 · 5	4 6	4	3 1	7 1	5 1	6	11	
NOT ALLIGNED WITH RUNMAY/INTENDED LANDING AREA UNMARRANTED LOW FLYING FAILED TO EXTEND THE LANDING FLAPS	35	15	1 50	17 35	14 12 1	31 47 1	18 70	14 27	32 97 1	
FAILFD TO USE ALL AVAILABLE RUNWAY LANDED AT WRONG AIRPORT	1	?	3	7	10	17	8	12	20	
INATTENTIVE TO FUEL SUPPLY FLEW INTO BLIND CANYON PREMATURE FLAP RETRACTION	3	6	9	42 10 2	6 1 3	48 11 5	44 13 2	6 7 3	50 20 5	
PODRLY PLANNED APPROACH MISCALCULATED FUEL CONSUMPTION JETTISONED LOAD	3	14	15 3 1	6 33	54 3 17	60 36 17	7 36	68 3 18	75 39 18	
STOLEN OR UMADTHORIZED USE OF AIRCRAFT LANGED ON FOAMED RUMMAY CORRECTING LENSES-MOT USED		20 T 9	9	1 .	. 8 6 1	9 6 1	1	17 6 1	18 6 1	
IMPROPERLY SECURED DOGUS PART COMMUNICATIONS FAILURE	4		4	16	. 4	20	20	4	24 2	
ELECTRICAL FAILURE ENGINE LOADED UP FAITIGUE FRACTURE	1 3 .	I	2	3 23 19	15	18	4 23	16	20 24	
FUEL GRADE-IMPROPER HYDRAULIC FAILURE WINDSHIELD, DIRTY, FOGGY, ETC-RESTRICTED VISION WRONG PART			3	1 3 3	2 1 10	21 2 3 13	2? 1 3 3	1	24 2 3 13	
IMPROPER ALIGNMENT/ADJUSTMÉNŤ FAILURE OF TWO DR MORE ENGINES SEPARATION IN FLIGHT	1	2 37	3 37	10	9 22	10 15 22	10 7	11 59	10 18 59	
FIRE IN CABIN/ COCKPIT/ RAGGAGE COMPARTMENT FIRE IN ENGINE FIRE IN BRAKES/ WHEFL ASSEMBLY/ WHEEL WELL:	2 4 2	. 1	2 5 2	2 14 1	3 5	5 19 1	4 18 3	. 6	7 24 3	
ASYMETRICAL FLAPS CORRODED/CORROSION	1 2	1	1	3	3	6	1 5	4	1 9	
INCORRECT TRIM SETTING CONGESTED TRAFFIC-PATTERN PILOT FATIGUE	1	3 14	· 1 3 15	1	3 7	1 3 10	7	6 21	2 6 25	

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MISCELLANEOUS ACTS, CONDITIONS (CONTINUED)	FAT	AL ACCIO	DENTS		TAL ACCI		ALL ACCIDENTS			
	CAUSE	FACTOR	TOTAL		FACTOR		CAUSE	FACTOR	TOTAL	
SUEL SWINGSTON										
FUEL EXHAUSTION FUEL CONTAMINATION-EXCLUSIVE OF WATER IN FUEL	17		17 1	154 5	2	156	171	5	173 6	
PILOT SUFFERED HEART ATTACK ALCOHOLIC IMPAIRMENT OF EFFICIENCY AND JUDGMENT	6	-	6				(.		6	
HYPOXIA	13	5 4	18	. 6	3	9 1	19 1	8	27 5	
CARBON MONOXIDE POISONING ICE-IN FUEL		1	1	А				1	1	
ICE-CARBURETOR	3		3	60		8 60	8 63		8 63	
AIRFRAME ICE ICE-WINDSHIELD	9	10	19	13	14	27	2.2	24	46	
IMPROPERLY LOADED #1RCRAFT-WEIGHT-AND/OR CG	2	2 17	2 19	3 5	2 15	5 20	3	4 32	7 39	
INTERFERENCE WITH FLIGHT CONTROLS	2		2	4	3	7	6	3	9	
WHIT EDUT SUNGLARE		3	3	1 2	4 25	5 2 7	1	4 28	5 30	
LACK OF LUBRICATION-SPECIFIC PART, NOT SYSTEM		,	,	10	1	11	10.	1	11	
OIL EXHAUSTION-ENGINE LUBRICATION SYSTEM OIL EXHAUSTION-PROPELLER SYSTEM OIL CONTAMINATION	1		1	11 1		11 1	12		1 2 1 1	
SIMULATED CONDITIONS	1	2	3	18	19	37	19	21	40	
FUEL SIPHONING WATER IN FUEL				1 34		1 34	34		1 34	
AIRCRAFT CAME TO REST IN WATER		. 43	43		57	57		100	100	
FROZEN, MOISTURE MISSING				3 1		3 1	3		3 1	
TOUCH AND GO LANDING		3	3	_	76	76		79	79	
HYDROPLANING ON WET RUNWAY OVERLOAD FAILURE	24	ı	25	21	3 454	4 475	1 45	3 455	5 O O	
MATERIAL FAILURE	8		8	168	12	180	176	12	188	
FUEL STARVATION DIL STARVATION	19		19	139	1	140	158	. 1	159 4	
IMPROPER CLEARANCE-TOLERANCE				8	2	10	8	2	10	
FUEL SELECTOR POSITIONED RETWEEN TANKS TIEDOWN LINES SNAPPED				6		6	6		6	
FIRE OF UNDETERMINED ORIGIN				1	2	1 3	1	2	l 3	
UNAPPROVED MODIFICATION, POOR WELD					1	1		1	1	
PREVIOUS DAMAGE		1	1	1 8	1 16	2 24	1	1 17	? 25	
L EAK/L EAKAGE		•		18	5	20	1 11	2	20	
LOW FLUID LEVEL CIRCUIT BREAKER POPPED				1	13	1 14	1	13	1 14	
LOW COMPRESSION				i	1	2	i	1	2	
RUNWAY CLOSED DOWNWIND		5	5	1	3 90	3 91	1	3	96	
CARBON DEPOSITS	1	í	2	î	70	1	2	1	3	
OVER TORQUED UNDER TORQUED	1		1	1		1	1		1	
LOOSE, PART/FITTING	•		1	- 5	1	6	5	1	6	
RENT BINDING				. 6	1 1	3 7	?	1	3 7	
BURST BURNED				1		i	1	•	ì	
CHAFFED	1		1	3 3		3	3 4		3 4	
CROSSED				2	l	3	?	1	3	
DETERIORATED DISCONNECTED	5		2	4 30	1	5 33	6 30	1 3	7 33	
DISTORTED				1		1	1		1	
ELONGATED EXCESSIVE—WEAR/PLAY				5	1 1	1 6	5	1	1	
ERRATIC	•	4	4	ž	6	Я	2	10	12	
FLUCTUATING Flutter	1	1	2	2	2	2	3	? 1	2 4	
GROUNDED	1	,	i	2	2	4	3	2	5	
EXCESSIVE VOLTAGF IMPROPERLY INSTALLED	3	ι	4	1 12	1	1 13	1 15	2	1 ' 17	
JAMMED		L		А	1	9	8	í	9	
OBSTRUCTED OPEN	3		3	16	1	17	19	1	20	
OUT OF BALANCE				1	1	1 1	1	1	1 1	
OVERHEATED PRESSURE	2		2	. 5	1	6	7	1	8	
EXCESSIVE PRESSURE PRESSURE TOO LOW				1 11	6	1 17	1 11	6	1 17	
PRESSURE, NONE				8		8	8		8	

MISCELLANEOUS ACTS, COMDITIONS (CONTINUED)	FAT	NON F 4	TAL ACCI	DENTS	ALL ACCIDENTS				
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
SHEARED				8	1	9	8	1	9
STICKING			•	1	1	2	1	1	2
STUCK				4	ı	,	4 8	1	10
VIARATION, EXCESSIVE CONGESTED RAMPZTAXIWAY	/		2	۴	έ	n 5		<u> </u>	111
ICE-INDUCTION				1	9	,	1		í
FIRE IN WING	2		2	•	3	i	2	1	3
LOAD NOT JETTISOMED				2	10	12	2	10	1.2
FAILED TO USE LANDING LIGHT(S)					2	2		2	2
INTENTIONAL GROUND-WATER LOOP-SWERVE				29	4	33	29	4	33
INTENTIONAL WHEELS UP				33	2.	35	33	7	3.5

DIRECT ENTRY CAUSES

PILOT-RPRID FELL ASLEEP, EXHSTO FHEL, DITCHING.
MISC-INTEMTIMAL SPIN, INVARIE TO RECOVER.
PILOT-LAND ON MALIGHTED RWY INTO THE WIND.
PILOT-LACKED RECONCY OF EXPERIENCE IN TYPE ACET
PERSONNEL-INADPONATE SUPERVISION BY ELT EXAMINER
MISC-LOSS OF CIL IN MIN TERRAIN FOR HONDE REASON.
PLIT-PSPL DISORIENTH THE INJESTN LEG ANT TRANSO PRIG
MISC-RESERVE CHUIT OPENED, SPILLED INTO SLIPSTREAM.
PILOT-DESCEMBED RLO MAD FOR HUNDETERMINED REASON.
ARPT COND-MUD HOLE
MISC-FIRE FROM WYDETERMINED SPIRCE
PILOT-LOSS OF CIL FOR WYDETERMINED REASON.
PILOT-GESCEMBED BLO MAD FOR HUNDETERMINED REASON.
PILOT-GALLED TO MAINTAIN ADOT LATERAL SEPARATIUM
PILOT-CONTO ELT INTO AREA DE LOU CLOUDS

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

KIND OF FLYING BY INJURY INDEX SMALL FIXED WING

	,	,	ovs,	OFOR	UMKHOWH				
	4AT	SEA	WIL	4°	IMAMO		PECOBOS	ACCIDENTS	DEDCENT
					•		KECOKD2	ACCIDENTS	PERCENT
INSTRUCTIONAL									
DUAL	31	19	27	134			211	211	5.31
SOLO	9	13	35	203			260	260	6.55
CHECK		2	1	7			10	10	.25
TRAINING	12	11	20	107			150	149	3.78
NONCOMMERCIAL									
PLEASURE	385	194	313	1258			2150	2138	54.14
PRACTICE	12	9	12	55			88	88	2.22
BUSINESS	89	24	40	241	1		395	394	9.95
CORPORATE/EXECUTIVE	8	1	2	54			65	65	1.64
AERIAL SURVEY	1	1	1	4			7	7	.18
COMPANY FLIGHT									
OTHER	2			6			8	8	.20
COMMERCIAL									
AERIAL APPLICATION	27	41	23	97			188	188	4.73
CROP CONTROL RELATED FLIGHT	. 4	8	19	96			127	127	3.20
FIRE CONTROL							•		
FIRE CONTROL RELATED FLIGHT	1			2			3	3	•08
AERIAL MAPPING/PHOTOGRAPHY	1	1	1	2			5	5	•13
AERIAL ADVERTISING		1	1	3			5	5	.13
POWER AND PIPELINE PATROL	2	1		1			4	4	.10
FISH SPOTTING				2			2	2	•05
AIR TAXI-PASSENGER OPERATIONS	20	3	8	42			73	73	1.84
AIR TAXI-CARGO OPERATIONS	16	5		20			41	41	1.03
CONSTRUCTION WORK									
SCHEDULED PASSENGER SERVICE									
SCHEDULED CARGO SERVICE									
INTRA-STATE CHARTER PASSG.				1			1	1	•03
INTRA-STATE CHARTER CARGO.									
MILITARY CONTRACT-PASSENGER									
MILITARY CONTRACT-CARGO									
CHARTER CARGO-DOMESTIC				2			2	2	•05
CHARTER PASSG-DOMESTIC			1	1			2	2	. 05
CHARTER-CARGO-INTERNATIONAL		1					1	. 1	.03
CHARTER-PASSG-INTERNATIONAL									
OTHER	1			2			3	3	•08
	-			_			-	-	

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KIND OF FLYING UNKNOWN/NOT REPORTED	'AT'	AL SEP	IOU'S	40°	UNIKNO.	MI		RECORDS	ACCIDENTS	PERCENT
MISCELLANEOUS										
EXPERIMENTATION		1						1	1	.03
TEST	6	6		14				31	31	.78
DEMONSTRATION	3	Ü	4	-				12	12	.30
FERRY	9	_							55	
		5						55		1.39
SEARCH AND RESCUE	1	1	2	4				8	, В	.20
AIR SHOW/AIR RACING	5	3		1				9	8	-23
PARACHUTE JUMP		2	5	6				13	13	.33
PARACHUTE JUMP-AIR SHOW	1							1	1	. 03
TOWING GLIDERS			2	2				4	4	.10
SEEDING CLOUDS										
HUNT ING	2			5				7	7	.18
POLICE PATROL										
HIGHWAY TRAFFIC ADVISORY				1				1	1	.03
ALL OTHER PUBLIC FLYING	1	1	1					6	6	.15
	_									
OTHER	3	1	2				,	12	12	.30
UNKNOWN/NOT RÉPORTED	5			5				10	10	• 25
RECORDS	657	355	533	2425	1			3971		
ACC IDENTS	646	351	528	2405	1				3931	
PERCENT	16.5			61.1	•0					
	1017	,		• •						

KIND OF FLYING BY AIRCRAFT DAMAGE SMALL FIXED WING

	destroyed thing work		
	TESTRO UBSIL NHOR TOHE	RECORDS	ACCIDENTS PERCENT
	0 5° W 4		
INSTRUCTIONAL			•
DUAL	41 167 2 1	211	211 5.31
SOLO	20 239 1	260	260 6.55
CHECK	1 9	10	10 .25
TRAINING	20 129 1	150	149 3.78
NONCOMMERC IAL			
PLEASURE	533 1591 14 12	2150	2138 54.14
PRACTICE	20 68	88	88 2.22
BUSINESS	104 289 1 1	395	394 9.95
CORPORATE/EXECUTIVE	10 54 1	65	65 1.64
AERIAL SURVEY	2 5	7	7 .18
COMPANY FLIGHT			
OTHER	2 6	8	8 .20
COMMERCIAL			
AERIAL APPLICATION	66 122	188	188 4.73
CROP CONTROL RELATED FLIGHT	17 108 2	127	127 3.20
FIRE CONTROL			
FIRE CONTROL RELATED FLIGHT	1 2	. 3	.08
AERIAL MAPPING/PHOTOGRAPHY	4 1	5	5 .13
AERIAL ADVERTISING	2 3	5	5 .13
POWER AND PIPELINE PATROL	3 1	4	4 .10
FISH SPOTTING	2	2	2 .05
AIR TAXI-PASSENGER OPERATIONS	25 47 1	. 73	73 1.84
AIR TAXI-CARGO OPERATIONS	20 21	41	41 1.03
CONSTRUCTION WORK			
SCHEDULED PASSENGER SERVICE			
SCHEDULED CARGO SERVICE			
INTRA-STATE CHARTER PASSG.	1	1	1 .03
INTRA-STATE CHARTER CARGO.			
MILITARY CONTRACT-PASSENGER			
MILITARY CONTRACT-CARGO			•
CHARTER CARGO-DOMESTIC	2	2	2 .05
CHARTER PASSG-DOMESTIC	2	2	2 .05
CHARTER-CARGO-INTERNATIONAL	1 .	1	1 .03
CHARTER-PASSG-INTERNATIONAL			
OTHER	1 2	3	3 .08

