Doc NTSB **ARG** 75 01

N

A

RANSPORTATIO

Ň

SAFET

ANNUAL REVIEW AIRCRAFT ACCIDENT DATA

U.S. GENERAL AVIATION CALENDAR YEAR 1973



Doc NTSB ARG 75/01 NATIONAL TRANSPORTATION SAFETY BOARD Washington, D.C. 20594

REPORT NUMBER: NTSB-ARG-75-1

ANNUAL REVIEW OF AIRCRAFT ACCIDENT DATA

U.S. GENERAL AVIATION
CALENDAR YEAR 1973

Washington, D. C. 20594
REPORT NUMBER: NTSB-ARG-75-1

TECHNICAL REPORT DOCUMENTATION PAGE

1. Report No. 2.Government Accession No. 3.Recipient's Catalog No.						
2.Government Accession No.	3.Recipient's Catalog No.					
•	5.Report Date					
ft Accident Data	July 25, 1975 6.Performing Organization					
Annual Review of Aircraft Accident Data U. S. General Aviation, Calendar Year 1973						
	8.Performing Organization					
	Report No.					
Name and Address	10.Work Unit No. 1609					
Bureau of Aviation Safety National Transportation Safety Board						
}	13.Type of Report and Period Covered					
and Address	Summary of Aircraft					
1	Accident Data for					
	Calendar Year 1973					
91	14.Sponsoring Agency Code					
	ft Accident Data Calendar Year 1973 Name and Address					

15. Supplementary Notes

16.Abstract

The Annual Review of Aircraft Accident Data is a statistical compilation from reports of 4,255 general aviation accidents that occurred during calendar year 1973. Also included are 50 collisions between aircraft. By coding each aircraft involved in the collisions, an additional 50 records are produced, bringing total accidents records to 4,305.

17. Key Words Aircraft Accid Aviation, accident rates, injuries, collisions betw fixed-wing aircraft, larg rotorcraft, gyrocopters, calculations	18.Distribution This document is to the public the National Technical Information Services Springfield, Virgonia Springfield, Virgonia Springfield	available rough the al ice,	
19.Security Classification (of this report) (of this page) UNCLASSIFIED UNCLASSIFIED		21.No. of Pages	22.Price

FOREWORD

The Statistical Review of General Aviation Accidents is published annually by the National Transportation Safety Board. It contains statistical information compiled from reports of 4,255 general aviation accidents that occurred during the calendar year 1973.

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.

Fifty collisions between aircraft are included. By coding each aircraft involved in the collisions an additional 50 records were produced, bringing the total accident records to 4,305. One foreign registered aircraft was involved in these collisions. The tabulations of statistical information exclude this record, except where noted.

July 1975

TABLE OF CONTENTS

	Page
Foreword	iii
Analysis of Statistical Information	1
Statistical Information	
All Operations	19
Small Fixed-Wing	103
Large Fixed-Wing	121
Rotorcraft	133
Gliders	147
Collisions	159
Yearly Accident Record	179
Explanatory Notes	181

LIST OF TABLES

	Page
All Operations	
Statistical recapitulation of accidents Accidents, rates and active aircraft Accidents, hours flown, rates, injury index, aircraft damage by kind of flying Type of accident by injury index Type of accident by aircraft damage First by second accident type Phase of operation by injury index Phase of operation by aircraft damage Cause/factor - broad Cause/factor - detailed Cause/factor - instructional (broad) Cause/factor - pleasure (broad) Cause/factor - business (broad) Cause/factor - corporate/executive (broad) Cause/factor - aerial application (broad) Kind of flying by injury index Kind of flying by aircraft damage Injury Tables (By kind of flying)	19 20 21 22 24 27 29 31 33 44 45 46 47 48 49 50 52
All operations - total of kinds of flying Instructional - dual Instructional - solo Instructional - training Instructional - check Noncommercial - pleasure Noncommercial - practice Noncommercial - business Noncommercial - corporate/executive Noncommercial - aerial survey Noncommercial - other Commercial - aerial application - crop control Commercial - associated crop control Commercial - fire control Commercial - aerial mapping/photography Commercial - aerial advertizing Commercial - power/pipeline patrol Commercial - fish spotting Commercial - air taxi passenger	54 55 56 57 58 59 60 61 62 63 64 66 67 68 69 70 71 72 73

	Page
Injury Tables (By kind of flying) (continued)	
Commercial - air taxi cargo Commercial - construction work (helicopter) Commercial - other Miscellaneous - experimentation Miscellaneous - test Miscellaneous - demonstration Miscellaneous - ferry Miscellaneous - search and rescue Miscellaneous - air show/racing Miscellaneous - parachute jump (sport) Miscellaneous - parachute jump (show) Miscellaneous - towing gliders Miscellaneous - seeding clouds Miscellaneous - hunting Miscellaneous - police patrol Miscellaneous - highway traffic survey Miscellaneous - other Selected Information	74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 99
Pilot total time Pilot time in type Pilot age by injury index Pilot certificate by injury index Fire after impact by injury index Condition of light by injury index Month of occurrence by injury index State of occurrence by injury index State of occurrence by aircraft damage Type of power by injury Type of aircraft by injury Type of flight plan by injury Type of weather plan by injury Airport proximity by injury index	91 91 92 94 95 95 96 98 100 101 101
Small Fixed-Wing Aircraft	
Type of Accident and Phase of Operation	
Type of accident by aircraft damage Phase of operation by injury index	103 105
Cause/Factor Tables	
Cause/factor table - (broad) Cause/factor table - (detailed)	107 108

	Page
Small Fixed-Wing Aircraft (continued)	
Kind of Flying	
Kind of flying by injury index	117
Injury Tables	
Injuries, accidents	119
Large Fixed-Wing Aircraft	
Type of Accident and Phase of Operation	
Type of accident by aircraft damage Phase of operation by injury index	121 123
Cause/Factor Tables	
Cause/factor table - (broad) Cause/factor table - (detailed)	125 126
Kind of Flying	
Kind of flying by injury index	130
Injury Tables	
Injuries, accidents	132
Rotorcraft	
Type of Accident and Phase of Operation	
Type of accident by aircraft damage Phase of operation by injury index	133 135
Cause/Factor Tables	
Cause/factor table - (broad) Cause/factor table - (detailed)	137 138
Kind of Flying	
Kind of flying by injury index	143
Injuries, Accidents	
Injuries, accidents	145

	Page
Gliders	
Type of Accident and Phase of Operation	
Type of accident by aircraft damage Phase of operation by injury index	147 149
Cause/Factor Tables	
Cause/factor table - (broad) Cause/factor table - (detailed)	15 1 152
Kind of Flying	
Kind of flying by injury index	155
Injuries, Accidents	
Injuries, accidents	157
Collisions	
Type of Collisions and Phase of Operation	
Type of collision by injury index Phase of operation by injury index	159 160
Cause/Factor Tables	
Cause/factor table - (broad) Cause/factor table - (detailed)	162 163
Kind of Flying	
Kind of flying by injury index Kind of flying by aircraft damage	165 167
Selected Collision Information	
Segments of aviation by injury index Controlled/uncontrolled airport by injury index Control zone by injury index Airport proximity by injury index Type flight plan by injury index Type weather by injury index Type aircraft by aircraft damage Conditions of light by injury index Pilot certificate by injury index State of occurrence by injury index	169 169 170 170 171 171 172 172 173

	Page
Collisions (continued)	
Injuries, Accidents	
Injuries, accidents - both airborne Injuries, accidents - one airborne Injuries, accidents - both on ground	176 177 178
Yearly Accident Record - 1963 - 1973	179
Explanatory Notes	181

ANALYSIS OF STATISTICAL INFORMATION

ANALYSIS OF ACCIDENTS Overview

During 1973, there were 4,255 accidents in U. S. general aviation operations. This continued a declining trend in general aviation accidents which began in 1968 (See Figure 1 and Table 1).

Fatal aviation accidents during 1973 continued an upward trend which began in 1971. The number of fatal accidents in 1971 was 661; in 1972 it was 695, and in 1973 it was 723.

In 1973, 4,305 aircraft were involved in 4,255 general aviation accidents. More than 25 percent of these aircraft were destroyed and 73 percent were damaged substantially. Of the 4,255 accidents, 723 were fatal (17 percent) and 395 resulted in serious injury (9.3 percent). Minor injuries occurred in 592 accidents (13.9 percent); there were no injuries in 2,545 accidents (59.8 percent).

Of the 8,552 persons aboard the general aviation aircraft which were involved in 1973 accidents, 1,397 (16.3 percent) were fatally injured, 644 (7.5 percent) were injured seriously, 1,041 persons (12.2 percent) were injured slightly, and 5,470 (64.0 percent) were not injured. An average of 1.99 persons were aboard each general aviation aircraft involved in an accident during 1973.

In 1973, U. S. general aviation aircraft were flown just over 30 million aircraft hours. This was an increase of 3 million hours (11.4 percent) over the hours reported for 1972 and almost double the 1964 total of 15.7 million hours flown. During the same period, trends for the total and fatal accident rates per 100,000 aircraft-hours flown were downward. A substantial decrease in total accidents from 1967 to 1968 with a corresponding decrease in the total accident rate is primarily attributed to a change in the definition of "substantial damage" (Section 430.2 of the National Transportation Safety Board's Regulations) which became effective January 1, 1968. (See Figures 1 and 2.)