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KIND OF FLYING UNKNOWN/NOT REPORTED	OEST	ROYED SUBS	MINO	NOME.			RECORDS	ACCIDENTS	PERCENT
MISCELLANEOUS									
EXPERIMENTATION		1					1	1	.03
TEST	13	18					31	31	.78
DEMONSTRATION	3	9					12	12	.30
FERRY	12	43					5 5	. 55	1.39
SEARCH AND RESCUE	2	6					8	8	• 2 0
AIR SHOW/AIR RACING	4	3	1	1			9	8	.23
PARACHUTE JUMP	. 2	10	1				13	13	.33
PARACHUTE JUMP-AIR SHOW	1						1	1	. 03
TOWING GLIDERS		4					4	4	.10
SEEDING CLOUDS									
HUNT ING	3	4					7	7	.18
POLICE PATROL									
HIGHWAY TRAFFIC ADVISORY		1					1	1	.03
ALL OTHER PUBLIC FLYING		6					6	. 6	.15
OTHER	2	10					12	12	.30
UNKNOWN/NOT REPORTED	5	5					10	10	. 25
RECORDS	939	2991	25	16			3971		
ACC IDENTS	934	2972	25	16				3931	

PERCENT

INJURIES, ACCIDENTS
SMALL FIXED WING

INJURIES

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL		
PILOT	597	317	502	2554	1		3971		
COPILOT	40	8	4	57			109		
DUAL STUDENT	21	20	21	151			213		
CHECK PILOT		20	2	3			5		
FLIGHT ENGINEER			۲	,			_		
NAVIGATOR									
CABIN ATTENDANT				4			4		
EXTRA CREW	8	4	2	4			18		
PASSENGERS	613	261	473	2385			3732		
7 2002.102.10	0.10	232		2007			5.52		
TOTAL	1279	610	1004	5158	1	ABOAR D	8052		
* OTHER AIRCRAFT	. 6			4			10		
OTHER GROUND	35	17	35	7			94		
OTHER GROONS				•			,,,		
GRAND TOTAL	1320	627	1039	5169	1		8156		

INVOLVES 3931 TOTAL ACCIDENTS INVOLVES 646 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.

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GENERAL AVIATION ACCIDENTS

LARGE FIXED-WING AIRCRAFT

TYPE OF ACCIDENT BY INJURY INDEX LARGE FIXED WING

		ept pt seet	MIHOR NOHE		RECORDS	ACCIDENTS	PERCENT	
					NEODINO O	400.00.00		
	GROUND-WATER LOOP-SWERVE	1	1 1		3	3	10.00	
	DRAGGED WINGTIP POD OR FLOAT							
	WHEELS-UP LANDING		5		5	5	16.67	
	WHEELS-DOWN LANDING IN WATER							
	GEAR COLLAPSED							
	GEAR RETRACTED		1		1	1	3.33	
	HARD LANDING		2		2	2	6.67	
	NOSE OVER/DOWN							
	ROLL OVER							
	OVERSHOOT		2		2	2	6.67	
	UNDERSHOOT		1		1	1	3.33	
	COLLISION BETWEEN AIRCRAFT							
	BOTH IN FLIGHT							
	ONE AIRBORNE							
	BOTH ON GROUND							
1 1111	COLLISION WITH GROUND/WATER							
	CONTROLLED	2			2	2	6.67	
	UNCONTROLLED							
	COLLIDED WITH							
	WIRES/POLES							
	TREES	2	1		3	3	10.00	
	RESIDENCE/S							
	BUILDING/S							
	FENCE, FENCEPOSTS							
	ELECTRONIC TOWERS							
	RUNWAY OR APPROACH LIGHTS		•					
	AIRPORT HAZARD							
	ANIMALS							
	CROP							
	FLAGMAN LOADER							
	DITCHES							
	SNOWBANK							
	PARKED AIRCRAFT							
	AUTOMOB1LE							
	DIRT BANK							
	OBJECT		1		1	1	3.33	

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		۷,	5	' '	k.	4			
	TYPE OF ACCIDENT	-					RECORDS	ACCIDENTS	PERCENT
	BIRD STRIKE								
	STALL								
	SPIN								
	SPIRAL								
	MUSH								
	FIRE OR EXPLOSION								
	IN FLIGHT					3	3	3	10.00
	ON GROUND								
	AIRFRAME FAILURE								
	IN FLIGHT	1				1	2	2	6.67
	ON GROUND								
	ENGINE TEARAWAY								
	ENGINE FAILURE OR MALFUNCTION	1				3	4	4	13.33
	PROPELLER/ROTOR FAILURE								
	PROPELLER								
	TAIL ROTOR								
	MAIN ROTOR								
	PROP ROTOR ACONT TO PERSON								
•	JET INTAKE/EXH ACONT TO PERS								
	PROPELLER/JET/ROTOR BLAST								
	TURBULENCE								
	HAIL DAMAGE TO AIRCRAFT								
	LIGHTNING STRIKE								
	EVASIVE MANEUVER								
	UNCONTROLLED ALT DEVIATION								
	DITCHING				1		1	1	3.33
	MISSING ACFT NOT RECOVERED								
	MISCELLANE OUS/OTHER								
	UNDETERMINED								
	RECORDS	6	1			.20	30		
	ACCIDENTS	6	1			20		. 30	
	PERCENT	20.0	3.3	10.	.0 66	• 7			

PHASE OF OPERATION BY AIRCRAFT DAMAGE LARGE FIXED WING

DETROYED TANHAL MONE

STATIC

RECORDS ACCIDENTS PERCENT

STARTING ENGINE/S							
IDLING ENGINE/S							
ENGINE RUNUP							
IDLING ROTORS							
PARKED-ENGINES NOT OPERATING							
OT HE R							
IXAT							
TO TAKEOFF							
FROM LANDING							
OTHER							
GROUND TAXI TO TAKEOFF							
GROUND TAXI FROM LANDING							
GROUND TAXI, CTHER							
AERIAL TAXI TG TAKEOFF							
AERIAL TAXI TO/FROM LANDING							
AERIAL TAXI, OTHER							
TAKEOFF							
RUN		3			3	3	10.00
INITIAL CLIMB	1				1	1	3.33
VERTICAL							
RUNNING							
ABORTED		1			1.	1	3.33
ABORTED							
ABORTED							
OTHER							
INFL I GHT							
CLIMB TO CRUISE		1			1	1	3.33
NORMAL CRUISE		4			4	. 4	13.33
DESCEND ING		I			1.	1	3,33
HOLDING							
HOVERING							
POWFR-ON DESCENT							
AUTOROTATIVE DESCENT							
ACROBATICS							
BUZZING							

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OPERATIONAL PHASE	Offs.	SUBSTANT	, 4 ₀ ,		RECORDS	ACC IDENTS	PERCENT
UNCONTROLLED DESCENT							
EMERGENCY DESCENT							
LOW PÁSS							
OTHER	1				1	1	3.33
EN ROUTE TO TREAT CROP							
EN ROUTE TO RELOADING AREA							
SURVEY FIELD/AREA							
STARTING SWATH RUN							
SWATH RUN	1				1	1	3.33
FLAREOUT FOR SWATH RUN							
PULLUP FROM SWATH RUN							
PROCEDURE TURNAROUND							
CLEANUP SWATH							
MANEUVER TO AVOID OBSTRUCTION							
RETURN TO STRIP							
LAND ING							
TRAFFIC PATTERN-CIRCLING							
FINAL APPROACH		1			1	1	3.33
INITIAL APPROACH							
FINAL APPROACH	4				4	4	13.33
LEVEL DFF/TOUCHDOWN	. 1	8			9	9	30.00
ROLL	1			,	1	1	3.33
ROLL-ON/RUN-ON							
POWER-ON LANDING							
POWER-OFF AUTOROTATIVE LDG							
GO-AROUND	1				1	1	. 3.33
MISSED APPROACH							
		1			1	1	3.33
			•				
CORDS	10	20	•		30		
	10				50	30	

LARGE FIXED WING EXCLUDES RECORDS WHICH HAVE NO CODED CAUSE

INVOLVES 28 TOTAL ACCIDENTS 1NVOLVES 6 FATAL ACCIDENTS

	FATAL ACCIDENTS			NONFA	TAL ACCI	DENTS	ALL ACCIDENTS			
BROAD CAUSE/FACTOR	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	
PILOT .	5 83.33	• 00	5 83.33	14 63.64	5 22.73	14 63.64	19 67.86	5 17.86	19 67.86	
PERSONNEL	2 33.33	1 16•67	2 33.33	2 9•119	1 4•55	3 13.64	4 14.29	2 7.14	5 17.86	
AIRFRAME	•00	• 00	• 00	1 4.55	• ೧೧	1 4.55	1 3.57	• 00	1 3.57	
LANDING GEAR	•00	.00	• 00	4 18.18	• ຕກ	4 18.18	4 14.29	.00	4 14.29	
POWERPLANT	1 16.67	• 00	1 16•67	1 4•55	1 4.55	2 9•09	7 7.14	1 3.57	3 10.71	
SYSTEMS	• 00	• 00	• 00	2 9•09	• 00	2 9•09	? 7.14	.00	7.14	
INSTRUMENTS/EQUIPMENT AND ACCESSORIES	1 16.67	• 00	1 15.67	.00	• 00	•00	1 3.57	•00	1 3.57	
ROTORCRAFT	• 00	• 00	• 00	• ೧೧	• 00	• 00	• 00	•00	.00	
AIRPORTS/AIRWAYS/FACILITIES	- •00	• 00	• 00	3 13•64	2 9•09	5 22•73	3 10•71	2 7.14	5 17.86	
WEATHER	1 16.67	3 5 ∩• ∩∩	4 66.67	1 4.55	4 18•18	4 18•18	2 7.•14	7 25.00	8 28.57	
TERRAIN	. •00	• 00	•00	1 4.55	- 00	1 4.55	1 3.57	•00	1 3.57	
MISCELLANEOUS	1 16.67	•00	1 16.67	.00	• 00	• 00	! 3.57	.00	1 3.57	
UNDETERMINED	.00	• 00	• 00	1 4.55	• നറ	1 4.55	1 3.57	• 00	1 3.57	

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 DNCF UNDER THE TOTAL FOR THAT CATEGORY

LARGE FIXED WING EXCLUDES RECORDS WHICH HAVE NO CODED CAUSE

INVOLVES 28 TOTAL ACCIDENTS 6 FATAL ACCIDENTS

	FAT	AL ACCIO	ENTS	NONEA	TAL ACCI	DENTS	ΔL	L ∆CCIDE	NT S
DETAILED CAUSE/FACTOR	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
** PILOT **									
PILOT IN COMMAND BECAME LOST/DISORIENTED CONTINUED VER FLIGHT INTO ADVERSE WEATHER CONDITIONS EXCEEDED DESIGN STRESS LIMITS OF AIRCRAFT FAILED TO EXTEND LANDING GFAR INADVERTENTLY RETRACTED GFAR FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES ETC IMPROPER OPERATION OF RRAKES AND/OR FLIGHT CONTROLS IMPROPER LEVEL OFF IMPROPER IFA OPERATION IMPROPER IN-FLIGHT DECISIONS OR PLANNING INADEQUATE PREFLIGHT DECISIONS OR PLANNING INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING INADEQUATE PREFLIGHT PREPARATION TO AND/OR PLANNING INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING INADEQUATE PREFLIGHT PREPARATION TO AND/OR PLANNING INADEQUATE PREFLIGHT OF FUEL	2		2	.1 1 1 2 2 1 3 1	1 1 2	1 1 1 1 2 2 2 1 3 2 2 1	2 4 1 4 1 1	1 1 2	1 1 1 1 1 1 1 1 2 4 4 2 2 1 1
MISJUDGED DISTANCE AND SPEED MISJUDGED DISTANCE AND ALTITUDE MISJUDGED SPEED MISJUDGED ALTITUDE AND CLEARANCE MISJUDGED ALTITUDE FAILED TO MAINTAIN DIRECTIONAL CONTROL FAILED TO INITIATE GC-AROUND	1		1	2 1 1		1 2	2 1 1 1 1 1 2		2 1 1 1 1 1 2
SUBTOTAL	7		7	20	5	25	27	5	32
COPILOT LACK OF FAMILIARITY WITH AIRCRAFT SPONTANEOUS-IMPROPER ACTION FAILED TO MAINTAIN DIRECTIONAL CONTROL SUBTOTAL				1 1 2	1	1 1 1	1 1	1	1 1 1
** PERSONNEL **					•	_			_
FLIGHT INSTRUCTOR MAINTENANCE, SERVICING, INSPECTION INADEQUATE MAINTENANCE AND INSPECTION OPERATIONAL SUPERVISORY PERSONNEL DEFICIENCY, COMPANY MAINTAINED EQMT, SERV, REGULATIONS WEATHER PERSONNEL TRAFFIC CONTROL PERSONNEL AIRPORT SUPERVISORY PERSONNEL FAILURE TO NOTIFY OF UNSAFE CONDITION AIRMAYS FACILITIES PERSONNEL PRODUCTION-DESIGN-PERSONNEL MISCELLANEOUS-PERSONNEL THROP PILOT FLIGHT ENGINEER DISPATCHING	2	1	2	2	t.	2	4	. 1	1
SUBTOTAL	2	1	3	2	1	3	4	2	6
** AIRFRAME **									
WINGS FUSELAGE LANDING GEAR MAIN GEAR-SHOCK ARSORAING ASSY, STRUTS, ATTACHMENTS, ETC. NORMAL RETRACTION/EXTENSION ASSEMBLY EMERGENCY/EXTENSION ASSEMBLY GEAR LOCKING MECHANISM FLIGHT CONTROL SURFACES RUDDER, SURFACES ATTACHMENTS				1 2 1 1		1 2 1 1	1 2 1 1		1 2 1 1

AIRFRAME (CONTINUED)	FAI	AL ACCIO	ENTS	NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	C 4 .J S F	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
SUBTOT△L				6		6	6		6
** PHWERPLANT **									
ENGINE STRUCTURE MASTER AND CONNECTING RODS CYLINDER ASSEMBLY PISTON, PISTON RINGS IGNITION SYSTEM FUEL SYSTEM OTHER CUMBRICATING SYSTEM COOLING SYSTEM COOLING SYSTEM PROPELLER AND ACCESSORIES EXHAUST SYSTEM	1 1		1 1 1	1	•	1	1 1 1		1 1 1
ENGINE ACCESSORIES ENGINE CONTROLS—COCKPIT POMERPLANT—INSTRUMENTS FUEL QUANTITY GAUGE MISCFLLANEOUS REDUCTION GEAR ASSEMBLY COMMENSOR ASSEMBLY TOMMUSTION ASSEMBLY TURRINE ASSEMBLY ACCESSORY ORIVE ASSEMBLY LURRICATING SYSTEM FUEL SYSTEM					. 1	1			1
SAFETY SYSTEM IGNITION SYSTEM TORQUEMETER AIR ALEED EXHAUST SYSTEM THRUST REVERSER PROPELLER SYSTEM CONSTANT SPEED DRIVE POWER LEVER PROPELLER LEVER REVERSE THRUST LEVER ENGINE INSTALLATION									
SUBTOTAL	3		3	1	1	2	4	1	5
** SYSTEMS **									
ELECTRICAL SYSTEM BATTERIES HYDRAULIC SYSTEM FLIGHT CONTROL SYSTEMS ANTI-ICING, DE-ICING SYSTEMS AIR CONDITION, HEATING AND PRESSURIZATION AUTO PILOT FIRE MARNING SYSTEM				1			1		1
FIRE EXTINGUISHER SYSTEM POWERPLANT OXYGEN SYSTEM				1		1	1		1
OTHER SYSTEMS						2	_		
SUBTOTAL ** INSTRUMENTS/EQUIPMENT AND ACCESSORIES **				. 2		2	2		5
FLIGHT AND NAVIGATION INSTRUMENTS OTHER COMMUNICATIONS AND NAVIGATION EQUIPMENT MISCELLANEOUS EQUIPMENT	ı		1				1		1
SUBTOTAL	1		1				1		1
** AIRPORTS/AIRWAYS/FACILITIES **									

.

AIRPORT FACILITIES
AIRPORT CONDITIONS

A IRPORTS/A IRWAYS/FACILITIES (CONTINUED)	FATAL ACCIDENTS		NONFATAL ACCIDENTS			ALL ACCIDENTS			
		FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CVACE	FACTOR	TOTAL
HET RUNWAY UNMARKED OBSTRUCTIONS HIDDEN HAZARD OTHER AIRWAYS FACILITIES				? 1	. I	1 2 1	<i>?</i> 1	1	1 2 2
SUBTOTAL				3	2	5	3	2	£3
** WEATHER **									
LOW CEILING RAIN FCG SNOW ICING CONDITIONS-INCLUDES SLEET, FREEZING KAIN, EIC TURBULENCE ASSOCIATED WITH CLOUDS AND/OR THUNDERSTORMS OBSTRUCTIONS TO VISION THUNDERSTORM ACTIVITY	1	3 2 1	3 2 1 1	1	2 ? 1	1	1 3 1	5 2 3 1 1	5 3 1 1 1 1
SUBTOTAL	2	6	R	1	6	7	3	12	15
** TERRAIN **									
HIGH DASTRUCTIONS				1		1	1		1
SUBTOTAL				1		I	1		1
** M1SCELLANEOUS **									
UNDETERMINED DIRECT ENTRIES	ı		1	1		t	1		1
SURTOTAL	1		1	1		ι	2		7
GRAND TOTAL	16.	7	23	39	16	55	55	23	7 <i>k</i>
** MISCELLANEOUS ACTS, CONDITIONS **									
CHECKLIST-FAILED TO USE CREW COORDINATION-POOR NOT ALLIGNED WITH RUNHAY/INTENDED LANDING AREA LANDED AT WRONG AIRPORT INATTENTIVE TO FUEL SUPPLY POORLY PLANNED APPROACH IMPROPERLY SECURED ELECTRICAL FAILURE FATIGUE FRACTURE SEPARATION IN FLIGHT FIRE IN ENGINE CORRODED/CORROSION PILOT FATIGUE FUEL EXHAUSTION ICE-HIRDSHIELD IMPROPERLY LOADED AIRCRAFI-WFIGHT-AND/OR CG OIL EXHAUSTION-ENGINE LUBRICATION SYSTEM AIRCRAFT CAME TO REST IN WATER HYDROPLANING ON WET RUNWAY OVERLOAD FAILURE MATERIAL FAILURE PREVIOUS DAMAGE CIRCUIT BREAKER POPPED DOWNWIND DETERIORATED	1 1	1 1 1	1 1 1 1 1 1 1	1 1 1 1 1 1 5	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		1 1 2 5	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 2 1 1 1 1 2 2 1 1 1 2 2 1 1 1 1 3 3 1 4 5 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
EXCESSIVE-WEAR/PLAY ERRATIC JAMMED OVERHEATED FIRE IN EMPENNAGE INTENTIONAL WHEELS UP	ſ			1 1 1	1	2 1 1 1	1 1 1	1	2 1 1 1

.

DIRECT ENTRY CAUSES (CONTINUED)

MISC-DSCNT BLO HOA DRG VOR APCH-REASON NOT DIRMO

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

DIRECT ENTRY CAUSES

KIND OF FLYING BY INJURY INDEX LARGE FIXED WING

rata serious nor Hote

	th of W	, 4 ₀	RECORDS	ACCIDENTS	PERCENT
INSTRUCTIONAL					
DUAL					
SOLO					
CHECK					
TRAINING		1	ı	1	3.33
NONCOMMERC I AL					
PLEASURE	1	2	3	3	10.00
PRACTICE					
BUSINESS	1	2	3	3	10.00
CORPORATE/EXECUTIVE	3	2 8	13	13	43,33
AERIAL SURVEY					
COMPANY FLIGHT					
OTHER					
COMMERC IAL					
AERIAL APPLICATION					
CROP CONTROL RELATED FLIGHT					
FIRE CONTROL	1		1	1	3.33
FIRE CONTROL RELATED FLIGHT		1 .	1	1	3.33
AERIAL MAPPING/PHOTOGRAPHY					
AERIAL ADVERTISING					
POWER AND PIPELINE PATROL					•
FISH SPOTTING					
AIR TAXI-PASSENGER OPERATIONS		2	2	2	6.67
AIR TAXI-CARGO OPERATIONS					
CONSTRUCTION WORK					
SCHEDULED PASSENGER SERVICE					
SCHEDULED CARGO SERVICE					
INTRA-STATE CHARTER PASSG.				•	
INTRA-STATE CHARTER CARGO.					
MILITARY CONTRACT-PASSENGER		1	1	. 1	3.33
MILITARY CONTRACT-CARGO					
CHARTER CARGO-DOMESTIC		1	1	1	3.33
CHARTER PASSG-DOMESTIC					
CHARTER-CARGO-INTERNATIONAL	1		1	1	3,33
CHARTER-PASSG-INTERNATIONAL					
OTHER					

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ER1	r'seal	MIN.	14 AE	
44,	Sex	WIL	40HE	

	é.k	50	W,	4,			
KIND OF FLYING	`		•	•	RECORDS	ACCIDENTS	PERCENT
UNKNOWN/NOT REPORTED				1	1	1	3.33
MISCELLANEOUS							
E XPER IMENTAT ION							
TEST							
DEMONSTRATION							
FERRY			1	1	2	2	6.67
SEARCH AND RESCUE							
AIR SHOW/AIR RACING							
PARACHUTE JUMP							
PARACHUTE JUMP-AIR SHOW							
TOWING GLIDERS						•	
SEED ING CLOUDS							
HUNT ING							
POLICE PATROL							
HIGHWAY TRAFFIC ADVISORY							
ALL OTHER PUBLIC FLYING							
OTHER							
UNKNOWN/NOT REPORTED							
RECORDS	6	1	3	20	30		
ACCIDENTS	6	1	3	20		30	

PERCENT

20.0 3.3 10.0 66.7

KIND OF FLYING BY AIRCRAFT DAMAGE LARGE FIXED WING-1972

				IXED WING-I	912				
		ROTER .	ANTIAL NO.	Ŀ					
	Otes	II. SARY	WING 40	24			RECURDS	ACCIDENTS	PERCENT
INSTRUCTIONAL									
CUAL									
SOLO .									
CHECK									
TRAINING		1					. 1	1	3.33
NONCOMMERCIAL									
PLEASURE		3					3	3	10.00
PRACTICE									
BUSINESS	1	2					3	3	10.00
CORPORATE/EXECUTIVE	5	8					13	13	43.33
AERIAL SURVEY			•						
COMPANY FLIGHT									
OTHER									
COMMERCIAL									
AERIAL APPLICATION									
CROP CONTROL RELATED FLIGHT									
FIRE CONTROL	1						1	1	3.33
FIRE CONTROL RELATED FLIGHT	1						1	1	3.33
AERIAL MAPPING/PHOTOGRAPHY									
AERIAL ADVERTISING									
POWER AND PIPELINE PATROL				W.T					
FISH SPOTTING									
AIR TAXI-PASSENGER OPERATIONS		2					2	2	6.67
AIR TAXI-CARGO OPERATIONS									
CONSTRUCTION WORK									
SCHEDULED PASSENGER SERVICE							•		
SCHEDULED CARGO SERVICE									
INTRA-STATE CHARTER PASSG.									
INTRA-STATE CHARTER CARGO.				. ,					
MILITARY CONTRACT-PASSENGER		1					1	1	3.33
MILITARY CONTRACT-CARGO									
CHARTER CARGO-DOMESTIC		1					1	1	3.33
CHARTER PASSG-DOMESTIC									
CHARTER-CARGO-INTERNATIONAL	. 1						1	1	3.33
CHARTER-PASSG-INTERNATIONAL									
OTHER									

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KIND OF FLYING UNKNOWN/NOT REPORTED MISCELLANEOUS	oest	SUBS	STATION HOME	CORDS	ACCIDENTS	PERCENT 3.33
EXPERIMENTATION TEST DEMONSTRATION						
FERRY SEARCH AND RESCUE AIR SHOW/AIR RACING PARACHUTE JUMP PARACHUTE JUMP-AIR SHOW	1	1		2	2	6.67
TOWING GLIDERS SEEDING CLOUDS HUNTING POLICE PATROL HIGHWAY TRAFFIC ADVISORY ALL OTHER PUBLIC FLYING						
OTHER UNKNOWN/NOT REPORTED				_	,	
RECORDS ACCIDENTS	10	20		30	30	

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INJURIES, ACCIDENTS LARGE FIXED WING

INJURIES

		FATAL	SERIOUS .	MINOR	NONE	UNKNOWN		TOTAĻ
	PILOT	6		2	22			30
	COPILOT DUAL STUDENT CHECK PILOT	6		2	17			25
	FLIGHT ENGINEER NAVIGATOR	1			. 1			2
	CABIN ATTENDANT EXTRA CREW	1			2 2			3 2
	PASSENGERS .	18	6	10	73			107
	TOTAL	32	6	14	117	•	ABOARD	169
1								
136 -	OTHER AIRCRAFT OTHER GROUND							
	GRAND TOTAL	32	6	14	117			169

INVOLVES 30 TOTAL ACCIDENTS INVOLVES 6 FATAL ACCIDENTS

GENERAL AVIATION ACCIDENTS

ROTORCRAFT

TYPE OF ACCIDENT BY INJURY INDEX ROTORCRAFT

	. 5	ى خ	ر می	HOHE				
	KAN.	SEAL	WIN	404		RECORDS	ACCIDENTS	PERCENT
GROUND-WATER LOOP-SWERVE				3		. 3	3	1.22
DRAGGED WINGTIP POD OR FLOAT								
WHEELS-UP LANDING								
WHEELS-DOWN LANDING IN WATER								
GEAR COLLAPSED			1	1		2	2	. 82
GEAR RETRACTED								
HARD LANDING		1	7	13		21	21	8.57
NOSE OVER/DOWN			1			1	1	.41
ROLL OVER		1	4	9		14	14	5.71
OVERSHOOT								
UNDERSHOOT			1			1	1	.41
COLLISION BETWEEN AIRCRAFT								
BOTH IN FLIGHT								
ONE AIRBORNE								
BOTH ON GROUND								
COLLISION WITH GROUND/WATER								
CONTROLLED	2	2	1	7		12	12	4.90
UNCONTROLLED	5	1	5	7		18	18	7.35
COLL IDED WITH								
WIRES/POLES	5	4	5	17		31	31	12.65
TREES	2	3	1	8		14	14	5.71
RESIDENCE/S								
BUILDING/S				1		1	1	•41
FENCE, FENCEPOSTS	1					1	1	.41
ELECTRONIC TOWERS								
RUNHAY OR APPROACH LIGHTS					•			
A IRPORT HAZARD			1			1	1	•41
ANIMALS								
CROP				1		1	1	.41
FLAGMAN LOADER								•
DITCHES								
SNOWBANK								
PARKED AIRCRAFT				1		1	1	.41
AUTOMOB I LE				1		1	1	•41
DIRT BANK								
DBJECT	2		2	6		10	10	4.08

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		~	ంస్త్ర	, q	. &			
·	44	برا چور	, n'	708	4,	BECOODS	ACCIDENTS	DERCENT
TYPE OF ACCIDENT		-	,	`		KECURDS	ACCIDENTS	PERCENT
BIRD STRIKE								
STALL		1				1	1	•41
SPIN								
SPIRAL								
MUSH	1			3		4	4	1.63
FIRE OR EXPLOSION								
IN FLIGHT				2		2	2	.82
ON GROUND				1.		1	1	•41
AIRFRAME FAILURE								
IN FLIGHT	1	1	1			3	3	1.22
ON GROUND				1		1	1	-41
ENGINE TEARAWAY								
ENGINE FAILURE OR MALFUNCTION	. 3	5	13	43		64	64	26.12
PROPELLER/ROTOR FAILURE								
PROPELLER	1					1	1	•41
TAIL ROTOR	2			5		. 7	7	2.86
MAIN ROTOR	3	2	1	2		В	8	3.27
PROP ROTOR ACONT TO PERSON	5	2				7	7	2,86
JET INTAKE/EXH ACONT TO PERS								
PROPELLER/JET/ROTOR BLAST				1		. 1	1	.41
TURBULENCE								
HAIL DAMAGE TO AIRCRAFT								
LIGHTNING STRIKE								
EVASIVE MANEUVER								
UNCONTROLLED ALT DEVIATION								
DITCHING								
MISSING ACFT NOT RECOVERED								
MISCELLANEOUS/OTHER	3	3	2	4		12	12	4.90
UNDETERMINED								
RECORDS	36	26	46	137		. 245		
ACCIDENTS	36	26	46	137			245	
PERCENT	14.7	10.6	18.8	55.9				

PHASE OF DPERATION BY AIRCRAFT DAMAGE ROTORCRAFT

			oteo.	ANTIA	.ن. +					
		DESTA	ناوي	, WING	HOWL			RECORDS	ACC IDENTS	PERCENT
STATIC										
STARTING ENGINE/S			1					1	1	.41
IDLING ENGINE/S			1					1	1	.41
ENGINE RUNUP			1		1			2	2	.82
IDLING ROTORS			3	3	1			7	7	2.86
PARKED-ENGINES NOT OPERATING		. 1						1	. 1	41
OTHER			1					1	1	.41
TAXI										
TO TAKEOFF										
FROM LANDING										
OTHER										
GROUND TAX1 TO TAKEOFF										
GROUND TAX1 FROM LANDING										
GROUND TAXI, OTHER										
AERIAL TAXI TO TAKEOFF			1					1	1	.41
AERIAL TAXI TO/FROM LANDING			3					3	3	1.22
AERIAL TAXI, OTHER		ì	2					3	3	1.22
TAKEOFF										
RUN			2					2	2	.82
INITIAL CLIMB		1	9	1				11	11	4.49
VERT_ICAL		3	10		1 "-"			14	14	5.71
RUNN 1NG		1	3					4	4	1.63
ABORTED										
ABORTED	٠٠.									
ABORTED			2					2	2	.82
OTHER		2						-2	2	.82
INFLIGHT										
CLIMB TO CRUISE										
NORMAL CRUISE		18	39					57	57	23.27
DESCEND ING			2					2	2	.82
HOLD ING										
HOVERING		5	15					20	20	8.16
POWER-ON DESCENT			2					2	,	.82
AUTOROTATIVE DESCENT	•		1					1	1	.41
ACROBATICS										
BUZZING										