Table 1

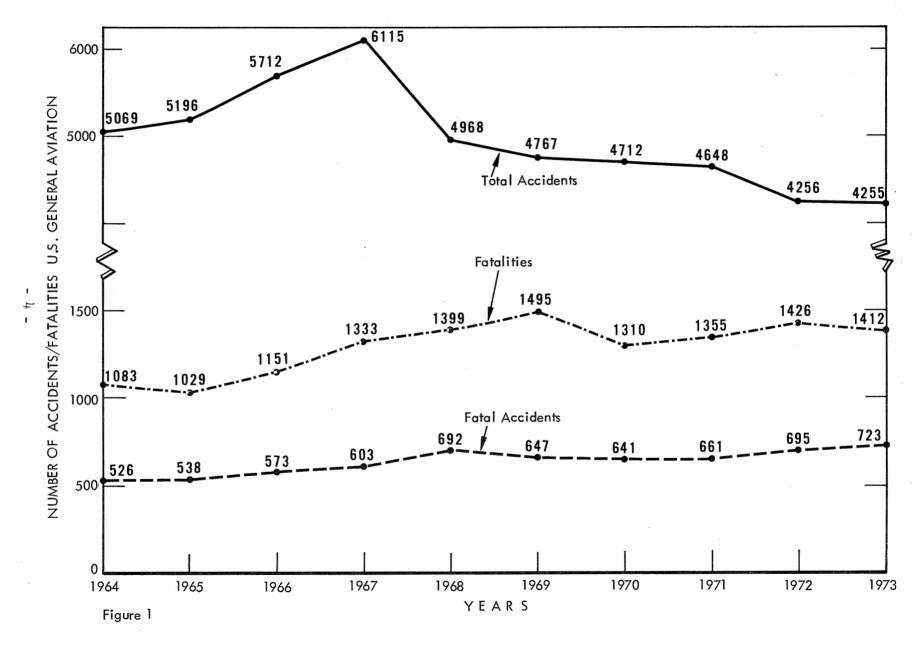
Overview U. S. General Aviation 1972 - 1973

	1972	1973	Percentage Change
Aircraft-hours flown 1	26,974,000	30,048,000	+ 11.40
Eligible aircraft	145,010	153,450	+ 5.82
Total accidents	4,256	4,255	- 0.02
Aircraft involved 2/	4,300	4,305	+ 0.12
Aircraft damage 2/ Destroyed Substantial Minor/none Unknown/not reported	1,026 3,226 29 19	1,102 3,159 կկ 0	+ 7.41 - 2.08 + 51.72 Undefined
Injury index Fatal Serious Minor None Unknown/not reported	695 386 585 2,589	723 395 592 2,545 0	+ 4.03 + 2.33 + 1.20 - 1.70 Undefined
Injuries 3/ Fatal Serious Minor None Unknown/not reported	1,426 683 1,152 5,636	1,412 656 1,056 5,554 0	- 0.98 - 3.95 - 8.33 - 1.45 Undefined
Total aboard	8,793	8,552	- 2.74
Fire after impact 2/ Fatal accidents Nonfatal accidents	186 110	195 153	+ 4.84 + 39.09

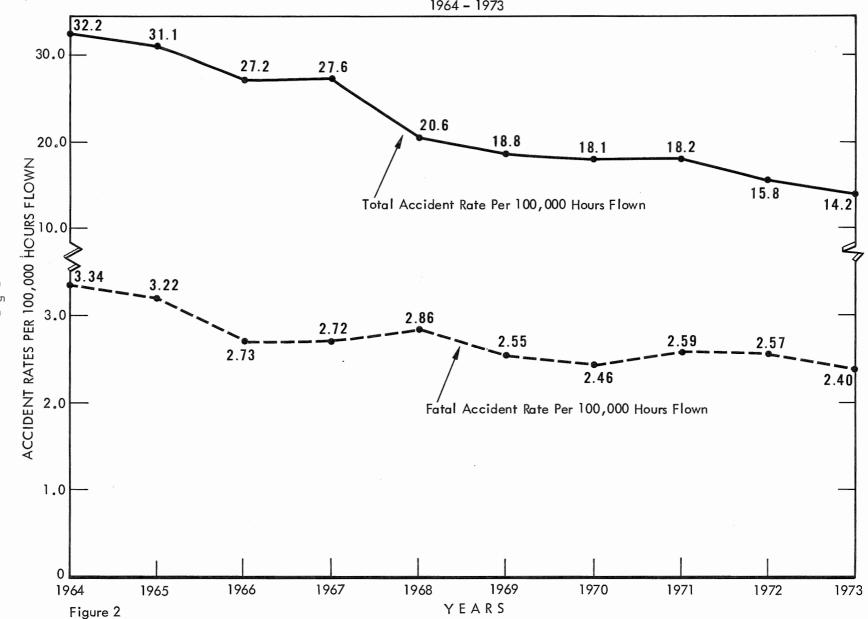
^{1/} Source: Federal Aviation Administration.

Includes all aircraft involved in collisions.

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



1.



Types of Accidents

The 10 types of accidents which occurred most frequently in 1973 are listed below in descending order of frequency:

Table 2 Ten Most Frequent Types of Accidents

Total Accidents -- 4,255

Type of Accident	Frequency	Percent of total
Engine failure or malfunction	967	22.73
Ground - water loop-swerve	564	13.25
Hard landing	295	6.93
Collision with ground/water, uncontrolled	207	4.86
Overshoot	200	4.70
Collided with trees	195	4.58
Stall	184	4.32
Collision with ground/water, controlled	164	3.85
Collided with wires/poles	145	3.41
Stall/mush	144	3.38

An analysis of the 10 most frequent accident types, broken down according to the types of certificates held by the pilots involved, 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:

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

 \mathbf{F}_{O} = the observed number of accident records for the given pilot certificate and given category of accident. Fe = the number of accident records that would have been expected if the percentage of accident records falling in the pilot certificate category in question had been the same as the percentage of the accident records of all pilot certificates that fell in the given accident type. When the result of the chi-square equation was greater than 3.84 but equal to or less than 10.8, a qualitative rating of low (L) or high (H) was recorded, depending on whether the sign of the difference $F_{\rm o}$ - $F_{\rm e}$ was negative or positive. When the numerical rating was greater than 10.8, a qualitative rating of very low (VL) or very high (VH) was given. When the numerical rating was less than or equal to 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 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.

The seven pilot certificate - type of accident combination which received a rating of H or VH were further examined for the specific causes or related factors of the accidents. A summary of the most frequently cited causes/factors for each combination follows:

Student -- Ground-Water Loop-Swerve

Pilot - failed to maintain directional control

Weather - unfavorable wind conditions

Pilot - improper compensation for wind conditions

Pilot - improper operation of brakes or flight controls

Student -- Hard Landing

Pilot - improper level off

Pilot - improper recovery from bounced landing

Pilot - improper operation of flight controls

Private -- Overshoot

Pilot - misjudged distance and speed

Pilot - failed to initiate go-around

Miscellanous acts, conditions - downwind (takeoff or landing)

Commercial -- Engine Failure or Malfunction

Pilot - mismangement of fuel

Pilot - inadequate preflight preparation or planning

Powerplant - powerplant failures for undetermined reasons

Miscellaneous acts, conditions - fuel exhaustion

Miscellaneous acts, conditions - fuel starvation

Miscellaneous acts, conditions - material failure

Commercial -- Collided With Wires/Poles

Terrain - high obstructions

Pilot - failed to see and avoid object or obstructions

Pilot - misjudged clearance

Commercial With Flight Instructor -- Collision With Ground/Water, Controlled

Terrain - high obstructions

Weather - low ceiling

Weather - fog

Airline Transport With Flight Instructor -- Collision With Ground/Water, Controlled

Terrain - high obstructions

Weather - low ceiling

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
11150 Type of Accident	Doddello	1117400	Commercial	TI GIISPOI 0	THE OT WE OUT	THE OT GE OOT
Engine failure or malfunction	L	a	Н	a	a	a
Ground-water loop- swerve	VH.	a	L	a	L	a
Hard landing	V H	a	VL.	a	a	a
Collision with ground/ water, uncontolled	a	a	a	a	L	a
Overshoot	a	VH	VL	a	L	·a
Collided with trees	a	a	a	a	a	a
Stall	a	a	a	a	a.	a
Collision with ground/ water, controlled	m VL	a	a	a	Н	н́
Collided with wires/poles	a	L	VH	a	a	a
Stall, mush	a	a	a	a	a	a

L - low VL - very low

H - high
VH - very high
a - average

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

Pilot Certificate

First Type of Accident	Student	Private	Commercial	Airline Transport	Commercial With Flight Instructor	Airline Trans. With Flight Instructor	Total (All Pilot Certificate)
Engine failure or malfunction	85(111)	389(404)	296(259)	25(30)	142(124)	22(25)	967
Ground-water loop- swerve	126(65)	236(235)	114(151)	18(18)	54(73)	11(14)	564
Hard landing	69(34)	136(123)	34(79)	5(9)	41(38)	4(8)	295
Collision with ground/ water, uncontrolled	19(24)	103(86)	54(55)	5(6)	16(27)	7(5)	207
Overshoot	21(23)	126(84)	23(54)	8(6)	16(26)	6(5)	200
Collided with trees	14(22)	91(81)	56(52)	4(6)	22(25)	6(5)	195
Stall	21(21)	88(77)	42(49)	3(6)	22(24)	3(5)	184
Collision with ground/ water, controlled	4(19)	64(68)	48(44)	5(5)	30(21)	8(4)	164
Collided with wires/poles	10(17)	40(61)	69(39)	1(5)	19(19)	1(4)	145
Stall, mush	10(17)	64(60)	43(39)	5(4)	17(19)	3(4)	144
Total (All Accident Types)	494	1797	1152	134	554	110	

Note: Expected values computed as the product of the marginal totals divided by the overall total accident records of 4,304.

Accident Causes/Factors

In 1973, cause was determined for 705 fatal accidents and 3,478 nonfatal accidents.

The 10 most frequently cited causes or related factors of fatal accidents are given in Table 5. The majority of the 10 leading causal citations involved the weather or some type of pilot error, e.g., "failed to obtain/maintain flying speed."

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

Fatal Accidents -- 705

10 Most Frequently Cited Causes/Factors	Frequency	Percentage of Fatal Accidents
Pilot - failed to obtain/maintain flying speed	194	27.52
Weather - low ceiling	177	25.11
Terrain - high obstructions	169	23.97
Pilot - continued VFR flight into adverse weather conditions	140	19.86
Weather - fog	121	17.2
Pilot - spatial disorientation	112	15.89
Pilot - inadequate preflight preparation or planning	110	15.60
Weather - rain	76	10.78
Pilot - improper inflight decisions or planning	67	9.50
Pilot - improper operation of flight controls	66	9.36

In Table 6, the 10 most frequently assigned causes/factors of the 3,478 nonfatal accidents are given. "Overload failure" leads the list with 582 (16.73 percent) nonfatal accidents, followed by "terrain -- high obstructions" with 560 (16.10 percent) nonfatal accidents. Five of the 10 leading causes/factors in Table 6 were pilot-related, i.e., "inadequate preflight preparation or planning," "failed to maintain directional control," failed to obtain/maintain flying speed," "improper level off," and "mismanagement of fuel."

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

Nonfatal Accidents -- 3478

10 Most Frequently Cited Causes/Factors	Frequency	Percentage of Nonfatal Accidents
Miscellaneous acts, conditions - overload failure	582	16.73
Terrain - high obstructions	560	16.10
Pilot - inadequate preflight preparation or planning	455	13.08
Pilot - failed to maintain directional control	437	12.56
Airport conditions - other	357	10.26
Pilot - failed to obtain/maintain flying speed	343	9.86
Weather - unfavorable wind conditions	330	9.49
Pilot - improper level off	296	8.51
Terrain - rough/uneven	274	7.88
Pilot - mismanagement of fuel	265	7.62

Kinds of Flying

Kinds of flying considered in this analysis were instructional, pleasure, business, corporate/executive, 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 rates cover the period 1970 through 1973. Prior to 1970, the aircraft-hours flown for business and corporate/executive flying are available in composite form but not separately. For this reason, the time period starting with 1970 was chosen.