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•	DEST	^{FO} LFD	TANTI	DR MONE						
OPERATIONAL PHASE	Offs.	SUB	WIL	HOL			RECORDS	ACCIDENTS	PERCENT	
UNCONTROLLED DESCENT	7	2					9	. 9	3.67	
EMERGENCY DESCENT										
LOW PASS	1	2					3	3	1.27	
OTHER	2	6					8	. 8	3.27	
EN ROUTE TO TREAT CROP		3					3	3	1.22	
EN ROUTE TO RELOADING AREA	1	2					3	3	1.22	
SURVEY FIELD/AREA		1					1	1	.41	
STARTING SWATH RUN		2					2	2	.82	
SWATH RUN	6	11					17	17	6.94	
FLAREOUT FOR SWATH RUN	1						1	1	•41	
PULLUP FROM SWATH RUN	1	1					2	. 2	.82	
PROCEDURE TURNAROUND	1	4					5	5	2.04	
CLEANUP SWATH										
MANEUVER TO AVOID DESTRUCTION										
RETURN TO STRIP										
LANDING										
TRAFFIC PATTERN-CIRCLING	1	2					3	3	1.22	
FINAL APPROACH	3	5					В	. 8	3.27	
INITIAL APPROACH										*0 :
FINAL APPROACH										
LEVEL OFF/TOUCHDOWN	1	3					4	4	1.63	
ROLL										
ROLL-ON/RUN-ON	1	1					2	2	.82	
POWER-ON LANDING	5	11					16	16	6.53	
POWER-OFF AUTOROTATIVE LDG	1	16					17	. 17	6.94	
GO-AROUND	1						1	1	.41	
HISSED APPROACH										
OTHER		3					3	3	1.22	
			,				245			
RECORDS	65		4	3			245	245		i
ACCIDENTS		173	4	3				745		,
PERCENT	26.5	10.6	1.6	1.2						

ROTORCRAFT EXCLUDES RECORDS WHICH HAVE NO CODED CAUSE

INVOLVES 241 TOTAL ACCIDENTS
INVOLVES 36 FATAL ACCIDENTS

	FAT	AL ACCID	ENT S	MONEAT	TAL ACCI	DENTS	ALL ACCIDENTS		
AROAD CAUSE/FACTOR	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TNTAL*	CAUSE	FACTOR	TOTAL*
PILOT	22 61 . 11	3 8.33	22 61.11	148 72.20	18 8.78	150 73.17	170 70.54	21 8.71	172 71.37
PERSONNEL	7 19•44	3 8.33	8 22•22	23 11•22	6 2.93	29 14•15	30 12.45	9 3.73	37 15•35
AIRFRAME	.00	• 00	.00	•00	• 02	•00	•00	•00	•00
LANDING GEAR	•00	•00	• 00	1 • 49	• 00	1 • 49	1 •41	.00	1.41
POHERPLANT	3 8.33	• 00	3 8.33	35 17•07	2 •98	37 18.05	38 15.77	2 •83	40 16.60
SYSTEMS	•00	• 00	• 00	3 1.46	• 00	3 1.46	3 1.24	.00	3 1.24
INSTRUMENTS/EQUIPMENT AND ACCESSORIFS	.00	• 00	-00	1 • 49	1 . 49	2 •98	1 .41	1 .41	.83
ROTORCRAFT	7 19•44	1 2.78	7 19•44	24 11.71	2 •98	26 12.68	31 12.86	3 1.24	33 13.69
AIRPORTS/AIRWAYS/FACILITIES	.00	• 00	• 00	2 •98	3 1.46	5 2 • 4 4	2 .83	3 1.24	5 2.07
WEATHER	2 5•56	7 19•44	9 25•00	8 3.90	30 14.63	37 18.05	10 4.15	37 15.35	46 19•09
TERRAIN	2 5.56	7 19.44	9 25•00	32 15.61	42 20•49	74 36•10	34 14•11	49 20.33	83 34 •44
MISCELLANEOUS	1 2.78	• 00	1 2.78	12 5.85	1 . 49	13 6.34	13 5.39	1 •4]	14 5.81
UNDETERMINED	2 5•56	• 00	2 5•56	1 • 49	• 00	1 •49	3 1.24	.00	3 1.24

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

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



ROTORCRAFT EXCLUDES RECORDS WHICH HAVE NO CODED CAUSE

INVOLVES 241 TOTAL ACCIDENTS
INVOLVES 36 FATAL ACCIDENTS

	FATAL ACCIDENTS		NONFATAL ACCIDENTS			ALL ACCIDENTS			
OFTAILED CAUSE/FACTOR	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
** P!LOT **									
PILOT IN COMMAND ATTEMPTED OPERATION W/KNOWN DEFICIENCIES IN FOUIPMENT ATTEMPTED OPERATION BEYOND EXPERIENCE/ABILITY LEVEL CONTINUED VER FLIGHT INTO ADVERSE WEATHER COMDITIONS DIVERTED ATTEMPTION FROM OPERATION OF AIRCRAFT FAILED TO SEE AND AVOID OBJECTS OR OBSTRUCTIONS FAILED TO OPTAIN/MAINTAIN FLYING SPEED FAILED TO MAINTAIN ADEQUATE ROTTOR RPM FAILED TO USE OR INCORRECTLY USED MISC EQUIPMENT FAILED TO THE OW APPROVED PROCEDURES, DIRECTIVES FTC IMPROPER OPERATION OF POWERPLANT + POWERPLANT CONTROLS IMPROPER OPERATION OF FLIGHT CONTROLS IMPROPER LEVEL OFF IMPROPER IN-FLIGHT DECISIONS OR PLANNING	5 1 1 1 3	ì	4 1 5 1 1 3	1 2 2 3 27 7 15 2 5 7 26 8	1 1 2	2 3 2 5 27 7 16 3 5 7 26 8	1 2 6 3 7 16 3 5 8 29 8	1 1 3	2 3 6 6 32 7 17 4 5 8 29
IMPROPER COMPENSATION FOR WIND COMBITIONS INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING INADEQUATE SUPERVISION OF FLIGHT LACK OF FAMILIARITY WITH AIRCRAFT MISMANAGEMENT OF FUEL	3	?	5	7 25 12	2 1 5	7 27 13 5	7 28 12	4 1 5	7 32 13 5
EXERCISED POOR JUNGMENT OPERATED CARFLESSLY SELECTED UNSUITABLE TERRAIN SPONTANEOUS-IMPROPER ACTION MISJUDGED DISTANCE, SPEED, AND ALTITUDE	1 1 1) 1 1	3 1 6 7	1 1	6 3	7 7 2	1	5 3 7 3
MISJUDGED DISTANCE AND ALTITUDE MISJUDGED SPEED AND ALTITUDE MISJUDGED SPEED MISJUDGED ALTITUDE AND CLEARANCE	1	٠	1	3 3	1	3 3 1 2	3 3 8	1	3 3 1 3
MISJUDGED ALTITUDE MISJUDGED CLEARANCE IMPROPER RECOVERY FROM ROUNCED LANDING SPATIAL DISCRIENTATION LEFT AIRCRAFT UNATTENDED ENGINE RUNNING	1		1	1		9 1 1	10 1 1		10 1 1 1
FAILED TO MAINTAIN DIRECTIONAL CONTROL SELECTED WRONG RUMWAY RELATIVE TO EXISTING WIND FAILED TO AGORT TAKEOFF SUBTOTAL	1	3	1 29	1 1 215	19	4 1 1	1 1	21	5 1 1
DUAL STUDENT FAILED TO MAINTAIN ADEQUATE ROTOR RPM	26 .	***	7.4	215	18	233	241	?1	262
FAILED TO USE OR INCORRECTLY USED MISC FOUIPMENT IMPROPER OPERATION OF POWERPLANT + POWERPLANT CONTROLS IMPROPER OPERATION OF FLIGHT CONTROLS FAILURE TO RELINOUISH CONTROL SPONTANEOUS-IMPROPER ACTION MISJUDGED DISTANCE AND ALTITUDE				1 2 7 1 1		1 2 7 1 1	1 7 1 1		1 2 7 1 1
SUBTOTAL				15		15	15		15
CHECK PILOT FAILED TO MAINTAIN ADEQUATE! ROTGR RPM IMPROPER LEVEL OFF INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING INADEQUATE SUPERVISION OF FLIGHT MISUNDERSTANDING OF ORDERS OR INSTRUCTIONS FAILED TO INITIATE GO-AROUND				I 1	1 1 1	1 1 1 1 1	1	1 1 1	1 1 1 1 1
SUBTOTAL				3	3	6	3	3	6

** PERSONNEL **

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PERSONNEL (CONTINUED)	FATAL ACCIDENTS				TAL ACCI		ALL ACCIDENTS		
	CALICE	FACTOR	TOTAL	CALICE	FACTOR	TOTAL	CAUCE	E46700	TOTAL
	CAUSE					7-7-		FACTOR	
FLIGHT INSTRUCTOR									
MAINTENANCE, SERVICING, INSPECTION IMPROPER MAINTENANCE(OWNER PERSONNEL)	1		,			2	3		•
INADEQUATE MAINTENANCE AND INSPECTION	2		. 1	12	1	2 13	;4	1	3 15
OPERATIONAL SUPERVISORY PERSONNEL INADEQUATE FLIGHT TRAINING-PROCEDURES					1	1		1	1
INADEDUATE GROUND TRAINING-PROCEDURES FAILURE TO PROVIDE ADEO DIRECTIVES, MANUALS, EQUIPHENT DEFICIENCY, COMPANY MAINTAINED EOMT, SERV, REGULATIOMS	1		. 1		1 1 2	1 1 2	1	1 1 2	2 1 2
WEATHER PERSONNEL TRAFFIC CONTROL PERSONNEL AIRPORT SUPERVISORY PERSONNEL									
AIRWAYS FACILITIES PERSONNEL PRODUCTION-DESIGN-PERSONNEL SUBSTANDARD GUALITY CONTROL				1		1	1		1
OTHER MISCELLANEOUS-PERSONNFL				2		2	2		2
PILOT OF OTHER AIRCRAFT SPECTATOR					1	1		1	1
GROUND CREWMAN	1		1	-		_	1		1
PASSENGER OTHER	?	1 2	3 2	5	1	5 1	7	1	8 3
DIRECT ENTRIES THIRD PILOT				1		1	1		1
FLIGHT ENGINEER OTHER FLIGHT PERSONNEL				1		1	1		1
DISPATCHING				•		•	•		•
SUBTOTAL	8	3	11	24	8	32	3.2	11	43
±# A[RFRAME ##									
WINGS FUSEL4GE									
LANDING GEAR SKID ASSEMBLY				,			,		,
FLIGHT CONTROL SURFACES				1		1	1		1
SUBTOTAL				1		í	ì		1
** POWERPLANT **									
ENGINE STRUCTURE MASTER AND CONNECTING RODS				3		3	3		3
PISTON, PISTON RINGS VALVE ASSEMBLIES				2		2	2.		2
OTHER IGNITION SYSTEM				3. 1		3 1	3		3 1
SPARK PLUG				1		1	1		1
FUEL SYSTEM LINES AND FITTINGS				3		. 3	3		3
FILTERS, STRAINERS, SCREENS CARBURETOR				1		1	1		1 1
VENTS, DRAINS, TANK CAPS RAM AIR ASSEMBLY	1		1	i		ì	i		1 1
OTHER LURRICATING SYSTEM	,			2		2	2		2
CODLING SYSTEM									
OTHER PROPELLER AND ACCESSORIES				1		1	1		1
ALADES EXHAUST SYSTEM	. 1		1.	1		1	2		2
OTHER ENGINE ACCESSORIES				2		2	2		2
STARTERS ENGINE CONTROLS-COCKPIT				1		1	1		1
THROTTLE-POWER LEVER ASSEMBLIES POWERPLANT-INSTRUMENTS				2		2	7		2
FUEL QUANTITY GAUGE					2	2		2	2
MISCELLANEOUS POWERPLANT FAILURE FOR UNDETERMINED REASONS	1		1	8		8	9		9
COMPRESSOR STALLS	1		. 1				1		1

	CAUSE/FACT	THE TARLE								
POWERPLANT (CONTINUED)	FAT	FATAL ACCIDENTS			TAL ACCI		ALL ACCIDENTS			
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	T () T & L	CAUSE	FACTOR	JAINT	
REDUCTION GEAR ASSEMBLY COMPRESSOR ASSEMBLY RLADE, COMPRESSOR ROTOR COMBUSTION ASSEMBLY TURBINE ASSEMBLY WHEEL, TURBINE	. 1		1	2		?	3		3	
OTHER ACCESSORY DRIVE ASSEMBLY LURRICATING SYSTEM FUEL SYSTEM SAFETY SYSTEM IGNITION SYSTEM TIRQUEMETER AIR 9LEED EXHAUST SYSTEM THRUSEN SYSTEM THRUSEN SYSTEM THRUSEN SYSTEM				ı		i	,		ì	
PROPELLER SYSTEM CONSTANT SPEED DRIVE PINER LEVER PROPELLER LEVER REVERSE THRUST LEVER ENGINE INDICATING EQUIPMENT ENGINE INSTALLATION										
SUBTOTAL	5		5	37	2	39	42	2	44	
** SYSTEMS **										
ELFCTRICAL SYSTEM RELAYS AND WIRING HYDRAULIC SYSTEM FLIGHT CONTROL SYSTEMS FLIGHT CONTROL SYSTEMS FLIGHT CONTROL BOOST SYSTEM (HYDRAULIC) ANTI-ICING, DE-ICING SYSTEMS AIR CONDITION, MEATING AND PRESSURIZATION AUTO PILOT FIRE WARNING SYSTEM FIRE EXTINGUISHER SYSTEM OXYGEN SYSTEM OTHER SYSTEMS				2		?	2		2	
SUBTOTAL				. 3		3	٦		3	
** INSTRUMENTS/EQUIPMENT AND ACCESSORIES **										
FLIGHT AND NAVIGATION INSTRUMENTS AIRSPEED COMMUNICATIONS AND NAVIGATION EQUIPMENT					1	1		1	1	
MISCELLANEOUS EQUIPMENT OTHER				1		1	1		ì	
SUBTOTAL				. 1	1	2	j	1	7	
** KOTOKCKAFT **										
ROTOR ASSEMBLIES MAIN ROTOR BLADES TAIL ROTOR BLADES MAIN ROTOR HEAD ASSEMBLIES UNIVERSAL JOINTS, COUPLINGS OTHER TRANSMISSION ROTOR DRIVE SYSTEM ENGINE ORIVE SHAFT MAIN ROTOR ORIVE SHAFT MAIN ROTOR ORIVE SHAFT MAIN ROTOR GEAR BOX TAIL ROTOR GEAK BOX OTHER	1 1 2 3	1	3	5 1 1 2 1 2 1 3	1	5 1 1 1 2 1 2 1 3	6 1 1 3 2 1 2	1, 2	7 3 1 1 1 2 2 1 2 1 3	
FLIGHT CONTROL SYSTEMS CYCLIC PITCH CONTROL SYSTEM COLLECTIVE PITCH CONTROL SYSTEM TAIL ROTOR PITCH CONTROL SYSTEM OTHER	1		1	4 3 1	1	4 3 1 1	5 3 1 1	I	5 3 3 2	