In Figure 3, the total accident rates are plotted by kind of flying for 1970 through 1973. Pleasure flying consistently had the highest accident rates each year, followed by aerial application and instructional flying. Business flying accident rates were always higher than air taxi rates except in 1973. Corporate/executive flying consistently had the lowest rate each year. Using all U. S. general aviation flying as the average, both pleasure and aerial application flying accident rates were above the average while instruction, business, air taxi, and corporate/executive flying accident rates were below the average.

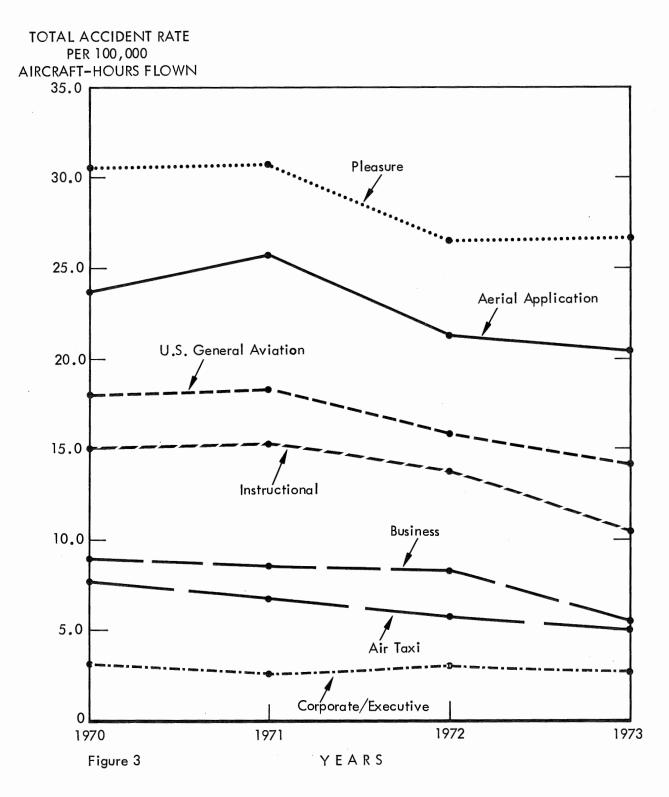
Fatal accident rates by kind of flying are plotted in Figure 4. Pleasure flying had the highest fatal accident rate each year followed by aerial application. Business flying was next, followed by air taxi, except in 1973 when the air taxi fatal accident rate was higher than the business flying rate. Corporate/executive flying consistently had the lowest fatal accident rates and instructional flying had the second lowest fatal accident rates. Aerial application fatal accident rates and the fatal accident rates for all U. S. general aviation were relatively close for the period 1970 through 1973. All the other kinds of flying fatal rates were lower than the U. S. general aviation fatal rates except pleasure flying, which was consistently higher than the overall U. S. general aviation fatal rates by a factor of about 2. To reduce the overall general aviation fatal accident rate in future years, the emphasis needs to be placed on the kinds of flying where the rates are the highest, i.e., pleasure and aerial application flying.

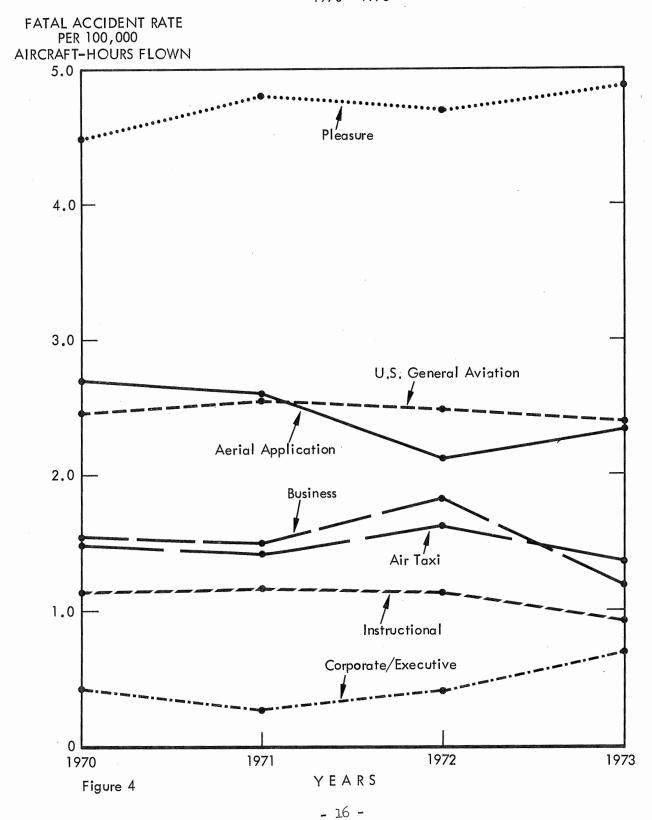
Table 7 Kind of Flying
Total Accident Rates Per
100,000 Aircraft - Hours Flown

	1970	1971	1972	1973
Instructional	15.11	15.18	13.69	10.62
Pleasure	30.53	30.83	26.45	26.69
Business	, 9.04	8.46	8.23	5.11
Corporate/Executive	3.15	2.64	2.85	2.76
Aerial Application	23.88	25.85	21.20	20.54
Air Taxi	7.66	6.65	5.75	5.32

Table 8 Kind of Flying
Fatal Accident Rates Per
100,000 Aircraft - Hours Flown

	1970	1971	1972	1973
Instructional	1.12	1.17	1.13	0.89
Pleasure	4.51	4.78	4.71	4.90
Business	1.55	1.51	1.84	1.21
Corporate/Executive	0.42	0.28	0.41	0.71
Aerial Application	2.70	2.62	2.14	2.38
Air Taxi	1.53	1.44	1.64	1.37





Conclusions

The accident data presented in this report lead to the following conclusions:

- 1. Since 1968, the safety record of the U. S. general aviation industry has been improving. The trends in total accidents and corresponding accident rates per 100,000 aircraft-hours have been decreasing. Even though the number of fatal accidents has had an increasing trend during the period 1964 through 1973, the trend for fatal accident rates per 100,000 aircraft-hours flown has been downward.
- 2. Engine failure or malfunction continues to be the most frequent type of accident, followed in order by ground or water loop, hard landing, uncontrolled collision with ground/water, overshoot, collision with trees, stall, controlled collision with ground/water, collision with wires/poles, and stall/mush. The pilot certificate accident type combinations in which the observed number of accidents were significantly higher than expected were commercial - engine failure or malfunction, student - ground or water loop and hard landing, private - overshoot, commercial with flight instructor and airline transport with flight instructor - controlled collision with ground/water, and commercial - collided with wires/poles. Efforts by all pilots in the general aviation industry to reduce the frequency of these 10 accident types could improve the safety picture substantially. Particular attention should be given by those pilots who hold the certificates in which the above pilot certificate - accident type combinations were statistically significant.
- 3. The leading causes or related factors of fatal accidents were: "pilot failed to obtain/maintain flying speed" (27.52 percent), "weather-low ceiling" (25.11 percent), and "terrain high obstructions" (23.97 percent). For nonfatal accidents, the leading causes/factors were "miscellaneous acts, conditions overload failure" (16.73 percent), "terrain high obstructions" (16.10 percent), and "pilot inadequate preflight preparation or planning" (13.08 percent). More pilot awareness of the causes/factors of accidents coupled with positive action to avoid conditions or situations leading to those causes/factors could substantially decrease the number of accidents.

4. The trends in accident rates by kind of flying show that pleasure and aerial application kinds of flying had the highest total and fatal accident rates for the period 1970 through 1973. To reduce effectively the general aviation total and fatal accident rates, more attention should be directed toward making pleasure and aerial application kinds of flying more professional and therefore safer.

BY THE NATIONAL TRANSPORTATION SAFETY BOARD

- /s/ JOHN H. REED Chairman
- /s/ FRANCIS H. McADAMS
 Member
- /s/ LOUIS M. THAYER Member
- /s/ ISABLE A. BURGESS Member
- /s/ WILLIAM R. HALEY Member

STATISTICAL INFORMATION

GENERAL AVIATION ACCIDENTS

ALL CATEGORIES OF AIRCRAFT

STATISTICAL RECAPITULATION OF ACCIDENTS U. S. GENERAL AVIATION ALL OPERATIONS 1972-1973

	7.000	
	1972	1973
Total Accidents	4,256	4,255
Aircraft Involved 1/	4,300	4,305
Injury Index Fatal Serious Minor None Unknown	695 386 585 2,589	723 395 592 2,545 0
Injuries —/ Fatal Serious Minor None	1,426 683 1,152 5,636	1,412 656 1,056 5,554
Total Aboard	8,793	8 , 552
Aircraft Damage 1/ Destroyed Substantial Minor/None Not Reported	1,026 3,226 29 19	1,102 3,159 44 0
Fire After Impact 1/Fatal Accidents Nonfatal Accidents	186 110	195 153
Active Aircraft (Est.) 2/	145,010	153,450
Hours Flown (Est.) 2/	26,974,000	30,048,000
Accident Rates Per 100,000 Hours Flown Total Fatal	15.8 2.6	14.2 2.4

Note: Suicide accidents included in all computations except rates.

^{1/} Includes all aircraft involved in collisions 2/ Source: FAA

ACCIDENTS, RATES, ACTIVE AIRCRAFT

ALL OPERATIONS

1973

	F	IXED-WING		BALION/ BLIMP	ROTO	RCRAFT
	Single Engine	Multi- Engine	Glider	_	Heli- copter	Gyro- copter
ACCIDENTS	3,424	493	62	6	257	21
AIRCRAFT INVOLVED	3,458	495	64	6	259	21
INJURY INDEX Fatal Serious Minor None Unknown	550 320 490 2,064 0	141 29 40 283 0	6 13 7 36	2 2 0 2 0	24 28 50 155 0	14 3 14 10
ACTIVE AIRCRAFT (est.) 1/	126,217	21,929	1,967	284		3,143
AIRCRAFT DAMAGE Destroyed Substantial Minor/None Unknown/Not Reported	842 2,583 16 17	175 315 5 0	12 48 4 0	2 3 1 0	63 195 1 0	8 13 0 0
HOURS FLOWN (est.) 1	21,843,400	6,836,100	196,800	13,800	1,1	57,900
ACCIDENT RATES PER 100,000 HOURS FLOWN Total Fatal	15.67 2.51	7.21 2.06	31.50 3.05	43.48 14.49		24.01 2.42

Note: Two suicide accidents in single engine fixed-wing aircraft are included in all computations except rates.

^{1/} Source: FAA

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

1973

1			KIND O	F FLYING	1			
	NC	NCOMMERCIA				COMMET	RCIAL	
IONAL	4		丑	NOI		AIR I	AXI	
TRUCT	ASURE	INESS	PORAT	KIAL	SCHED	JLED	NONSCHI	EDULED
INS	PIE	BUS	COF	AEF	PASSG.	CARGO	PASSG.	CARGO
587	2,206	305	94	415	18	22	92	31
5,528.8	8,259.1	5,967.6	3,399.6	2,020.4		3,06	66.2	
10.62	26.69 4.90	5.11 1.21	2.76 0.71	20.54 2.38		5.3 1.3	32 37	
49 45 78 415 0	407 205 316 1,278 0	72 27 30 176 0	24 1 9 60 0	48 53 54 260 0	2 1 2 13 0	7 2 1 12 0	25 6 16 45 0	8 7 4 12
92 493 1 3 0	558 1,635 14 10 0	91 213 0 1 0	28 66 0 0	133 279 2 2 2	2 15 0 1	9 13 1 0	35 55 2 1 0	16 15 1 0 0
	5,528.8 10.62 0.89 49 45 78 415 0 92 493 1 3	587 2,206 5,528.8 8,259.1 10.62 26.69 0.89 4.90 49 407 205 78 316 415 205 78 316 415 0 0 92 558 493 1,635 1 14 3 10	587 2,206 305 5,528.8 8,259.1 5,967.6 10.62 26.69 5.11 0.89 4.90 1.21 49 407 72 205 27 78 316 30 415 205 27 78 316 30 415 1,278 176 0 0 0 92 558 91 493 1,635 213 1 14 0 3 10 1	NONCOMMERCIAL ITAMOO	TINDICAL SEE SEE	NONCOMMERCIAL NONCOMMERCIAL SCHEME SCHEM	NONCOMMERCIAL COMMERCIAL AIR To	NONCOMMERCIAL COMMERCIAL AIR TAXI

1/ Source: FAA

Note: Two suicide accidents occurring during pleasure flying, are included in all computations except rates.

TYPE OF ACCIDENT BY INJURY INDEX ALL OPERATIONS

	4PIP	SERI	WIN	404	RECC	IRDS	ACCIDENTS	PERCENT
GROUND-WATER LOOP-SWERVE	3	13	59	489		564	564	13.10
DRAGGED WINGTIP POD OR FLCAT		1				1	1	.02
WHEELS-UP LANDING		1		97		98	98	2.28
WHEELS-DOWN LANDING IN WATER			1	1		2	2	.05
GEAR COLLAPSED	2		7	74		83	83	1.93
GEAR RETRACTED				50		50	50	1.16
HARD LANDING	3	.9	35	248		295	295	6.85
NCSE OVER/DOWN		2	15	105		122	122	2.83
RCLL OVER			2	4		6	6	. 1.4
CVERSHOOT	3	10	31	156		200	200	4.65
UNDERSHOOT	4	12	15	87		118	118	2.74
OCLLISION BETWEEN AIRCRAFT								
BCTH IN FLIGHT	24	6	2	16		48	24	1.12
ONE AIRBORNE			3	1		4	3	.09
BCTH ON GROUND	2	2	4	37		45	23	1.05
OCLLISION WITH GROUND/WATER								
CCNTROLLED	76	29	17	42		164	.164	3.81
UNCONTROLLED	138	28	14	27		207	207	4.81
CCLLIDED WITH								
WIRES/POLES	27	30	40	48		145	145	3.37
TREES	80	40	17	58		195	195	4.53
RESIDENCE/S	2					2	2	.05
@UILDING/S	1.	2	1	7		11	11	•26
FENCE, FENCEPOSTS		1	6	36		43	43	1.00
ELECTRONIC TOWERS	4			2		6	6	• 1-4
RUNWAY OR APPROACH LIGHTS				4		4	4	.09
AIRPORT HAZARD				6		6	6	. 1.4
ANIMALS				5		5	5	.12
CROP	1	1	3	25		30	30	• 70
FLAGMAN L'OADER		2				2	. 2	.05
CITCHES			3	30		33	33	.77
SNCWBANK			1	13		14	14	.33
PARKED AIRCRAFT		1	1	16	•	18	18	.42
AUTOMOBILE	1	2	3	9		15	15	.35
DIRT BANK		3	6	17	1	26	26	.60
CBJECT	5	8	12	78		103	103	2.39

FIRST TYPE OF ACCIDENT	48	A SER	OUS	40 ⁴	. RECORDS	ACCIDENTS	PERCENT
BIRD STRIKE		1		2	3	3	.07
STALL	89	31	21	43	184	184	4.28
SFIN	63	10	7	1	81	81	1.88
SFIRAL	4	3	2		9	9	.21
MUSH	7	15	32	90	144	144	3.35
FIRE OR EXPLOSION							
IN FLIGHT	5	. 1		е	14	14	.33
ON GROUND				2	. 2	2	.05
AIRFRAME FAILURE							
IN FLIGHT	52		5	9	66	66	1.53
ON GROUND				6	6	6	.14
ENGINE TEARAWAY							
ENGINE FAILURE OR MALFUNCTION	88	109	213	557	967	967	22.47
PROPELLER/ROTOR FAILURE							
PROPELLER	1	1	4	17	23	23	•53
TAIL ROTOR	3	2	4	6	15	15	•35
MAIN ROTOR	2	1	2	5	10	10	.23
PROP ROTOR ACONT TO PERSON	е	13			21	21	.49
JET INTAKE/EXH ACONT TO PERS							
PROPELLER/JET/ROTOR BLAST				3	3	3	.07
TURBULENCE	3	7	4	13	27	27	.63
HAIL DAMAGE TO AIRCRAFT							
LIGHTNING STRIKE	1				1	1	.02
EVASIVE MANEUVER		1			1	1	.02
UNCONTROLLED ALT DEVIATION							
DITCHING			1		1	1	•02
MISSING ACFT NOT RECOVERED	10				10	10	.23
MISCELLANEOUS/OTHER	4	1	4	14	23	23	•53
UNDETERMINED	20			8	28	28	.65
RECORDS	736	399	597	2572	. 4304		
ACCIDENTS	723	395		2545	4304	4255	
0500547	17.1					4235	
PERCENT	11.41	, • 3	,	37.6			

TYPE OF ACCIDENT BY AIRCRAFT DAMAGE ALL OPERATIONS

		CTED.	ATIA	٠						
	OFS	ROTED	TANTIA	AON,	Ç			RECORD	ACCIDENTS	PERCENT
COURNING HATED LUND - CHEDUE	21	542	1					56	564	13.1Ö
GROUND-WATER LOOP-SWERVE		542	1							.02
DRAGGED WINGTIP POD OR FLOAT WHEELS-UP LANDING	1	95								2.28
	3				,			9:		
WHEELS-DOWN LANDING IN WATER		2								.05
GEAR COLLAPSED	3	80						8:		1.93
GEAR RETRACTED		49	1					50		1.16
HARD LANDING	17	277		1				29		6.85
NUSE OVER/DUWN	1	121						12:		2.83
ROLL OVER		6								• 14
OVERSHOOT		188						200		4.65
UNDERSHOUT	14	103	1					11:	118	2.74
COLLISION BETWEEN AIRCRAFT										
BOTH IN FLIGHT	19	23	6					4		1.12
ONE AIRBURNE		3	1					4		•09
BOTH ON GROUND	5	32	7	1		•		4:	23	1.05
COLLISION WITH GROUND/WATER										
CONTRULLED	100	64						164	164	3.81
UNCONTROLLED	158	49						20	207	4.81
CULLIDED WITH										
WIRES/POLES	63	82						14	145	3.37
TKEES	118	77						199	195	4.53
RESIDENCE/S	2							:	2	• 05
BUILDING/S	2	9						1	. 11	• 26
FENCE, FENCEPUSTS	2	. 41						43	43	1.00
ELECTRONIC TOWERS	4	2							6	.14
RUNWAY OR APPROACH LIGHTS		4						4	4	• 09
AIRPORT HAZARD		6							6	.14
ANIMALS		5						5	5	•12
CROP	4	20						30	30	.70
FLAGMAN LÜADER			1	1					2	• 05
DITCHES		33						33	33	•77
SNÜWBANK	1	13						14	14	.33
PARKED AIRCRAFT	1	16	1					18	18	• 42
AUTOMOBILE		-15						15	15	. 35
DIRT BANK	2	24						26	26	.60
UBJECT	12	89	1	1				103	103	2.39

	FIRST	DESTROYED SUBS	'b41.0	+ 4				
	TYPE OF ACCIDENT	offic sup?	WILL	HOME		RECORDS	ACCIDENTS	PERCENT
-	BIRD STRIKE	1 2				3	3	.07
	STALL	111 73				184	184	4.28
	SPIN	68 13				81	81	1.88
2	SPIRAL	6 3				9	9	•21
	MUSH	30 114				144	144	3.35
	FIRE OR EXPLOSION							
	IN FLIGHT	10 4				14	14	•33
	ON GROUND	2				2	2	•05
	AIRFRAME FAILURE							
	IN FLIGHT	55 11				66	66	1.53
	ON GROUND	6				6	6	•14
	ENGINE TEARAWAY							
	ENGINE FAILURE OR MALFUNCTION	194 771	1	1		967	967	22.47
	PROPELLER/ROTOR FAILURE							
	PROPELLER	1 22				23	23	•53
	TAIL ROTOR	4 11				15	15	•35
	MAIN ROTOR	4 6				10	10	•23
	PROP ROTOR ACONT TO PERSON	1 3	3	14		21	21	•49
	JET INTAKE/EXH ACONT TO PERS							
	PROPELLER/JET/ROTOR BLAST	3				3	3	•07
	TURBULENCE	12 14		1		27	27	•63
	HAIL DAMAGE TO AIRCRAFT							
	LIGHTNING STRIKE	1				1	1	•02
	EVASIVE MANEUVER	1				1	1	•02
	UNCONTROLLED ALT DEVIATION							
	DITCHING	. 1				1	1	•02
	MISSING ACFT NOT RECOVERED	10				10	10	•23
	MISCELLANEOUS/OTHER	7 16				23	23	•53
4	UNDETERMINED	20 8				28	28	•65
	RECORDS	1102 3158	24	20		4304		
	ACCIDENTS	1097 3139	24	20	•		4255	
	PERCENT	25.6 73.4	•6	•5				