ROTORCRAFT (CONTINUED)	FATAL ACCIDENTS		NONFATAL ACCIDENTS			ALL ACCIDENTS			
	CAUSE	FACTOR		CAUSE	FACTOR	TOTAL	CAUSF	FACTOR	TOTAL
MISCELLANEOUS UNITS AND ASSEMBLIES TAIL BOOMS/PYLONS/CONES OTHER				1 1		1	1		. <u>i</u>
SUBTOTAL	7	2	9	26	2	28	33	4	37
** AIRPORTS/AIRWAYS/FACILITIFS **									
AIRPORT FACILITIES AIRPORT CONDITIONS SOFT SHOULDERS (FUNWAY) OTHER AIRWAYS FACILITIES				?	2	2 3	?	2	2 3
SURTOTAL				2	. 3	. 5	2	3	5
** WEATHER **									
LOW CEILING RAIN FOG SNOW ICING CONDITIONS-INCLUDES SLEET, FREEZING RAIN, FYC		3 1 2 1	3 1 2	1	4 3 4	4 4 4	1	7 4 6 1	7 5 6 1 1
COMDITIONS CONDUCIVE TO CARR/INDUCTION SYSTEM ICING UNFAVORABLE WIND CONDITIONS SUDDEN WINDSHIFT TURBULENCE IN FLIGHT, CLEAR AIR	1	1	. 1 1	2	1 я 1	3 9 1	3 I	1 9 1	10 1 1
TOWNDRAFTS, PPRAFTS HIGH TEMPERATURE OBSTRUCTIONS TO VISION HIGH DENSITY ALTITUDE	i	1 2 1	1 1 2 1	3	2 1 1 10	5 1 1	1	2 2 3 11	6 2 3 12
OTHER					l	1		1	1
SUBTOTAL	3	12	15	9	36	45	12	48	60
** TERRAIN ** WET, SOFT GROUND				. 5	1	6	5	1	6
SNOW-COVERED HIGH VEGETATION ROUGH/JUNEVEN ROUGH WATER HIGH OBSTRUCTIONS SANDY	1	1	2 7	8 1 1 1	1 2 6 30	1 2 14 1 41 1	9 1 12 1	1 2 7 36	1 2 16 1 48 1
OTHER SUBTOTAL	2	7	. 9	6 32	3 43	7 75	6 34	3 50	84
** MISCELLANEOUS ***				34					
PROPYJET/ROTOR BLAST EVASIVE MANEUVER YN AVOID COLLISION FORFION ORJECT DAMAGE SMOKE IN COCKPIT FOREIGN MATERIAL AFFECTING NORMAL OPERATIONS	1		1	1 4 4	1	1 4 4 1 3	1 4 4	1	1 4 1 4 3
UNDETERM INED SUBTOTAL	. 3		2	1 13	1	1 14	3 16	I	17
30010141	,		,	13	1	17	10		
GRAND TOTAL	54	27	81	381	117	498	435	144	579
** MISCELLANERUS ACTS, CONDITIONS **									
ANTI-ICING/DEICING EQUIP-IMPROPER OPER OF/FAILED TO USE CREW COORDINATION-POOR IJMWARKANTED LOW FLYING INATTENTIVE TO FUEL SUPPLY MISCALCULATED FUEL CONSUMPTION	1		1	2 2 4 5	1 1 1	2 1 3 5	3 4 5	1 1 1	3 1 4 5
JETTISONED LOAD IMPROPERLY SECURED	1		1	3	3	3 3	4	3	3

MISCELLANEOUS	ACTS.	CONDITIONS	(CONTINUED)

MISCELLANEOUS ACTS, CONDITIONS (CONTINUED)		FAT	AL ACCID	ENTS	NONEA	TAL ACCI	DENTS	ALL ACCIDENTS			
		CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	THTAL	CAUSE	FACTOR	TOTAL	
	ROGUS PART FATIGUE FRACTURE	3		3	10		1	1		1	
	HYDRAULIC FAILURE	2		3	10	1	10	13	1	13	
	WRONG PART				1		i	1	•	i	
	IMPROPER ALIGNMENT/ADJUSTMENT				1		1	1		1	
	FAILURE OF TWO OR MORE ENGINES		1	1					1	1	
	SEPARATION IN FLIGHT FIRE IN ENGINE		6	6	2	3 1	3	-	9	9	
	LATERAL IMBALANCE				2	ı	2	2	1	3 2	
	CORRODED/CORROSION				1		1	í		í	
	PILOT FATIGUE		1	1	1		1	,	1	ì	
	FUEL EXHAUSTION				16		16	16	•	16	
	ICE-ENGINE				1		1	1		1	
	ICE-CARBURETOR	1		1	?		2	3		3	
	IMPROPERLY LOADED AIRCRAFT-WFIGHT-AND/OR CG				3		3	ż		3	
	WHITEOUT SUNGLARE		1	1		2	2		. 1	5 1	
	LACK OF LUBRICATION-SPECIFIC PART, NOT SYSTEM				1	,	í	1	,	î	
	SIMULATED CONDITIONS				2	12	14	2	17	14	
	WATER IN FUEL				4		4	4		4	
	AIRCRAFT CAME TO REST IN WATER		5	5	_	14	14	_	19	19	
	MISSING OVERLOAD FAILURE	3		3	5	5	2 5	3	. 5	,	
	MATERIAL FAILURE	í		í	19		19	20		20	
	FUEL STARVATION	•		•	6		6	6		ė	
	UNAPPROVED MODIFICATION				2		2.	7		2	
•	PREVIOUS DAMAGE	1		1		1	1	. 1	1	2	
	LEAK/LEAKA GE				. 2		?	2	_	2	
	DOWNWIND UNDER TORQUED		1	1	1	4	4	1	5	5	
	GROUND RESONANCE				1		:	,		1	
	RENT				i		i.	î		i .	
	BURNED				i		1	}		1	
	CHAFFED ,				2		2	2		2	
	DISCONNECTED	1 ·		1.	7		2			3	
	EXCESSIVE-WEAR/PLAY				2	_	2.	7		2	
	ERRATIC GROUNDED					3	3	1	3	3	
	IMPROPERLY INSTALLED	1		1	4		4	. ,		,	
	JAMMED	•		-	1		i	1		1	
	OBSTRUCTED				1		1	-1.		1	
	OVERHEATED				1	1	2	1	1	2	
	SHEARED STUCK				1		1	1		1	
	EXCESSIVE TEMPERATURE	1		1	,		1	,		1	
	VIBRATION, EXCESSIVE	1		•	1	1	2	i	1	ż	
	CONGESTED RAMP/TAXIWAY				1	1	2	i	1	2	
	DEMOSITTE TON DAG				1		1	1.		1	

DIRECT ENTRY CAUSES

PERSONNEL-INADEQUATE SUPERVISION OF WORK CREW.

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

KIND OF FLYING BY INJURY INDEX ROTORCRAFT

FATA'SERIOUS NIHOR NOHE

		`	•	4	~		RECORDS	ACCIDENTS	PERCENT
INSTRUCT IONAL									
DUAL				4	13		17	17	6.94
SOLO									
CHECK					2		2	2	.82
TRAINING			1	1	1		3	3	1.22
NONCOMMERC I AL									
PLEASURE		6	4	3	18		31	31	12.65
PRACTICE	۲.		1	3	1		5	5	2.04
BUSINESS		2,		3	9		14	14	5.71
CORPORATE/EXECUTIVE		1	2	1	2		6	6	2.45
AERIAL SURVEY					2		2	2	.82
COMPANY FLIGHT									
OTHER									
COMMERC IAL									
AERIAL APPLICATION		2,	2	5	21		30	30	12.24
CROP CONTROL RELATED FLIGHT		1	3	3	9		16	16	6.53
FIRE CONTROL				2	3		5	. 5	2.04
FIRE CONTROL RELATED FLIGHT		2		1	2		5	5	2.04
AERIAL MAPPING/PHOTOGRAPHY		1			1		2	2	.82
AERIAL ADVERTISING					1		1	1	,41
POWER AND PIPELINE PATROL			2		3		5	5	2.04
FISH SPOTTING									
AIR TAXI-PASSENGER OPERATIONS		6	2	4	14		26	26	10.61
AIR TAXI-CARGO OPERATIONS				2	3		5	5	2.04
CONSTRUCTION WORK		2			1		3	3	1.22
SCHEDULED PASSENGER SERVICE						•			
SCHEDULED CARGO SERVICE									
INTRA-STATE CHARTER PASSG.									
INTRA-STATE CHARTER CARGO.									
MILITARY CONTRACT-PASSENGER									
MILITARY CONTRACT-CARGO									
CHARTER CARGO-DOMESTIC				1	ı		2	2	.82
CHARTER PASSG-DOMESTIC		1		3	ι		5	5	2.04
CHARTER-CARGO-INTERNATIONAL									
CHARTER-PASSG-INTERNATIONAL									
OTHER		2	1		4		7	7	2.86

KIND OF FLYING UNKNOWN/NOT REPORTED	ental	SERI	WIN	404	c	RECORDS	ACCIDENTS	PERCENT
MISCELLANEOUS								
EXPERIMENTATION								
TEST	2	2		3		7	7	2.86
DEMONSTRATION	1		1	1		3	3	1.22
FERRY	3	1		5		9	9	3.67
SEARCH AND RESCUE	1	1				2	2	.82
AIR SHOW/AIR RACING			1			1	1	.41
PARACHUTE JUMP				1.		1	1	-41
PARACHUTE JUMP-AIR SHOW								
TOWING GLIDERS						•		
SEEDING CLOUDS								
HUNT ING		1				1	1	-41
POLICE PATROL		ì	5	9		15	. 15	6.12
HIGHWAY TRAFFIC ADVISORY			1	1		2	2	.82
ALL OTHER PUBLIC FLYING	3	2	1	5		11	11	4.49
OTHER			1			1	1	.41
UNKNOWN/NOT REPORTED								
RECORDS	36	26	46	137		245		
ACCIDENTS	36	26	46	137			245	
PERCENT	14.7 10	0.6	18.8	55.9				

KIND OF FLYING BY AIRCRAFT DAMAGE ROTORCRAFT-1972

			160	AIIA	.~								
	þ	STA	SUBS	ANTIA	740K	<u>K</u>				RECURDS	ACCIDENTS	PERCENT	
INSTRUCTIONAL													
CUAL	1	i	16							17	17	6.94	
SOLO													
CHECK			2							2	2	•82	
TRAINING			3							3	3	1.22	
NCNCOMMERCIAL													
PLEASURE		8	22	1						31	31	12.65	
PRACTICE	1	1	4							5	5	2.04	
BUSINESS	i	2 .	12							14	14	5.71	
CORPORATE/EXECUTIVE	:	3	s		1					6	6	2.45	
AERIAL SURVEY			2							2	2	.82	
COMPANY FLIGHT													
OTHER													
COMMERCIAL													
AERIAL APPLICATION	•	9	21							30	30	12.24	
CROP CONTROL RELATED FLIGHT		4	11	1						16	16	6.53	
FIRE CONTROL	1	1	4							5	5	2.04	
FIRE CONTROL RELATED FLIGHT	:	3	2							5	5	2.04	
AERIAL MAPPING/PHOTOGRAPHY			1	i						2	2	.82	
AERIAL ADVERTISING	1	1								1	1	•41	
POWER AND PIPELINE PATROL	:	1	4							5	5	2.04	
FISH SPOTTING						57	7						
AIR TAXI-PASSENGER OPERATIONS	,	4	18		2					26	26	10.61	
AIR TAXI-CARGO OPERATIONS	1	1	4							5	5	2.04	
CONSTRUCTION WORK		2	1							3	3	1.22	
SCHEDULED PASSENGER SERVICE													
SCHEDULED CARGO SERVICE													
INTRA-STATE CHARTER PASSO													
INTRA-STATE CHARTER CARGO.													
MILITARY CONTRACT-PASSENGER													
MILITARY CONTRACT-CARGO													
CHARTER CARGO-DOMESTIC			2							2	2	.82	
CHARTER PASSG-DOMESTIC	1	1	4							5	5	2.04	
CHARTER-CARGO-INTERNATIONAL													
CHARTER-PASSG-INTERNATIONAL	٠												
OTHER		2	5							7	7	2.86	

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KIND OF FLYING	DESTROYERS SUBSTRING ROWE	RECORDS	ACCIDENTS	PERCENT
UNKNOWN/NOT REPORTED				
MISCELLANEOUS				
EXPERIMENTATION				
TEST	3 3 1	7	7	2.86
CEMONSTRATION	2 1	. 3	3	1.22
FERRY	3 6	9	9	3.67
SEARCH AND RESCUE	1 1	2	2	•82
AIR SHOW/AIR RACING	1	1	1	•41
PARACHUTE JUMP	1	. 1	1	•41
PARACHUTE JUMP-AIR SHOW				
TOWING GLIDERS				
SEEDING CLOUDS				
HUNTING	1	1	1	•41
POLICE PATROL	4 11	15	15	6.12
HIGHWAY TRAFFIC ADVISORY	2	۷	2	. 92
ALL OTHER PUBLIC FLYING	5 6	11	11	4.49
OTHER	1	1	1	•41
UNKNOWN/NOT REPORTED				
				ij
RECORDS	65 173 4 3	245		
ACCIDENTS	65 173 4 3		245	
PERCENT	26.5 70.6 1.6 1.2			

INJURIES, ACCIDENTS ROTORCRAFT

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
	PILOT	29	20	40	156			245
	COPILOT	1		1 3	8			10
	DUAL STUDENT			3	13 2			16 2
	CHECK PILOT FLIGHT ENGINEER NAVIGATOR		1 .		2			1
	CABIN ATTENDANT				1			1
	EXTRA CREW		1	5	12			18
	PASSENGERS	34	18	39	124			215
1								
151 -	TOTAL	64	40	<u>;</u> 88	316		A BO AR D	508
	OTHER AIRCRAFT OTHER GROUND	2		1				3
	STILL GROUND	2		•				,
	GRAND TOTAL	66	40	89	316			511