	-			1.1%
٠				

FIRST ACCIDENT TYPE vs. SECOND ACCIDENT TYPE

		_														SECO	ND TYF	E OF	ACCIDE	T		1										
		<i></i>	77			7//	77	7		/	7									7	77	77	7	7		/ /	77	7 /	77	77	77	77
				//	///	////	//,		/	,	/							in	>	/=/	///	/ /	/ ,		//	//	/ / /	' / /	[s /]	///	/ /	/,/
		///	/ / _ /	/	/ / /	///	//			/					Collide	d with		Į,		10/0/2	//	//	′ /	/	/ / 5	//	//	5/8	5//	//	8	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
			,	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	//	/ / /	/ /c	ollision	/Coll	ision/ th								s, 0	,	/ 3/ /	/ /	/ / F	ire or Airf	rame /	# 01/0 0:1/0,0 0:1/0,0 0:1/0,0	′ / .	//,		/_/	/. /	ذ / / غ	°/ /:
		34 00 10 10 10 10 10 10 10 10 10 10 10 10	1.5/ /	(i / v / v / v / v / v / v / v / v / v /	/ / /	' / / /	′ / ai	with ircraft ,	/ groun		7 7		7 7		/ /	7 7	77			± / /	//	/expl	osion/ fail	ure /	/ ¿š/ ¿	•//	200 / 00 / 00 / 00 / 00 / 00 / 00 / 00	٠/ ئن / ز	(is) (is) (is) (is)	ž/ /		/ / &
	/	/ية/		;°/ /	' / /		/	/	water	/ /	/ /	//	/ / 🔏	·/ /	//	/ /	/ / / 9	//	[60] [61] [61]		/ /			///		/ /	/ / 5	Turbulence (101)	/ / %	// /:	/3/	/ § /
FIRST TYPE OF ACCIDENT	In In Control of Street of	& / %/ {	10 (0) (0) (0) (0) (0) (0) (0) (0) (0) (0	/8/3	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	////	/	/_	/	' / /	' / /	/	/ # /	/ /	//	//	wellem/	′ / .	/ [\$/	' / /	′ / ,		/ ,	/ jo [*] / o	- / - /	//	/ /&/	\$/3/	(1941) 00 00 00 00 00 00 00 00 00 00 00 00 00	# 5/7/k @ # 6/7/k @ // / / / / / / / / / / / / / / / /	(3)	18/5
TIKOT TITE OF AGGIDENT	15		/ \$ / \$ /	\z*\z*\	/ ¿º/ ¿º/	/./	//.	p /	/ /	/ /	/ 2/			。/ /	/ Jage of	/ /		//	/ 20/	//	//		/	8/3/	/ ¿ /	/ /	/\\^\	/.0/.0	00 m 00 m 00 m 0 m 0 m 0 m 0 m 0 m 0 m	١/ قرار	§/ /	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
	/ E	/\$*/\$/.	3/3/3	š/ <u>š</u> .	2/2/2		ou gin	/ 3 / 3) Se /			/ 🐉/		7. /		′ / _{* /}		/*/	Litte Control	///	/ /_	/2/-	/2/3	/ 3/	š/		/3/5/	\\$\\\$\\			/.0/.0	
	/ ž /	3/8/2	Wheels (0)	(0 / 10 / 10 / 10 / 10 / 10 / 10 / 10 /		2 (5) (5) (5) (5) (5) (5) (5) (5) (5) (5)	Port or Front	Controlled	Mies poles	Residence/s	fence, fence,	Rum, Come to	Alibor Para	siewing of	ragela, i	Samous d	Automobile	one land		, / ž /	# #	0 8 00 mg	On Ground Fngine	Engine (0)	Popelle,		8/5/	å/å/;	:/š/	8/8/	رخي / غيرًا	\\$\\\$\
	12/0	3/0/4/	7/0/	5/ E/	/ 2/ 2/	5/5/8/		3/ §/	3 43	/ 🌯 / S	20	2	/ 🔻 / 🤞		2 / 6	43 17	4 25	/62/	8/5/5	15/	1 1 0	0 / 1/	6/4/	w/ e/	5 / 1/2 /	/ *° / q	/ 30/ 0	12/2	12/4	7/5/9	Missing 0111100 0	0116 (Miscoll)
Ground/water loop/swerve Dragged wingtip, pod, or float	564	+	130	+	99 2	++	+	2 2	3 43		20	2	_4	4	65	43 1/	4 25	55	4	 	4		+					ļ		-	-	
Wheels-up landing	98							+ +													1			-			1			1		-
Wheels-down landing in water	2 83 50 295 11				1																											
Gear collapsed	83				_6		+								1			-											-			
Gear retracted Hard landing	205 11		163		12 5			1 3	- 5		1	+ +				1	- ₁	 ,	2	8	2		1	-			-		-	-	+	
Nose over/down	122	'	100		12 3		+	1 3			 	+-'		-			<u> </u>	 ' 			-	+ +	·	+	\dashv					+	+	
Roll over	6																		-1													
Overshoot	200 3	3 1	25 25		11				4 24		34	1 1	3	2	36		3 15		2	7	7			\perp						4		
Undershoot Collision with aircraft	118 2		25	8	6 1		+ $+$ $+$	5	0 12		6	5	4		6	3	12	111 -	- -	 				+			+			+	+	
Both in flight	24																															
One airborne																																
Both on ground	2 22											$\perp \Box$												1.								
Collision with ground/water	144				1														,													
Controlled Uncontrolled	164 207			-	1 3	+ + +			-			+		+							1	+		+ +	-				-	+		
Collided with	120/								_					1 1													1					
Wires/poles	145	1	3	1				2						1					1													
Trees	195				_1							4					ļļ	ļ			-											
Residence(s) Other buildings	11					+-+-+	+	-			-	+-+		+							+ +-			+ -					-		-	
Fence, fenceposts	43		1			+	+	+-+				-		+						 	+	1					+			+		+
Electronic towers	6																															
Runway or approach lights	4										<u> </u>																					
Airport hazard Animals	6		3								 	-		++-				<u> </u>						-					-			
Crop	30 1		4	+	2 1	+ + + + + + + + + + + + + + + + + + + +		+				+		+			-	 		 	+	1		+	+						+ +	
Flagman, loader	2																															
Ditches	33		2		4							1		-																		
Snowbank Parked aircraft (unattended, engines not running)	14		2		2	+								+						-			-				-					
Automobile	15			+++		+	+	+	_			+ +		1	1		1				+	-	+	1			 			+	+-+-	_
Dirt bank	26 103 1		5		1			1	1																							
Other			17		8 3			2]]												
Bird strike (collision with birds)	184		2			+	++-	,——	,		1						1								- $ $ $ $		-					
Stall Spin	81					+-+-	+-+-	1 2	+		·	+		+-+			1-1-					+	-	++			+			-		
Spiral	9										† † †																					
Mush	144 1		2		2				5		5	1			1		1 2															
Fire or explosion	14		2																													
In flight On ground	2	+++		+			+	4	-		1	+		++			 	-	+		+		1	++-	+++		+			 	+	
Airframe failure				\top				+-+				+									1	+	-							 	+++	
In flight	66			1	_1			1 11	1					1										1						1	1.	
On ground	6 2	2	1								ր	1		-										-							+	
Engine tearaway Engine failure or malfunction	967 12	39	123	2 69	99 13	+-	1 5	7 6	16 1 64	2 8	42	1 2	2 1	1 12	47	3	4 19	54	60 10	2 25	5 5	+		+-+			-		-	28	+	+
Propeller/rotor failure					′′ 13		1 1	' J	75 104		+ 	- 4		'+-' -2					Tilli	1			11								1	
Propeller	23	2	4		1			1	1 2		1				1		1 1															
Tail rotor	15 10			5	1			1 5	1			1						2			 			1-1-			1					
Main rotor Propeller/rotor acc. to person	21	+		3		+	++-	1 3			<u> </u>	+		+			 		+	++	++	+	+	+-+	+					+	+	i
Jet intake/exhaust acc. to person		 		+		+ - -	+	+++	+		+	+-+		+			 				+	-		+					 	+ + + -	++	+
Propeller/jet/rotor blast	3				2																											
Turbulence	27	\bot						1 17	1 1										2			3								+	$\perp T$	\perp
Hail damage to aircraft Lightning strike	+	++++					+							-				-						+-+						+	+	-
Evasive maneuver	+ 1	+				+++++	+				+	+		++		_			1	+	+	+-4-		+-+			 - - - - - - 		1	+ + -	++-	-
Uncontrolled altitude deviations											+	+		+-+							tt			+	+++	_					1 1	
Ditching	1																															
Missing aircraft, not recovered	10 23	1		$+\Box$			1	+	1 -					1		-						+ $$		+ I	- $ -$,		
Other/miscellaneous Undetermined	23	2	2	1		1 1	++	+4	1 1	-+ $-$	+	+		 	+			-	2				+	+			+			+	+	
TOTAL SECOND ACCIDENT TYP	£ 2280 33	0 46	0 520	3 88 2	260 33	0 0 0	1 1 77	62	36 261	2 1	7111 (12	13 2	19	0 158	51 20	14 75	145	0 76 22	3 52	5 (0 5	1 0	0	0 0	0 0	0 0	0 0	0 0	0 29	0	0 0
TOTAL SECOND ACCIDENT TYP Total first accident type Total type	4255 564	4 1 98	2 83 5	0 295	22 620	0 1 18 24	2 22 16	4 207 1	15 195	2 1	1 43	5 4	6 5	30	2 33	14 18	15 26	103	3 184 81	9 144	14 2	2 66	6 0 96	7 0	23 15	10 21	0 3	27 0	1 1	0 1	10 2	3 28
TOTAL TYPE	6 6535 50	7 1 1 1 1 1	2 603 5	3 383	383 30 30	0118 24	3 23 22	72402	11/154	1 20	1154	1 1 4	10 7	10	2 101	45 20	20 101	2.40	2 240 102	12 104	10 4	21	7 0.04		00 15	10 01	0 0	071	1 1		100	2 20

623

PHASE OF OPERATION BY INJURY INDEX ALL OPERATIONS

	4P	A SER	WIL OUS	, ⁷ 0,	&	RECORDS	ACCIDENTS	PERCENT
STATIC								
STARTING ENGINE/S	1	4		3		8	8	. 1'9
ICLING ENGINE/S	5	4	1	5		15	15	.35
ENGINE RUNUP				4		4	3	.09
IDLING ROTORS		2		1		3	2	.07
PARKED-ENGINES NOT OPERATING		1		2		3	3	.07
CTHER		1	1	3		5	5	.12
TAXI								
TC TAKEOFF			3	50		53	52	1.23
FROM LANDING	1	3	8	75		87	86	2.02
CTHER		3	1	24		28	28	.65
GROUND TAXI TO TAKEOFF				2		2	2	.05
GROUND TAXI FROM LANDING								
-GROUND-TAXI. OTHER								
AERIAL TAXI TO TAKEOFF				1		1	1	.02
AERIAL TAXI TO/FROM LANDING			1			1	1	.02
AERIAL TAXI, OTHER				1		1	1	.02
TAKEOFF								
RUN	7	12	25	149		193	193	4.48
INITIAL CLIMB	73	63	91	253		480	479	11.15
VERTICAL	2	2	6	11		, 21	21	.49
RUNNING				1		1	1	.02
ABORTED	1	2	. 5	54		62	62	1.44
ABORTED								
AEORTED				1		1	. 1	.02
OTHER	3	2	1	7		13	13	.30
<u>INFLIGH</u> T								
CLIMB TO CRUISE	16	10	11	29		66	65	1.53
NCRMAL CRUISE	65	46	95	234		440	438	10.22
DESCENDING	11	6	14	28		59	59	1.37
HCLDING								
HCVERING	1	2	3	16		22	22	.51
POWER-ON DESCENT			2	5		7	7	.16
AUTOROTATIVE DESCENT				5		.5	5	.12
ACROBATICS	24	3	4	1		32	32	.74
BUZZING	12	4	3	3		22	22	•51