INVOLVES 245 TOTAL ACCIDENTS INVOLVES 36 FATAL ACCIDENTS

er t

GENERAL AVIATION ACCIDENTS

GLIDER AIRCRAFT

TYPE OF ACCIDENT BY INJURY INDEX GLIDER

	en a serous MAO TO HE	RECORDS	ACCIDENTS	PERCENT
GROUND-WATER LOOP-SWERVE	2	2	2	4.00
DRAGGED WINGTIP POD OR FLOAT				
WHEELS-UP LANDING				
WHEELS-DOWN LANDING IN WATER				
GEAR COLLAPSED	1	1	1	2.00
GEAR RETRACTED	,			
HARD LANDING	2	2	2	4.00
NOSE OVER/DOWN				
ROLL OVER				
OVERSHODT	1	1	1	2.00
UNDERSHOOT	1 5	6	6	12.00
COLLISION BETHEEN AIRCRAFT				
BOTH IN FLIGHT	. 1	1	1	2.00
ONE AIRBORNE				
BOTH ON GROUND				
COLLISION WITH GROUND/WATER				
CONTROLLED	1 ,4	5	5	10.00
UNCONTROLLED	. 1	1	1	2.00
COLLIDED WITH				
WIRES/POLES	4	4	4	8.00
TREES	1 6	.7	7	14.00
RES IDENCE/S				
BUILDING/S				
FENCE, FENCEPOSTS	1	1	1	2.00
ELECTRONIC TOWERS				
RUNWAY OR APPROACH LIGHTS				
AIRPORT HAZARD				
ANIMALS				
CROP				
FLAGMAN LOADER			•	
DITCHES				
SNOWBANK				
PARKED AIRCRAFT	. 1	1	1	2.00
AUTOMOBILE				
DIRT BANK	1	. 1	1	2.00
DBJECT	. 1 2	3	3	6.00

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		TALSER	00,40	Do We				
TYPE OF ACCIDENT BIRD STRIKE	4Y	S.V	W	40		RECORDS	ACCIDENTS	PERCENT
STALL	2	. z	. 2			6	. 6	12.00
SPIN	4		_			5	5	10.00
SPIRAL								
MUSH								
FIRE OR EXPLOSION								
IN FLIGHT								
ON GROUND								
AIRFRAME FAILURE								
IN FLIGHT		1	1		•	2	2	4.00
ON GROUND								
ENGINE TEARAWAY								
ENGINE FAILURE OR MALFUNCTION								
PROPELLER/ROTOR FAILURE								
PROPELLER								
TAIL ROTOR								
MAIN ROTOR								
PROP ROTOR ACONT TO PERSON								
JET INTAKE/EXH ACONT 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	. 1	l				1	1	2.00
UNDETERMINED			•					
RECORDS	7	7	8	28		50		
ACCIDENTS		 7 7	8	28		30	50	
DERCENT		. 16.0					,,,	

PHASE OF OPERATION BY AIRCRAFT DAMAGE GLIDER

DESROYED ANTIAL NOW

RECORDS ACCIDENTS PERCENT

STATIC						
STARTING ENGINE/S						
IDLING ENGINE/S						
ENGINE RUNUP					,	
IDLING ROTORS			,			
PARKED-ENGINES NOT OPERATING						
OTHER						
TAX1						
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						
IAKEOFF						
RUN						
INITIAL CLIMB	2	1		3	3	6.00
VERTICAL						
RUNN ING						
ABORTED						
ABORTED						
ABORTED						
OTHER						
INFLIGHT						
CLIMB TO CRUISE						
NORMAL CRUISE	2	1		3	3	6.00
DESCEND ING		1		1	1	2.00
HOLD ING						
HOVERING						
POWER-ON DESCENT						
AUTOROTATIVE DESCENT						
ACROBATICS						
BUZZING						

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-	.0	SUBSTANTIA NOW					
OPERATIONAL PHASE	OESTR	CIBSE WIND FOR	•		RECORDS	ACCIDENTS	PERCENT
UNCONTROLLED DESCENT	•	7 ()					
EMERGENCY DESCENT							
LOW PASS							
OTHER	3	2			5	5	10.00
EN ROUTE TO TREAT CROP							
EN ROUTE TO RELOADING AREA							
SURVEY FIELD/AREA							
STARTING SWATH RUN							
SWATH RUN							
FLAREOUT FOR SWATH RUN							
PULLUP FROM SWATH RUN							
PROCEDURE TURN AROUND							
CLEANUP SWATH							
MANEUVER TO AVOID OBSTRUCTION							
RETURN TO STRIP							
LANDING							
TRAFFIC PATTERN-CIRCLING		1		•	1	1	2.00
FINAL APPROACH	2	15			17	17	34.00
INITIAL APPROACH							
FINAL APPROACH							
LEVEL OFF/TOUCHDOWN		16			16	16	32.00
ROLL		3			3	3	6.00
ROLL-ON/RUN-ON							
POWER-ON LANDING							
POWER-OFF AUTOROTATIVE LDG							
GO-AROUND							
MISSED APPROACH							
OTHER		1			1	1	2.00
RECORDS	9	41			50		
ACC IDENTS	9	41				50	
PERCENT	18.0 82						

GLIDER EXCLUDES RECORDS WHICH HAVE NO CODED CAUSE

INVOLVES 50 TOTAL ACCIDENTS
INVOLVES 7 FATAL ACCIDENTS

	FAT	AL ACCID	ENTS	NONFATAL ACCIDENTS			ALL ACCIDENTS		
BROAD CAUSE/FACTOR	CAUSE	FACTOR	T∩TAL≄	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
PILOT	5 71.43	3 42 • 86	6 85.71	37 86.05	9 20•93	. 37 86.05	42 84.00	12 24.00	43 86.00
PERSONNEL	•00	1 14•29	1 14•29	2 4.65	• 00	2 4.65	2 4.00	1 2.00	3 6.00
AIRFRAME	.00	• ೧೧	• 00	2 4.65	• ທາ	2 4.65	2 4.00	• 00	2 4.00
LANDING GEAR	•00	.00	.00	.00	.00	.00	.00	• 00	.00
POWERPLANT	•00	• 00	•00	•00	. ೧ၐ	•00	•00	• 00	.00
SYSTEMS	• 00	.00	• 00	• 00	• 00	•00	•00	• 00	.00
INSTRUMENTS/EQUIPMENT AND ACCESSORIES	•00	• 00	• 00	• 00	1 2•33	1 2.33	• n n] 2.00	1 2.00
ROTORCRAFT .	•00	• 00	.00	• 00	• 00	• 00	•00	•00	.00
AIRPORTS/AIRWAYS/FACILITIES	•00	• 00	.00	• 00	• 00	•00	•00	•00	.00
WEATHER	• 00	1 14•29	1 14.29	7 16.28	8 18.60	15 34.88	7 14•00	9 18.00	16 32.00
TERRAIN	.00	• 00	• 00	4 9.30	15 34.88	19 44.19	4 8.00	15 30.00	19 38.00
MISCELLANEOUS	1 14•29	• 00	1 14.29	1 2.33	• 0.0	1 2•33	2 4.nn	• 00	
UNDETERMINED	1 14•29	• 00	1 14.29	• 00	• 00	•00	1 2.00	• 00	1

THE FIGURES OPPOSITE FACH 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 CALEGORY, THE ACCIDENT IS REPRESENTED ONCE UNDER THE TOTAL FOR THAT CATEGORY

GLIDER' - EXCLUDES RECORDS WHICH HAVE NO CODED CAUSE

INVOLVES 50 TOTAL ACCIDENTS 7 FATAL ACCIDENTS

		TAL ACCID	ENT S	NONE	NEATAL ACCIDENTS					
DETAILED CAUSE/FACTOR	CAUSE	FACTOR '	TOTAL	GAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	
«« PILOT ÷♦			,							
ILOT IN COMMAND ATTEMPTED UPERATION REYOND EXPERIENCE/ABILITY LEVEL	1		1		1	1	1	1	2	
FAILED TO SEE AND AVOID OBJECTS OR DESTRUCTIOMS FAILED TO OBTAIN/MAINTAIN FLYING SPEED	3	1	4	4		4	4 7	1	4 8	
FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES ETC		•		1 4	,	1 5	1		3	
IMPROPER OPERATION OF FLIGHT CONTROLS IMPROPER LEVEL OFF	5		2	£.	1	2	6 2	1	7	
IMPROPER IN-FLIGHT DECISIONS OR PLANNING IMPROPER COMPENSATION FOR WIND CONDITIONS				17 2	2	14 2	17	2	14 2	
INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING LACK OF FAMILIARITY WITH AIRCRAFT		1 2	1 2	2	4	. 6	2	1	1 8	
SELECTED UNSUITABLE TERRAIN INITIATED FLIGHT IN ADVERSE WEATHER CONDITIONS		-		5 1		5	5		5	
SPONTANEOUS-IMPROPER ACTION				1	1	i	1	1	1	
MISJUDGED DISTANCE, SPEED, AND ALTITUDE MISJUDGED DISTANCE AND SPEED				î		i	1 7		1 7	
MISJUDGED DISTANCE AND ALTITUDE MISJUDGED SPEED AND ALTITUDE				7	1	7	,	1	1	
MISJUDGED CLEARANCE IMPROPER RECOVERY FROM BOUNCED LANDING				1 1		1	1		1 1	
SUBTOTAL	6	4	10	48	10	58	54	14	68	
* PERSONNEL **										
IGHT INSTRUCTOR INTENANCE, SERVICING, INSPECTION INADEQUATE MAINTENANCE AND INSPECTION PRATIONAL SUPERVISORY PERSONNEL ATHER PERSONNEL AFFIC CONTROL PERSONNEL				1		l .	1		1	٦
RPORT SUPFHYISORY PERSONNEL RHAYS FACILITIES PERSONNEL ODUCTION-DESIGN-PERSONNEL										
OTHER SCELLANEOUS-PERSONNEL				1		1	1		1	
PILOT OF OTHER AIRCRAFT '		1	1	1		1	1	ı	1 1	
IAN PILOT IGHT ENGINEER SPATCHING										
SURTOTAL		1	1	3		3	3	1	4	
* AIRFRAME **										
NGS SPARS				1		ı	1		1	
WING ATTACHMENT FITTINGS, ROLTS USFLAGE)		ì	ì		1	
INDING GEAR . IGHT CONTROL SURFACES OTHER				1		1	I		1	
SURTOTAL				3		3	3		3	
* INSTRUMENTS/EQUIPMENT AND ACCESSORIES **										
IGHT AND NAVIGATION INSTRUMENTS MMUNICATIONS AND NAVIGATION EDUIPMENT										
ISCELLANEOUS EQUIPMENT GLIDER LAUNCH/TOW FOUIPMENT					ì	1		1	, 1	

INSTRUMENTS/EQUIPMENT AND ACCESSORIES (CONTINUED)	FAT	AL ACCIO	ENTS	ΝΠΝΕΑ	TAL ACCI	DENTS	A I.	L ACCIDE	NTS
	ÇAUSE'	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
SUBTOTAL	•				1	1		1	1
** WEATHER **									
UNFAVORABLE WIND CONDITIONS TURBULENCE IN FLIGHT, CLEAR AIR DOWNDRAFTS, UPDRAFTS ADVERSE WINDS ALOFT THUNDERSTORM ACTIVITY OTHER		1	1	5 1 3	1 2 3 1 1	6 3 6 1 1 2	5 1 3	2 2 3 1 1 1	7 3 6 1 1 2
SUBTOTAL		1	1	10	9	19	10	10	20
** TERRAIN **									
HIGH VEGETATION ROUGH/UNEVEN HIGH DASTRUCTIONS OTHER				1 I 1	2 4 9	3 5 10 1	1 1 1	? 4 9	3 5 10 1
SUBTOTAL				4	15	19	4	15	19
** MISCELLANEOUS **									
EVASIVE MANEUVER TO AVOID COLLISION UNDETERMINED DIRECT ENTRIES	1		1	1		1	1 1 1		1 1 1
SUBTOTAL	2		2	1		1	3		3
GRAND TOTAL	8	6	14	69	35	104	77	41	118
** MISCELLANEOUS ACTS, CONDITIONS **									
POORLY PLANNED APPROACH SEPARATION IN FLIGHT AIRFRAME ICE OVERLOAD FAILURE MATERIAL FAI_URE FLUTTER		1	1	2 2	1 2 2 1	3 2 4 1 2	?	1 2 1 2 1	3 2 1 4 1

DIRECT ENTRY CAUSES

MISC-PREMATURE TOW RELEASE AT ACFT, REASON UNKNOWN

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

KIND OF FLYING BY INJURY INDEX CLIDER

	4878	SERIC	WIN	404¢	,	RECORDS	ACCIDENTS	PERCENT
INSTRUCTIONAL								
DUAL			1	1		2	2	4.00
SOLO		1		4		5	. 5	10.00
CHECK								
TRAINING	3	1		1		5	5	10.00
NONC OMMERC 1 AL								
PL EA SURE	4	5	5	21		35	35	70.00
PRACTICE								
BUSINESS				-				
CORPORATE/EXECUTIVE								
AERIAL SURVEY								
COMPANY FLIGHT								
OTHER								
COMMERC IAL								
AERIAL APPLICATION								
CROP CONTROL RELATED FLIGHT								
FIRE CONTROL								
FIRE CONTROL RELATED FLIGHT								
AERIAL MAPPING/PHOTOGRAPHY				1		1	1	2.00
AERIAL ADVERTISING								
POWER AND PIPELINE PATROL					v, "			
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								
OT HER								

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FATA'SERIOUS NIMOR NOHE

	4۶	Sec.	¥/,	40				
KIND OF FLYING	•		•			RECORDS	ACCIDENTS	PERCENT
UNKNOWN/NOT REPORTED								
MISCELLANEOUS								
EXPERIMENTATION					•			
TEST								•
DEMONST RAT ION								
FERRY								
SEARCH AND RESCUE								
AIR SHOW/AIR RACING			1			1	ı	2.00
PARACHUTE JUMP								
PARACHUTE JUMP-AIR SHOW								
TOWING GLIDERS								
SEEDING CLOUDS								
HUNT ING								
POLICE PATROL								
HIGHWAY TRAFFIC ADVISORY								
ALL OTHER PUBLIC FLYING								
OTHER			1			1	1	2.00
UNKNOWN/NOT REPORTED								
RECORDS	7	7	8	28		50		
ACC IDENTS	7	7	8	28			50	

14.0 14.0 16.0 56.0

PERCENT

KIND OF FLYING BY AIRCRAFT DAMAGE. GLIDERS-1972

	DESTO TED STANTIAL MORE	RECURDS	ACCIDENTS	PERCENT
INSTRUCTIONAL				
CLAL	2	. 2	2	4.00
SCLO	5	5	5	10.00
CHECK	-		-	
THAINING	3 2	5	5	10.00
NGNCOMMERCIAL				
PLEASURE	6 29	35	35	70.00
PHACTICE				
PUSINESS	•			
CORPORATE/EXECUTIVE				
AERIAL SURVEY				
COMPANY FLIGHT				
OTHER	•			
COMMERCIAL				
AERIAL APPLICATION				
CHOP CONTROL RELATED FLIGHT				
FIRE CONTROL				
FIRE CONTROL RELATED FLIGHT				
AERIAL MAPPING/PHOTOGRAPHY	1	1	1	2.00
AERIAL ADVERTISING				
POWER AND PIPELINE PATROL				
FISH SPOTTING				
AIR TAXI-PASSENGER OPERATIONS				
AIR TAXI-CARGO OPERATIONS				
CONSTRUCTION WORK				
SCHEDULED PASSENGER SERVICE				
SCHEDULED CARGO SERVICE				
INTRA-STATE CHARTER PASSG.				
INTRA-STATE CHARTER CARGO.				
MILITARY CONTRACT-PASSENGER				
FILITARY CONTRACT-CARGO				
CHARTER CARGO-DOMESTIC				
CHARTER PASSG-DOMESTIC				
CHARTER-CARGO-INTERNATIONAL				
CHARTER-PASSG-INTERNATIONAL				
OTHER				

KIND OF FLYING

1

MECURUS ACCIDENTS PERCENT

2.00

2.00

UNKNOWN/NOT REPORTED

MISCELLANEOUS

EXPERIMENTATION

TEST

CEMONSTRATION

FERRY

SEARCH AND RESCUE

AIR SHOW/AIR HACING

PARACHUTE JUMP

PARACHUTE JUMP-AIR SHOW

TOWING GLIDERS

SEEDING CLOUDS

FUNTING

POLICE PATROL

HIGHWAY TRAFFIC ADVISORY

ALL OTHER PUBLIC FLYING

OTHER

UNKNOWN/NOT REPORTED

ACCIDENTS

PERCENT

RECORDS

INJURIES, ACCIDENTS GLIDER

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
	PILOT	6	8	. 8	28			50
	COPILOT DUAL STUDENT CHECK PILOT			1	1			2
	FLIGHT ENGINEER NAVIGATOR CABIN ATTENDANT EXTRA CREW							
	PASSENGERS	2		1	7			10
	TOTAL	8	8	10	36	• .	ABOAR D	62
:								
	* OTHER AIRCRAFT OTHER GROUND				2			2
	GRAND TOTAL	8	8	10	38			64

INVOLVES 50 TOTAL ACCIDENTS INVOLVES 7 FATAL ACCIDENTS

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

COLLISIONS BETWEEN AIRCRAFT

.