PAGE - 29 -

Deficiency Descent 105 8 2 1 116 116 2.70	FIRST	4A	A SER	WIN	40K	v			
PEPERGENCY CESCENT 1	SEAH LANOITARE	۷,	5.	4.	4		RECORDS	ACCIDENTS	PERCENT
CCW PASS 37 10 10 26 83 83 1.93 CTHER 195 39 31 37 302 298 7.02	UNCONTROLLED DESCENT	105	8	2	1		116	116	2.70
CTHER 195 39 31 37 302 298 7.02 BN ROUTE TO TREAT CROP 2 14 16 16 .37 BN ROUTE TO TREAT CROP 2 2 14 16 16 .37 BN ROUTE TO RELOADING AREA 2 3 5 5 .12 SLRVEY FIELD/AREA 1 2 2 2 5 5 .58 SWATH FUN 3 5 5 12 25 .55 SWATH RUN 9 12 14 47 82 82 82 1.91 FLAREOUT FOR SWATH RUN 3 8 6 13 30 30 .70 PROCEDURE TURNAROUND 10 12 12 42 76 76 76 76 1.77 CLEANUP SWATH RUN 1 2 2 3 3 8 6 13 30 30 .07 PROCEDURE TURNAROUND 10 12 12 42 76 76 76 76 1.77 CLEANUP SWATH 1 1 2 2 3 3 8 8 8 .19 MANEUVER TO AVOID OBSTRUCTION 1 1 1 1 .02 RETURN TO STRIP 4 1 7 12 12 12 .22 LANDING TRAFFIC PATTERN-CIRCLING 25 17 23 31 96 96 2.83 FINAL APPROACH 35 53 58 150 296 293 6.88 INITIAL APPROACH 13 2 1 4 22 29 29 29 .67 LEVEL OFF/TOUCHDOWN 7 26 71 556 660 657 15.33 PGLL 4 8 8 52 561 620 660 657 15.33 PGLL 4 8 8 52 561 620 625 620 14.92 PCURE-OF AUTOROTATIVE LDG 3 15 18 18 .42 GC-AROUND 11 15 17 46 89 89 2.07 PLISSED APPROACH 4 12 17 46 89 89 2.07 PLISSED APPROACH 4 18 6 6 60 657 PCURE-OF AUTOROTATIVE LDG 3 15 18 18 .42 GC-AROUND 11 15 17 46 89 89 2.07 PLISSED APPROACH 4 12 4 2 4 12 17 17 17 .35 PCURE-OF AUTOROTATIVE LDG 3 15 18 18 .42 GC-AROUND 11 15 17 46 89 89 2.07 PLISSED APPROACH 4 2 4 2 4 12 12 12 12 12 12 12 12 12 12 12 12 12	EMERGENCY DESCENT	1			1		2	2	• 05
EN ROUTE TO TREAT CROP 2 14 16 16 .37 EN ROUTE TO RELOADING AREA 2 3 3 5 5 .12 SLRVEY FIELDCAREA 1 2 2 2 5 5 .12 STARTING SWATH RUN 3 5 5 12 25 .25 SWATH RUN 9 12 14 47 82 82 82 1.91 FLAREOUT FOR SWATH RUN 3 8 6 13 30 30 .70 PROCEDURE TURNAROUND 10 12 12 42 76 76 76 1.77 CLEANUP SWATH RUN 1 2 2 3 8 8 8 13 30 30 .70 PROCEDURE TURNAROUND 10 12 12 42 76 76 76 1.77 CLEANUP SWATH 1 1 2 2 3 1 8 8 8 11 1 1 0.02 RETURN TO STRIP 4 1 1 7 12 12 12 .22 LANDING TRAFFIC PATTERN-CIRCLING 25 17 23 31 96 96 2.23 FINAL APPROACH 35 53 58 150 96 29 3 6.88 BAITIAL APPROACH 13 2 1 4 20 20 .46 FINAL APPROACH 18 6 3 2 29 29 .67 LEVEL OFF/TOUCHDOWN 7 26 71 556 60 60 657 15.33 RCLL 4 8 52 561 662 625 620 14.52 BGLL-ON/RUN-ON 1 1 2 1 2 1 3 15 18 18 .42 GC-AROUND 11 15 17 46 89 89 2.07 PURER-ON LANDING 1 1 4 12 17 17 .35 PURER-ON LANDING 1 1 15 17 46 89 89 2.07 PURER-OFF AUTOROTATIVE LDG 23 5 74 2 4 4 12 12 22 UNANOWN/NOT REPORTED 23 95 597 2572 4304 ACCIDENTS 736 399 597 2572 4304	LCW PASS	37	10	10	26		83	83	1.93
EN ROUTE TO RELOADING AREA 1 2 3 SURVEY FIELD/AREA 1 2 2 STARTING SWATH RUN 3 5 5 12 STARTING SWATH RUN 9 12 14 47 82 62 1.91 FLAREOUT FCR SWATH RUN 3 8 6 13 30 30 .70 PROCEDURE TURNAROUND 10 12 12 42 76 76 76 1.77 CLEANUP SWATH 1 2 2 3 8 8 8 .15 MANEUVER TO AVOID OBSTRUCTION ETURN TO STRIP 4 1 7 12 12 12 .22 LANDING TRAFFIC PATTERN-CIRCLING 25 17 23 31 96 96 2.23 FINAL APPROACH 13 2 1 4 20 20 .46 FINAL APPROACH 18 6 3 2 SPINAL APPROACH 18 6 3 2 LEVEL OFF/TOUCHDOWN 7 26 71 556 660 657 15.33 RCLL 4 8 52 561 625 620 14.52 RCLL-ON/RUN-ON POWER-ON LANDING RCLL 4 8 52 561 625 620 14.52 RCLL-ON/RUN-ON POWER-ON LANDING PURES-OFF AUTOROTATIVE LDG 11 15 17 46 89 89 2.07 PISSED APPROACH 2 4 2 4 2 4 UNNNOWN/NOT REPORTED 23 39 597 2572 RECCRDS 736 399 597 2572 4304 ACCIDENTS RECCRDS 736 399 597 2572 4304 ACCIDENTS 723 395 592 2545	CTHER	195	39	31	37		302	298	7.02
SLRVEY FIELD/AREA 1 2 2 2 5 5 5 1.2 STARTING SWATH PUN 3 5 5 12 25 25 .58 SWATH RUN 9 12 14 47 82 82 82 11.91 FLAREOUT FCR SWATH RUN 2 7 9 9 .2.1 PULLUP FROM SWATH RUN 3 8 6 13 30 30 .70 PROCEDURE TURNAROUND 10 12 12 42 76 76 76 1.77 CLEANUP SWATH TO AVOID OBSTRUCTION 1 1 1 1 0.02 RETURN TO STRIP 4 1 7 12 12 12 12 12 12 12 12 12 12 12 12 12	EN ROUTE TO TREAT CROP	2			14		16	16	.37
STARTING SWATH RUN 9 12 14 47 82 82 1.91 FLAREOUT FOR SWATH RUN 9 12 14 47 9 9 9 .21 PULLUP FROM SWATH RUN 3 8 6 13 30 30 .70 PROCEDURE TURNAROUND 10 12 12 42 76 76 76 1.77 CLEANUP SWATH RUN 1 2 2 3 8 8 1.15 WAREOUTER TO AVOID OBSTRUCTION 1 1 1 1 0.02 RETURN TO STRIP 4 1 7 12 12 12 2.2 LANDING THAFFIC PATTERN-CIRCLING 25 17 23 31 96 96 2.23 FINAL APPROACH 13 2 1 4 20 20 20 .46 INITIAL APPROACH 13 2 1 4 20 20 20 .46 LEVEL OFF/TOUCHDOWN 7 26 71 556 660 657 15.33 RCLL 4 8 52 561 625 620 14.52 RCLL-ON/RUN-ON 1 1 2 1 2 2 3 3 15 RCLL 4 8 52 561 625 620 14.52 RCLL-ON/RUN-ON 1 1 2 1 2 3 3 15 RCLL 5 17 17 17 .35 RCLL 6 8 50 14 50 15 16 18 18 .42 RCL-ON/RUN-ON 1 1 5 17 46 89 89 2.07 POWER-OF LANDING 1 1 5 17 46 89 89 2.07 PISSED APPROACH 4 4 4 4 0.05 CT-FER 2 4 2 4 2 4 12 12 12 .26 UNKNOWN/NOT REPORTED 23 39 597 2572 4304 RECCROS 73 395 597 2572 4304 ACCIDENTS 73 395 592 2545	EN ROUTE TO RELOADING AREA			2	3		5	5	. 1.5
SWATH RUN 9 12 14 47 82 82 1.91	SURVEY FIELD/AREA	1	2		2		5	5	. 1.5
FLAREOUT FOR SWATH RUN 3 8 6 13 30 30 .70 PROCEDURE TURNAROUND 10 12 12 42 76 76 76 1.77 CLEANUP SWATH RUN 1 2 2 3 3 8 8 .19 MANEUVER TO AVOID OBSTRUCTION 1 1 1 1 .02 RETURN TO STRIP 4 1 7 12 12 .28 LANDING TRAFFIC PATTERN-CIRCLING 25 17 23 31 96 96 96 2.23 FINAL APPROACH 35 53 56 150 296 293 6.88 UNITIAL APPROACH 13 2 1 4 20 20 20 .46 FINAL APPROACH 18 6 3 2 29 29 .67 LEVEL OFF/TOUCHDOWN 7 26 71 556 600 657 15.33 RCLL 4 8 52 561 625 620 14.52 RCLL-ON/RUN-ON 1 2 2 561 625 620 14.52 RCLL-ON/RUN-ON 1 2 2 6 71 556 625 620 14.52 RCLL-ON/RUN-ON 1 1 2 3 3 15 18 18 .42 GC-AROUND 11 15 17 46 89 89 2.07 MISSED APPROACH 4 4 2 4 12 4 12 17 17 17 35 PCWER-OF AUTOROTATIVE LDG 3 15 18 18 18 .42 GC-AROUND 11 15 17 46 89 89 2.07 MISSED APPROACH 4 12 12 12 2.28 UNKNOWN/NOT REPORTED 23 55 28 28 .65	STARTING SWATH RUN	3	5	5	12		25	. 25	.58
FULLUP FROM SWATH RUN 3 8 6 13 30 30 .70 PROCEDURE TURNAROUND 10 12 12 42 76 76 76 1.77 CLEANUP SWATH 1 2 2 3 8 8 .19 MANEUVER TO AVOID OBSTRUCTION 1 1 1 1 .02 .28 EETURN TO STRIP 4 1 7 12 12 .28 .28 LANDING TRAFFIC PATTERN-CIRCLING 25 17 23 31 96 96 2-23 .28 .29 .293 .688 .88 .19 .28 .28 .28 .28 .28 .28 .28 .28 .28 .68 .88 .88 .69 .28 .28 .66 .68 .28 .66 .69 .69 .68 .68 .68 .68 .68 .68 .68 .68 .68 .68 .68 .68 .62 <td>SWATH RUN</td> <td>9</td> <td>12</td> <td>14</td> <td>47</td> <td></td> <td>82</td> <td>82</td> <td>1.91</td>	SWATH RUN	9	12	14	47		82	82	1.91
PROCEDURE TURNAROUND 10 12 12 42 76 76 1.77 CLEANUP SWATH 1 2 2 3 3 8 8 8 .19 WANEUVER TO AVOID OBSTRUCTION RETURN TO STRIP 4 1 1 7 12 12 .28 LANDING TRAFFIC PATTERN-CIRCLING 25 17 23 31 96 96 96 2.33 FINAL APPROACH 13 2 1 4 20 20 .46 FINAL APPROACH 18 6 3 2 LEVEL OFF/TOUCHDOWN 7 26 71 556 660 657 15.33 RCLL RCLL 4 8 52 561 625 620 14.52 RCLL-ON/RUN-ON PCWER-ON LANDING 1 4 12 17 17 .35 PCWER-OFF AUTOROTATIVE LDG CC-AROUND 11 15 17 46 89 89 2.07 WISSED APPROACH 4 4 0.05 CTHER 2 4 2 4 UNKNOWN/NOT REPORTED 73 399 597 2572 RECCRDS 736 399 597 2572 RECCRDS 736 399 597 2572 RECCRDS 736 399 597 2572 ACCIDENTS 728 345 4255	FLAREOUT FOR SWATH RUN			2	7		9	9	•21
CLEANUP SWATH 1 2 2 3 8 8 .19 MANEUVER TO AVOID OBSTRUCTION 1 1 1 .02 RETURN TO STRIP 4 1 7 12 12 .28 LANDING TRAFFIC PATTERN-CIRCLING 25 17 23 31 96 96 2.83 FINAL APPROACH 35 53 58 150 296 293 6.88 BNITIAL APPROACH 13 2 1 4 20 20 .46 FINAL APPROACH 18 6 3 2 29 29 .99 .67 LEVEL OFF/TOUCHDOWN 7 26 71 556 660 657 15.33 RCLL 4 8 52 561 625 620 14.52 RCLL-ON/RUN-ON 1 2 3 15 17 17 .39 PCWER-OFF AUTOROTATIVE LDG 3 15 18 18 .42 GC-AROUND 11 15 17 46 89	PULLUP FROM SWATH RUN	3	8	6	13		30	30	.70
MANEUVER TO AVOID OBSTRUCTION 1 1 1 .02	PROCEDURE TURNAROUND	10	12	12	42		76	76	1.77
RETURN TO STRIP 4 1 7 12 12 12 28 LANDING TRAFFIC PATTERN-CIRCLING 25 17 23 31 96 96 2.83 FINAL APPROACH 35 53 58 150 296 293 6.88 INITIAL APPROACH 13 2 1 4 20 20 .46 FINAL APPROACH 18 6 3 2 29 29 .67 LEVEL OFF/TOUCHDOWN 7 26 71 556 660 657 15.33 RCLL 4 8 52 561 626 620 14.92 HOL-ON/RUN-ON 1 2 3 3 .07 PCWER-ON LANDING 1 4 12 17 17 .35 PCWER-OFF AUTOROTATIVE LDG 3 15 18 18 .42 GC-AROUND 11 15 17 46 89 89 2.07 MISSED APPROACH 4 2 4 2	CLEANUP SWATH	1	2	2	3		8	8	· 1·9
LANDING TRAFFIC PATTERN-CIRCLING 25 17 23 31 96 96 2.83	MANEUVER TO AVOID OBSTRUCTION				1		1	1	. 02
TRAFFIC PATTERN-CIRCLING 25 17 23 31 96 96 2.23 6.88 FINAL APPROACH 35 53 58 150 296 293 6.88 BNITIAL APPROACH 13 2 1 4 20 20 .46 6.88 FINAL APPROACH 18 6 3 2 29 29 .67 <td>RETURN TO STRIP</td> <td>4</td> <td></td> <td>1</td> <td>7</td> <td></td> <td>12</td> <td>12</td> <td>.26</td>	RETURN TO STRIP	4		1	7		12	12	.26
FINAL APPROACH 35 53 58 150 296 293 6.88 INITIAL APPROACH 13 2 1 4 20 20 .46 FINAL APPROACH 18 6 3 2 29 29 .67 LEVEL OFF/TOUCHDOWN 7 26 71 556 60 660 657 15.33 RCLL 4 8 52 561 625 620 14.52 RCLL-ON/RUN-ON 1 2 3 3 .07 PCWER-ON LANDING 1 4 12 17 17 .39 PCWER-OFF AUTOROTATIVE LDG 3 15 18 18 .42 GC-AROUND 11 15 17 46 89 89 2.07 MISSED APPROACH 4 .09 CTHER 2 4 2 4 2 4 12 12 .28 UNKNOWN/NOT REPORTED 23 395 592 2545 4304 ACCIDENTS 736 399 597 2572 4304 ACCIDENTS 723 395 592 2545	LANDING								
DINITIAL APPROACH	TRAFFIC PATTERN-CIRCLING	25	17	23	31		96	96	2.23
FINAL APPRCACH LEVEL OFF/TOUCHDOWN 7 26 71 556 660 657 15.33 RCLL 4 8 52 561 625 620 14.52 RCLL-ON/RUN-ON 1 2 3 3 3 .07 PCWER-ON LANDING 1 4 12 17 17 .39 PCWER-OFF AUTOROTATIVE LDG GC-AROUND MISSED APPROACH 4 4 .09 CTHER 2 4 2 4 UNKNOWN/NOT REPORTED 23 395 597 2572 ACCIDENTS 723 395 592 2545 29 .667 ACCIDENTS 660 657 15.33 A 07 15.33 A 07 ACCIDENTS 625 620 14.52 ACCIDENTS 625 620 14.52 ACCIDENTS 625 620 14.52 ACCIDENTS 626 71 556 627 15.33 ACCIDENTS 627 15.33 ACCIDENTS 628 29 .667 ACCIDENTS 640 657 ACCIDENTS 640 657 ACCIDENTS 640 657 ACCIDENTS 640 657 ACCIDENTS 640 660 657 ACCIDENTS 640 14.52 ACCIDENTS 640 660 657 ACCIDENTS 640 15.33 ACCIDENTS 640 660 657 ACCIDENTS 640 660 657 ACCIDENTS 640 15.33 ACCIDENTS 640 660 657 ACCIDENTS 640 660 660 ACCIDENTS 640 660 657 ACCIDENTS 640 660 660 ACCIDENTS 640	FINAL APPROACH	35	53	58	150		296	293	6.88
LEVEL OFF/TOUCHDOWN 7 26 71 556 660 657 15.33 RCLL 4 8 52 561 625 620 14.52 RCLL-ON/RUN-ON 1 2 3 3 .07 PCWER-ON LANDING 1 4 12 17 17 .39 PCWER-OFF AUTOROTATIVE LDG 3 15 18 18 .42 GC-AROUND 11 15 17 46 89 89 2.07 MISSED APPROACH 4 - - 4 2 4 12 4 .09 CTHER 2 4 2 4 2 4 12 .28 .65 RECGRDS 736 399 597 2572 4304 .255 .65 RECGRDS 723 395 592 2545 .28 .4255 .65	INITIAL APPROACH	13	2	1	4		. 20	20	. 46
RCLL 4 8 52 561 625 620 14.52 RCLL-ON/RUN-ON 1 2 3 3 .07 PCWER-ON LANDING 1 4 12 17 17 .39 PCWER-OFF AUTOROTATIVE LDG 3 15 18 18 .42 GC-AROUND 11 15 17 46 89 89 2.07 MISSED APPROACH 4 4 4 4 .09 CTHER 2 4 2 4 12 12 .28 UNKNOWN/NOT REPORTED 23 5 5 28 28 .65 RECCRDS 736 399 597 2572 4304 4255 ACCIDENTS 723 395 592 2545 4255	FINAL APPROACH	18	6	3	2		29	29	.67
RCLL-ON/RUN-ON 1 2 3 3 .07 PCWER-ON LANDING 1 4 12 17 17 .39 PCWER-OFF AUTOROTATIVE LDG 3 15 18 18 .42 GC-AROUND 11 15 17 46 89 89 2.07 MISSED APPROACH 4 2 4 2 4 4 4 .09 CTHER 2 4 2 4 12 12 .28 UNKNOWN/NOT REPORTED 23 5 5 28 28 .65 RECGRDS ACCIDENTS 736 399 597 2572 4304 4255	LEVEL OFF/TOUCHDOWN	7	26	71	556		660	657	15.33
PCWER-ON LANDING 1 4 12 17 17 .39 PCWER-OFF AUTOROTATIVE LDG 3 15 18 18 .42 GC-AROUND 11 15 17 46 89 89 2.07 MISSED APPROACH 4 4 4 4 .09 CTHER 2 4 2 4 12 12 .28 UNKNOWN/NOT REPORTED 23 5 5 28 28 .65 RECCRDS 736 399 597 2572 4304 4255 ACCIDENTS 723 395 592 2545 4255	RCLL	4	8	52	561		625	620	14.52
PCWER-OFF AUTOROTATIVE LDG 3 15 18 18 .42 GC-AROUND 11 15 17 46 89 89 2.07 MISSED APPROACH 4 4 0.09 CTHER 2 4 2 4 12 12 12 .28 UNKNOWN/NOT REPORTED 23 5 5 28 28 .65 RECCRDS 736 399 597 2572 4304 ACCIDENTS 723 395 592 2545	RCLL-ON/RUN-ON			1	2		3	3	.07
GC-AROUND 11 15 17 46 89 89 2.07 MISSED APPROACH 4 4 4 4 4 .09 CTHER 2 4 2 4 12 12 .28 UNKNOWN/NOT REPORTED 23 5 5 28 28 .65 RECCRDS 736 399 597 2572 4304 4255 ACCIDENTS 723 395 592 2545 4255	PCWER-CN LANDING	1		4	12		17	17	39
MISSED APPROACH 4 4 .09 CTHER 2 4 2 4 12 12 .28 UNKNOWN/NOT REPORTED 23 5 5 28 28 .65 RECCRDS 736 399 597 2572 4304 4255 ACCIDENTS 723 395 592 2545 4255	PCWER-OFF AUTOROTATIVE LDG			3	15		18	18	.42
CTHER 2 4 2 4 2 4 4 2 4 4 2 4 4 2 4 4 2 4 <td>GC-AROUND</td> <td>11</td> <td>15</td> <td>17</td> <td>46</td> <td></td> <td>89</td> <td>89</td> <td>2.07</td>	GC-AROUND	11	15	17	46		89	89	2.07
UNKNOWN/NOT REPORTED 23 5 28 28 .65 RECCRDS 736 399 597 2572 4304 4255 ACCIDENTS 723 395 592 2545 4255	MISSED APPROACH	4					4	4	.09
RECCRDS 736 399 597 2572 4304 ACCIDENTS 723 395 592 2545 4255	CTHER	2	4	2	4		12	12	.28
RECCRDS 736 399 597 2572 4304 ACCIDENTS 723 395 592 2545 4255	UNKNOWN/NOT REPORTED	23			5		28	28	•65
ACCIDENTS 723 395 592 2545 4255									
ACCIDENTS 723 395 592 2545 4255	RECORDS	736	399	597	2572		4304		
. AA.								4255	