TYPE OF COLLISION (IST) BY INJURY INDEX

	44,	A SEP	WIN	10° 40° 41°		RECORDS	ACCIDENTS
ROTH IN FLIGHT	26	8	4	12		50	25
ONE ATRBORNE			5			2	1
NOTH ON GROUND			4	32	•	36	18
OTHER							
RECORDS	26	8	10	44		88	
ACCIDEN"S	13	4	5	22			44

ANALYTIC TABLE

TYPE OF COLLISION(SND)RY INJURY INDEX

FATAL SERIOUS NOR HOHE

RECORDS ACCIDENTS

ROTH IN FLIGHT ONE AIRBORNE BOTH ON GROUND OTHER

RECORDS ACCIDENTS

(Includes all <u>mircraft</u> records involved in collisions)

PHASE OF OPERATION BY AIRCRAFT DAMAGE COLLISIONS DESKOTED SANTAL LORE

	DEST SIBS, WING, TOME	RECORDS ACCIDENTS
STATIC		
STARTING ENGINEZS	•	
IDLING ENGINE/S	5	5 5
ENGINE RUNUP	4	4 4
IDLING ROTORS		
PARKED-ENGINES NOT OPERATING		
OTHER	1	1 1
TAXI		
TO TAKFOFF	8 3	11 9
FHOM LANDING	3 1 1	5 5
OTHER	1	1 1
GROUND TAXE TO TAKEOFF		
GROUND TAXI FROM LANDING		
GHOUND TAXI+ OTHER	•	
AERIAL TAXI TO TAKFOFF		
AERIAL TAXI TO/FROM LANDING		
AERIAL TAXI. OTHER:		
TAKFOFF		
₩UN	S	5 5
INITIAL CLIMR	1	1 1
VERTICAL		
SOMNING	•	
ABOPTED		
ABORTED		
ABOPTED		
OTHER		
INFLIGHT		
CLIMB TO CRUISE	, 1 z	3 2
MOHMAL CHITSE	8 4 1	13 8
DESCENDING	1 1	5 5
HOLDING		
HOVERING		
POWER-ON DESCENT		
AUTOROTATIVE DESCENT		
ACROBATICS		· ·
4UZ7.1NG		·

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DESTROYED STRATIAL

RECORDS ACCIDENTS

	9)~	S	4	4				RECORD	3 ACC	IUCNIS
UNCONTROLLED DESCENT											
EMERGENCY DESCENT											
LOW PASS											
OTHER		2	ì	1				•		4	3
EN ROUTE TO THEAT CROP											
EN POUTE TO RELOADING AREA											
SURVEY FIELD/AREA											
STAPTING SWATH RUN											
SWATH RUN											
FLAREOUT FOR SWATH RUN											
PULLUP FROM SWATH RUN											
PROCEDURE TURNAROUND											
CLEANUP SWATH											
MANER TO AVOID OBSTRUCTION											
RETURN TO STRIP											
LANDING											
TRAFFIC PATTERN-CIRCLING		4	3	1						8	4
FINAL APPROACH		4	10	1					1	5	8
INITIAL APPROACH											
FINAL APPROACH											
LEVEL OFF/TOUCHDOWN			4	1	1					6	4
ROLL			7							7	7
ROLL-ON/RUN-ON											
POWER-ON LANDING					eq.						
POWER-OFF AUTOROTATIVE LOG											
GO-AROUND											
MISSED APPROACH	٠.										
OTHER											
RECORDS / /	. 5	21	55	10	2				8	8	
ACCIDENTS	1	.5	35	10	2						44

(Includes all aircraft records involved in collisions)

COLLISIONS 1972

INVOLVES 44 TOTAL ACCIDENTS
INVOLVES 13 FATAL ACCIDENTS

	FAT	AL ACCID	ENTS	NONF A	TAL ACCI	DENTS	ALL ACCIDENTS		
RROAD CAUSE/FACTOR	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL#	CAUSE	FACTOR	TOTAL*
PTLOT	12 92.31	4 30•77	12 92•31	31 100.00	6 19•35	31 100.00	43 97.73	10 22.73	43 97.73
PFRSONNEL	12 92•31	1 7.69	12 92 .3 1	29 93 . 55	•00	29 93 . 55	41 93•18	1 2.27	41 93.18
ATRERAME	•00	.00	• 0 0	• 0 0	-00	•00	.00	. 00	.00
LANDING GEAR	.00	-00	.00	-00	.00	-00	.00	.00	.00
POWERPL ANT	•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
ATRPORTS/AIRWAYS/FACILITIES	•00	.00	.00	.00	2 6.45	2 6.45	.00	.2 4.55	2 4.55
WEATHER		1 7.69	1 7.69	.00	.00	.00	.00	1 2.27	1 2•27
TERRAIN	.00	.00	•00	.00	•00	•00	.00	•00	.00
MISCELLANEOUS	•00	•00	.00	.00	•00	• 00	•00	•00	.00
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

(Includes all <u>aircraft</u> records involved in collisions)

^{*} 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

COLLISIONS 1972

INVOLVES 44 TOTAL ACCIDENTS 13 FATAL ACCIDENTS

	FAT	TAL ACCID	ENTS	NONFA	TAL ACCI	DENTS	ALL ACCIDENTS			
DETAILED CAUSE/FACTOR	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	
•• PILDT ••										
PILOT IN COMMAND ATTEMPTED DERATION W/KNOWN DEFICIENCIES IN EQUIPMENT DIVERTED ATTENTION FROM OPERATION OF AIRCRAFT FAILED TO SEE AND AVOID OTHER AIRCRAFT FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES ETC IMPROPER OPERATION OF POWERPLANT, POWERPLANT CONTROLS IMPROPER OPERATION OF BRAKES AND/OR FLIGHT CONTROLS INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING INADEQUATE SUPPRYISION OF FLIGHT LACK OF FAMILIARITY WITH AIRCRAFT EXEPCISED POOR JUDGMENT SPONTANEOUS-IMPROPER ACTION MISJUNGGED CLEARANCE		3	2 20 3	3 37 1 1 2	1 2 1 1 1	1 3 37 3 1 2 1 2 1 1	3 57 1 1 2	1 2 5	1 5 57 6 1 2 1 2 1 1	
PHYSICAL IMPAIRMENT FAILED TO MAINTAIN DIRECTIONAL CONTROL				2	1	1 2	2	1	1 2	
DIRECT ENTRIES	1		1				1		1	
SUBTOTAL	55	5	27	48	8	56	70	13	83	
DUAL STUDENT FAILED TO SEE OTHER AIRCRAFT				2		2	2		2	
SURTOTAL				2		2	2		2	
** PERSONNEL **										
FI.IGHT INSTRUCTOR MAINTENANCE, SERVICING, INSPECTION OPERATIONAL SUPERVISORY PERSONNEL WEATHER PERSONNEL TRAFFIC CONTROL PERSONNEL INADEQUATE SPACING OF AIRCRAFT AIRPORT SUPERVISORY PERSONNEL AIRWAYS FACILITIES PERSONNEL PRODUCTION-DESIGN-PERSONNEL		2	2					2	2	
MISCELLANEOUS-PERSONNEL PILOT OF OTHER AIRCRAFT THIRD PILOT FLIGHT ENGINEER OTSPATCHING	21		21	39		39	60		60	
SUBTOTAL	21	2	23	39		39	60	2	62	
** AIRPORTS/AIRWAYS/FACILITIES **		-	23	3,		,,	00	-		
AIRPORT FACILITIES										
ATROPAT CONDITIONS ICE/SLUSH ON RUNWAY OTHER ATRWAYS FACILITIES					1 2	1 2		1 2	1 2	
SUBTOTAL					3	3		3	3	
** WEATHER **	. ~									
OBSTRUCTIONS TO VISION		2	2					2	2	
SUBTOTAL		2	2					5	. 5	
GRAND TOTAL	43	9	52	89	11	100	132	20	152	

MISCELLANEOUS ACTS. CONDITIONS (CONTINUED)	FATAL ACCIDENTS			NONF	TAL ACCI	DENTS	ALL ACCIDENTS			
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	
MISCELLANEOUS ACTS. CONDITIONS										
NOT ALLIGNED WITH RUNWAY/INTENDED LANDING AREA POORLY PLANNED APPROACH WINDSHIELD, DIPTY+ FOGGY, ETC-RESTRICTED VISION SEPARATION IN FLIGHT CONGESTED TRAFFIC-PATTERN SUNGLARE ATRCRAFT CAME TO REST IN WATER TOUCH AND GO LANDING		1 2 3 2	1 1 2 3 2		2 2 4 2	2 2 4 2	1	2 2 1 2 7 2 2	1 2 1 2 7 2	

DIRECT ENTRY CAUSES

PILOT-FAILED TO MAINTAIN ADOT LATERAL SEPARATION

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

(Includes all <u>aircraft</u> records involved in collisions)

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KIND OF FLYING BY INJURY INDEX

		A SER	OUS WIN	o 4 7	L			
	44	, sex	WIL	40H		RECUR	S ACCIDENTS	PERCENT
NONF (AIR CARRIER AIRCRAFT)	1						1 1	1.15
INSTRUCTIONAL								
CUAL	4	. 2		5			12 12	13.79
501.0	1			4			5 5	5.75
CHECK				1			1	1.15
DAINIAHT	1	3	1	1			6 ' 5	6.90
NONCOMMERC 1 AL								
PLEASURE	11	2	8	17		:	38 26	43.68
PHACTICE	1			1			2 2	2.30
HUSINESS	1		1	4			6 5	6.90
CURPORATE/EXECUTIVE				1			1 1	1.15
AERIAL SURVEY								
COMPANY FLIGHT								
CTHER								
COMMERCIAL								
AERIAL APPLICATION								
CHOP CONTROL RELATED FLIGHT				ë			5 2	2.30
FIRE CONTROL								
FIRE CONTROL RELATED FLIGHT								
AERIAL MAPPING/PHOTOGRAPHY				2			۷ 1	2.30
AERIAL ADVERTISING								
POWER AND PIPELINE PATROL								
FISH SPUTTING								
AIR TAXI-PASSENGER OPERATIONS	1			3			4 4	4.60
AIR TAXI-CARGO OPERATIONS				1			1	1.15
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								

KIND OF FLYING	FRIESERIOUS AND ROAF	RECURDS ACCIDENTS PERCENT
UNKNOWN/NOT REPORTED		
MISCELLANEOUS		
EXPERIMENTATION		
TEST		1 1 1.15
CEMONSTRATION	1	3 3 45
FERRY	. 5 1	3 3 143
SEARCH AND RESCUE		2 1 2.30
AIR SHOW/AIR RACING	?	2 1 2.30
PARACHUTE JUMP	•	
PARACHÙTE JUMP-AIR SHOW		
TOWING GLIDERS		
SEEDING CLOUDS		
HUNT ING		
POLICE PATROL	t .	
FIGHWAY TRAFFIC ADVISORY	·	
ALL OTHER PUBLIC FLYING		
OTHER	•	1 1.15
UNKNOWN/NOT REPORTED	1	1 1 1.15
0500005	26 8 10 44	88
RECORDS	13 4 5 22	44
ACCIDENTS	28.7 9.2 11.5 50.6	
PERCENT		

(Includes all aircraft records involved in collisions)

SEGMENTS OF AVIATION INVOLVED BY INJURY INDEX

	(ATA)	SERIO	WINO	40 HE				RECORDS	ACCIDENTS
emi ne GEN VAN∸CUIÉICIUA EVWE	27	ρ	o,	33				72	37
SM TIS GEN AVA-LOC TIS GEN AVA									
SAL HS GEN AVN-HS ATO CARRIER	>							5	1
SMI HS GEN AND-HS MILITARY									
SMI HS GEN AVA-FONETON GEN AV				,				2	1
SWI HE BEN NAM-EUGETON VCS.									
SME HS GEN AMMEROVETON MIL	2							2	1
THE HE GEN AND-COLLISION SAME									
INC HE REA AND-IC VID CAPATES									
I HE TIE GEN ANNAHIE MITTANY									
THE HS GEN ANWEROLFTED GEN AV									
HAR HE BET WANTEDHELDN DON							•		
199 HS GEN AVN-FO-FIGN ATT									
HE ATH CAPRIED-ING ATH CARRIED									
MINS OF CHARTED-ILE WILLIAM									
HE ACE-FORFIGH SEY AVIATION									
US ATH CARRIER-FORETON ACS									
HE WIS CASHIENTEUSELOW WIL									
SECHORS	26	A	Q	35				78	
ACCIDENTS	13,	4	5	۹۱					40

ANALYTIC TABLE

CONTROLLED ZUNCONTROLLED ATRPORT BY INJURY INDEX

	48 ^{TP}	SERIO	WING	NONE DA		RECORDS	ACCIDENTS
CONTROLLED ATHROST	1 10			я		18	9
CHUUNTBOLFEU VIBBUBL	н	А	9	13		43	53
PECHAUS	18	А	9	26		61	
ACCIDENTS	÷,	4	5	14			32

Records with information recorded

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CONTROL ZONE/AREA

	esta seal kind of the	RECORDS	ACCIDENTS
CONTROL FONE/APEN	14 ?	16	8
Yes	14	40	21
ио		2	1
Unknown			
	_	58	
BECORDS	26 A 7 17		70
ACCIDENTS	. 13 4 4 9		

ANALYTIC TABLE

CULTISIONS CONTRACTO DESCRIPTIONS

		ealal.	PION	WINO.	40At		RECORDS	ACCIDENTS	
ON ATOPORT		έ Α (n R		74		55	28	vage;
ON SEAPLANE RASE									
ON HELIPORT									
ON RAPRE/SHIP/PI ATEROM							10	5	
IN INAFFIC PATTEON		4		2	4		3	?	
WITHIN 1/4 MILE		**							
HITHIN 1/2 MILF									
ATHIN 3/4 MILE							2	1	
ALLHIN I MILE					2		2	1	•
UTHIN 2 WILFS		2					2	1	
WITHIN 3 MILES		>							
ATTHIN 4 WILES	•								
WITHIN 5 WILES							14	7	
BEYOND 5 MILES	2.00	10			4				
HAKNU NAVANIT BEBURTED									
RECORDS		26	A	ĵυ	44		88		
ACCIDENTS		13	4	5	25			44	

Records with information recorded

TYPE OF ELIGHT PLAN AND/ON CLEARANCE (GOVERNMENT) BY INJURY INDEX COLLISIONS

	£ 14 3	SER	WIN	404				HF'COPDS	ACCIDENTS
M)MF	21	7	7	411				74	41
4F9	વ	1	2	ì				7	6
(F.5	2		1	,				. 5	4
CONTROLLED AEM								•	
IF? (WFR conditions on top)									
TOWER FR. ROUTE CONTROL SERVIC									
nvfo .									
VES ELIGHT FOLLOWING SERVICE									
SOFCIAL VED									
-11HE≅									
HMKNOW /NOT PEROFIED	i)	•			2	2
BEC()305	25	ч	10	44				яв	
ACCIDENTS	13	4	5	22					44

ANALYTIC TAHLE

TYPE OF WEATHER CONDITIONS MY INJURY INDEX

	talar	PIOL	WINO	HOHE		RECORDS	ACCIDENTS
ifo	26	J	1 7	42		86	43
TE'S							
SETUM MINIMA					•		
HAKNOWN/NOT BEPORTED				2		2	1
RECORDS	24	μ	lυ	44	•	. 88	
ACCIDENTS	13	4	c.	22			44

(Includes all aircraft records involved in collisions)

TYPE OF AIRCRAFT BY INJURY INDEX COLLISIONS

	KAT	SERIO	WINOS	HOHE	·	⊬ECORDS	ACCIDENTS
FIXED-WING	26	ન	10	43		87	44
POTOBCBAFT							
GL INFO				.1		1	1
⇒ V F UUV.							
nf iwb							
Uldlulbfe							
40CKET							
CONVERTINIANE							
GYROP! ANF							
ATHEO							
percogne	24	н	10	44		88	
ACCIDENTS	13	4	5	22			44

ANALYTIC TARLE

COMPITIONS OF FIGHT AS IMPRA INDEX

	FATA	ر ډيوما ⁰	WINO	HOHE	RECORDS	ACCIDENTS
71 A : 4 N	1			,	3	7
PAYL TIGHT	21	н	д	40	77	39
nusk (trilight)	2				5	1
MIGHT (dark)	2		?	. >	6	3
MISHT (moonlight-bright)						
•						
afr()ans	26	я	10	44	88	
ACCIDENTS	13	4	5	22		44

(Includes all aircraft records involved in collisions)

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PILOT CERTIFICATE BY INJURY INDEX COLLISIONS

	é bi	A'SEP	NIN	, ⁷ 0,	RECORDS	ACCIDENTS
< THUE MT	.3	3	2	4	14	13
PRIVATE	۴	5	2	11	51	19
COMMERCIAL	4		4	1 0	19	18
VISITAL TOTAL CHURT	2		1	4	7	5
BRIVATE MAEL TURT THELLINGTON						
COME WITH FLY INSTRUCTOR	7	٦	1	11	22	. 21
DIS MALFICHE INCIDICION	2			ι	3	3
UTHER				1	1	1
NUNE						
HAKNO W.	1				1	
						-
of the property of the propert	26	4	10	44		
				44	88	
ACCIDENTS	1 1	4	5	27		44

ANALYTIC TABLE

VISIFILITY AT ACCIDENT SITE VS INJURY INDEX

		4 ATP	SERIO	WIHOS HO	A.c.			RECORDS	ACCIDENTS
7590					ry C				
INA WITE OF IECO									
IVS MILE OF LECS									
3/4 MILE DO LESS	,	• • •							
I WILE US FEED	1								
S ALLES UN LECE									
3 WILES UD LEZZ	14	. 5		7				4	. 2
4 WILES NO LESS				2				5	1
S MILES OF OVER		. 24	A	H 40				80	40
HMKNUAN				,				2	1
RECORDS		26	A I	n 44				88	
ACCIDE*ITS		. 13	4	5 27		•			44

(Includes all aircraft records involved in collisions)

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STATE OF OCCURRENCE BY INJURY INDEX COLLISIONS

	4	PIR	Seal	MIK	40H	ı		HECORDS	ACCIDENTS
ALASKA	7	?			5			4	2
CALIFORNIA	6)			8			14	7
FLOPIDA	â	?	2	2	2			. 8	4
GEORGIA			2	2				4	5
ILLIN01S					4			4	5
INDIANA				?	2			. 4	2
AWD]					4			4	2
KANSAS			5					2	1
KENTUCKY	ä	-						2	1
LOUISIANA					S			2	. 1
MASSACHUSETTS			ĉ					2	1
MICHIGAN					6			6	3
MINNESOTA	ż	,						5	1
MISSOURI					5			5	1
NEW HAMPSHIRE					2			. 5	1
NE 4 JERSEY					2			5	1
0HI0	7	•						2	1
OHEGON					7			2	- 1
TEXAS				2	2			4	2
VERMONT					2			2	1
VIRGINIA .	4	,						4	2
WASHINGTON	2	,		2				4	5.
WISCONSIN	a	?			5			4	2
PUERTO RICO									
VIRGIN ISLANDS									
CANADA									
WEXICO									
CENTRAL AMERICA									
SOUTH AMERICA									
ASIA	2	,						5	1
PACIFIC OCEAN NORTH LATITUDES									
ATLANTIC OCEAN NORTH LAT.									
RECORDS	26	,	8	10	44			. 88	
ACCIDENTS	13	3	4	5	55				44
(Includes all <u>aircraft</u> records involved in collisions)					PAGE	- 178 -			

PILOT AGE VS INJURY INDEX COLLISIONS

	in the search with to the	RECORDS	ACCIDENTS
14			
15			
16			
17			
18	1 1	2	2
19			
20	1 2	3	3
21	1	ι	1
22	1 2	4	4
23	1	1	1
24	1	1	. 1
25	1	1	1
26	1 4	5	5
27	1 1	. 2	5
2 8	2	2	?
29	1 1	?	2.
30	7	2	?
31	3	3	3
32	1	1	1
33	4	4	4
34	1 2	3	3
35	1 7	. 3	3
36	1	1	l
37	1 1	2	2
3.8	1	1	1
39	1	1	1
40	1	Į	1
41	3 1 2	6	6
42	1 1	. 3	2
43	1	1	1
44	1 1	2	2
45	1	1	1
46	1 1	2	2
47	1 2	3	3
48	1 1 1	4	4

PAGF - 179 -

					V.	· .	ວ ^ຽ ດ	HOHE							
					4P	SET	WILL	40					RECORDS	vcc iu	IFNTS
PILOT 50	AGE				1			1					2		2
51					1		1	1					3		3
52						1		1					7		2
53					1			1					2		2
54					1								Ł		1
55					1			1					2		2
56					3			į					4		4
57						1		,					1		ì
58															
59															
60															
61															
62								1					1		1
63															
64															
65								1					1		1
66															
67								1					1		1
68															
69															
70															
71															
72															
73									•						
74															
75															
76			,4	;										1	1
un	known		1, .		1										
			11												
RECO	RDS				26	8	10	44					я	я	
ACC I	DENTS				13	4	5	55 .		*					44

(COLLISION RECORDS)

(Includes all <u>aircraft</u> records involved in collisions)

RADAR CONTROL-SURVFILLANCE BY INJURY INDEX COLLISIONS

¿PT	SERI	WIN	404	RECORDS	ACCIDENTS
1				1	1
7	5	5	3	14	8
10	6	3	В	27	15
7			4	6	3
20	А	5	15	. 48	
		3		40	25
	1 7 10	1 7 ? 10 6	1 7 2 2 10 6 3 2 2 2 2 2 2 2 2 3 5 5 2 2 2 3 5 5 2 2 3 5 5 2 2 3 5 5 2 5 2	1 7 2 2 3 10 6 3 8 2 4	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

ANALYTIC TABLE

EVASIVE ACTION TAKEN VS INJURY INDEX

FVASIVE ACTION TAKEN	, A ¹	SERI	WINC	HOHE	ı		RECORDS	ACCIDENTS
Yes	5		3	3			11	8
No	16	8	6	30			60	33
Unknown	4						4	3
RECORDS	?5	8	9	33			75	
ACCIDENTS	. 13	4	5	17				39

Records with information recorded

TERMINAL COMMUNICATIONS ESTABLISHED BY INJURY INDEX COLLISIONS

TERMINAL COMMUNICATION ESTABL	FATA	SERIO	WINO	HOHE	RECORD	S ACCIDENTS
Yes	11	S		8	z	1 14
No	15	6	9	17	4	7 28
RECORDS -	26	Ą	9	25		В
ACCIDENTS	13	4	5	13		35

ANALYTIC TABLE

CONTROLLING AGENCY BY INJURY INDEX

	487	SERI	WIM	HOH		RECORDS	ACCIDENTS
NO CONTROL	17	6	7	21		51	29
GROUND CONTROL				8		8	4
LOCAL CONTROL	5					5	3
APPROACH CONTROL-DEPARTURE							
APPROACH CONTROL-LANDING							
APCH CTL-TOWER EN ROUTE CTL			-				
CENTER EN ROUTE	1					1	1
FLIGHT SERVICE STATION							
TOWER	3				•	2	1
UNTCOM	1	2	2	2		7	5
GCA							
UNKNOWN,				S		2	1
RECORDS	26	8	9	33		76	
ACCIDENTS	13	4	5	17			39

Records with information recorded

INJURIES, ACCIDENTS COLLISIONS(BOTH AIRBORNE)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	TOTAL .
	PILOT	17	6	5	22			50
	COPILOT	3						3
	DUAL STUDENT CHECK PILOT FLIGHT ENGINEER	2	1		6			9
	NAVIGATOR							
	CABIN ATTENDANT EXTRA CREW	1						1
	PASSENGERS	18	1		9			28
ı	TOTAL	41	8	5	37		ABOARD	91
183 -	OTHER AIRCRAFT OTHER GROUND						-	
	GRAND TOTAL	41	8	5	37			91

INVOLVES 25 TOTAL ACCIDENTS INVOLVES 13 FATAL ACCIDENTS

INJURIES, ACCIDENTS COLLISIONS (ONE AIRBOPNE)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL	
	PILOT COPILOT DUAL STUDENT CHECK PILOT FLIGHT ENGINEER NAVIGATOR CABIN ATTENDANT	-		1	1			2	
	EXTRA CREW PASSENGERS				1			1	
- 184	TOTAL			1	2		A BO AR D	3	
1	OTHER AIRCRAFT OTHER GROUND								
	GRAND TOTAL			1.	2			3	

INVOLVES INVOLVES

1 TOTAL ACCIDENTS FATAL ACCIDENTS

5

4

INJURIES, ACCIDENTS COLLISIONS(BOTH ON GROUND)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
	PILOT			1	35			36
	COPILOT				3			3
	DUAL STUDENT				4			4
	CHECK PILOT							
	FLIGHT ENGINEER NAVIGATOR							
	CABIN ATTENDANT							
	EXTRA CREW							
	PASSENGERS			4	23			27
	TOTAL			5	65		ABOARD	70
1								
185								
1	OTHER AIRCRAFT							
	OTHER GROUND							
	GRAND TOTAL	,		5	65			70
	GRAND TOTAL			9	65			70

INVOLVES 18 TOTAL ACCIDENTS INVOLVES FATAL ACCIDENTS

.

YEARLY ACCIDENT RECORD

ACCIDENT RATES

		ACCIDENTS			AIRCRAFT- HOÙRS FLOWN	AIRCRAFT- MILES FLOWN	PER 100,000 AIRCRAFT- HOURS FLOWN		PER MILLION AIRCRAFT- MILES FLOWN	
	YEAR	TOTAL	FATAL,	FATALITIES		(000) **		FATAL		FATAL
	1962	4,840	430	857	14.500	1.964.586		2.97	2.46	0.219
	1963	4,690	482	893	15,106	2,048,574	31.0	3.19	2.29	0.235
	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•151##	21,023	3,336,138	27.2	2.73	1.71	0.172
	1967	6,115	603	1 • 333##	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
87 •	1969	4,767	647	1,495##	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
	1972	4,256#	695#	1 • 426##	26.974	3.317.100	15.8	2.57	1.28	0.209

^{*} COMMENCING JANUARY 1. 1968. THE DEFINITION OF SUBSTANTIAL DAMAGE WAS CHANGED. THERFFORE. FEWER ACCIDENTS WERE REPORTED. CARE SHOULD BE USED IN COMPARING WITH SIMILAR DATA FOR PRIOR YEARS.

[#] SUICIDE/SABOTAGE ACCIDENTS INCLUDED IN ALL COMPUTATIONS EXCEPT RATES (1968-3, 1970-1, 1972-3).

^{##} INCLUDES AIR CARRIER FATALITIES(1966-2, 1967-104, 1969-82, 1972-5) WHEN IN COLLISION WITH GENERAL AVIATION AIRCRAFT.

^{**} SOURCE: FAA

^{***}BEGINNING IN 1970. THE DECREASE IN AIRCRAFT-MILES FLOWN IS THE RESULT OF A CHANGE IN THE FAA STANDARD FOR ESTIMATING MILES FLOWN.

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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:

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

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

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

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

AIRCRAFT ACCIDENT (Cont'd)

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

(2) Engine failure, damage limited to an engine, bent fairings or cowling, dented skin, small punctured holes in the skin or fabric, ground damage to rotor or propeller blades, damage to landing gear, wheels, tires, flaps engine accessories, brakes, or wingtips are not considered "substantial damage" for this part.

INJURY INDEX

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

TYPE OF ACCIDENT

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

Gear Collapsed

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

Gear Retracted

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

Airframe Failure

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

Engine Failure/Malfunction

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

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 changed.
 It includes the following categories:

Pleasure Flying by indi

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 busines 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.

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).

CAUSES AND RELATED FACTORS

In determining probable cause(s) of an accident, all facts, conditions, and circumstances are considered. The objective is to ascertain those cause-effect relationships in the accident sequence about which something can be done to prevent recurrence of the type of accident under consideration. For statistical purposes where two or more causes exist in an accident, each is recorded and no attempt is made to establish a primary cause. Therefore, in the cause/related factor tables, the figures shown in the columns dealing with cause may exceed the total number of accidents. The term "factor" is used, in general, to denote those elements of an accident which further explain or supplement the probable cause(s). This provision was incorporated in the coding system to increase 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 cause/factor tables may not agree with the number of total accidents or fatal accidents in other tables covering the same basic aircraft category or operational segment of General Aviation. This is because accidents that occurred on foreign soil were investigated and analyzed for cause by the government of the country involved, and in many cases the final report has not been received. All accidents awaiting final causal determination were excluded from the cause/factor tables.

SMALL FIXED-WING AIRCRAFT

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

LARGE FIXED-WING AIRCRAFT

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

ROTORCRAFT

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

ABBREVIA'TIONS

AIRCRAFT

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

ENGINES

la 關係。"

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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