PHASE OF OPERATION BY AIRCRAFT DAMAGE ALL OPERATIONS

		•	, pl	,				
	OFFI	POTED SUBS	ANTHO	HON	¢	RECORDS	ACCIDENTS	PERCENT
STATIC								
STARTING ENGINE/S		3	1	4		8	8	•19
IDLING ENGINE/S	1	5	2	. · 7		15	15	.35
ENGINE RUNUP	1	3	1			4	3	•09
IDLING ROTORS		3				. 3	2	•07
PARKED-ENGINES NOT OPERATING		2		1		3	. 3	•07
OTHER		4		1		5	5	•12
TAXI		7		1		,	,	•12
TO TAKEOFF	2	51				53	52	1.23
FROM LANDING	2	81	5	1		87	86	2.02
OTHER	1	26	1	1		28	28	
GROUND TAXI TO TAKENFF	1	2	1			. 28		•65
		2				2	2	•05
GROUND TAXI FROM LANDING								
GROUND TAXI, OTHER								
AERIAL TAXI TO TAKEOFF		1				1	1	•02
AERIAL TAXI TO/FROM LANDING	1					1	1	•02
AERIAL TAXI, OTHER		1				1	1	•02
TAKEOFF								
RUN	. 24	168		1		193	193	4.48
INITIAL CLIMB	133	346	1			480	479	11.15
VERTICAL	2	19				21	21	•49
RUNNING		1				. 1	1	•02
ABORTED	4	58				62	62	1.44
ABORTED								
ABORTED		1				1	1	•02
OTHER	6	7				13	13	•30
INFLIGHT								
CLIMB TO CRUISE	22	44				66	65	1.53
NORMAL CRUISE .	116	324				440	438	10.22
DESCENDING	14	45				59	59	1.37
HOLDING								`
HOVERING	7	15				22	22	.51
POWER-ON DESCENT	2	5				7,	7	•16
AUTOROTATIVE DESCENT		5				5	5	•12
ACROBATICS	25	7				32	32	•74
BUZZING	15	7				22	22	•51

FIRST OPERATIONAL PHASE	aks ^{to}	² 185	MINO	40 ⁴	RECURDS	ACCIDENTS	PERCENT
UNCONTROLLED DESCENT	105	11		,	116	116	2.70
EMERGENCY DESCENT	. 1	1			2	2	•05
LOW PASS	46	36		1	83	83	1.93
OTHER	221	79	2		302	298	7.02
EN ROUTE TO TREAT CROP	4	12			16	16	•37
EN ROUTE TO RELOADING AREA		5			5	5	•12
SURVEY FIELD/AREA	4	1			5	5	•12
STARTING SWATH RUN	12	12	1		25	25	.58
SWATH RUN	26	55		1	82	82	1.91
FLAREOUT FOR SWATH RUN	3	6			. 9	9	•21
PULLUP FROM SWATH RUN	13	17			30	30	.70
PROCEDURE TURNAROUND	28	48			76	76	1.77
CLEANUP SWATH	5	3			8	8	•19
MANEUVER TO AVOID OBSTRUCTION		1			1	1	•02
RETURN TO STRIP	3	9			12	12	•28
LANDING							
TRAFFIC PATTERN-CIRCLING	36	59	1		96	96	2.23
FINAL APPROACH	79	215	2		296	293	6.88
INITIAL APPROACH	11	9			20	20	•46
FINAL APPROACH	23	6			29	29	•67
LEVEL OFF/TOUCHDOWN	36	620	2	2	660	657	15.33
ROLL	10	609	5	1	625	620	14.52
ROLL-ON/RUN-ON		3			3	3	•07
POWER-ON LANDING	3	14			17	17	•39
POWER-OFF AUTOROTATIVE LDG	1	17			18	18	•42
GO-AR OUND	27	62			89	89	2.07
MISSED APPROACH	4				4	4	•09
OTHER	5	7			12	12	•28
UNKNOWN/NOT REPORTED	21	7			28	28	•65 ·
RECORDS	1102	3158	24	20	4304		
ACCIDENTS	1097	3139	24	20		4255	
PERCENT	25.6	73.4	• 6	•5			

ALL OPERATIONS-1973 ACCIDENTS WITH ASSIGNED CAUSES ONLY

INVOLVES 4183 TOTAL ACCIDENTS TOTAL ACCIDENTS

and the state of t

	FAT	FATAL ACCIDENTS			TAL ACCIO	CENTS	ALL ACCIDENTS			
BROAD CAUSE/FACTOR	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TCTAL*	CAUSE	FACTOR	TCTAL*	
PILOT	610	182	618	2943	417	2965	3553	599	3583	
	86.52	25•82	87.66	84.62	11.99	85•25	84•94	14.32	85.66	
PERSCNAEL	45	19	61	332	79	404	377	98	465	
	6.38	2.70	8.65	9•55	2 . 27	11.62	9.01	2.34	11.12	
AIRFRAME	12	3	14	27	6	33	39	9	47	
	1.70	•43	1.99	•78	•17	•95	•93	•22	1.12	
LANDING GEAR	•00	1 •14	1 •14	151 4•34	62 1.78	208 5•98	151 3.61	63 1.51	209 5.00	
POWERPLANT	44	4	46	452	38	487	496	42	533	
	6.24	•57	6.52	13.00	1.09	14.00	11•86	1.00	12.74	
SYSTEMS	11	3	14	32	27	58	43	30	72	
	1.56	•43	1.99	•92	•78	1.67	1.03	•72	1.72	
INSTRUMENTS/EQUIPMENT AND ACCESSORIES	1	7	8	9	11	20	10	18	28	
	•14	•99	1.13	•26	•32	•58	•24	•43	.67	
ROTORCRAFT	7 •99	1 •14	7 • 9.9	25 •72	6 •17	. 30 •86	32 •77	.17	37 .88	
AIRPORTS/AIRWAYS/FACILITIES	2	6	8	203	453	638	205	459	646	
	•28	•85	1.13	5.84	13.02	18.34	4.90	10.97	15.44	
WEATHER	21	261	273	138	563	690	159	824	963	
	2.98	37.02	38.72	3.97	16.19	19.84	3.80	19.70	23.02	
TERRAIN	15	186	201	519	708	1213	534	894	1414	
	2•13	26.38	28.51	14.92	20.36	34.88	12.77	21.37	33.80	
MISCELLANEOUS	20	9	29	163	40	201	183	49	230	
	2.84	1.28	4.11	4.69	1.15	5.78	4.37	1.17	5.50	
UNDETERMINED	54 7.66	.00	54 7.66	21 •60	.00	21 •60	75 1.79	. 00	75 1.79	

^{*} 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

ALL OPERATIONS-1973 ACCIDENTS WITH ASSIGNED CAUSES ONLY

INVOLVES 4183 TOTAL ACCIDENTS INVOLVES 705 FATAL ACCIDENTS

	FATAL ACCIDENTS				TAL ACCI		ALL ACCIDENTS		
CETAILED CAUSE/FACTOR	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TCTAL
** PILCT **									
PILCT IN COMMANC ATTEMPTED OPERATION W/KNCWN DEFICIENCIES IN EQUIPMENT ATTEMPTED OPERATION BEYOND EXPERIENCE/ABILITY LEVEL BECAME LOST/CISORIENTED CONTINUED FREE FLIGHT INTO ADVERSE WEATHER CONDITIONS CONTINUED INTO KNOWN AREA OF SEVERE TURBULENCE DELAYED ACTION IN ABORTING TAKEOFF DELAYED IN INITIATING GO-AROUND DIVERTED ATTENTION FROM CPERATION OF AIRCRAFT EXCECCED DESIGN STRESS LIMITS OF AIRCRAFT FAILED TO EXTEND LANDING GEAR FAILED TO RETRACT LANDING GEAR RETRACTED GEAR PREMATURELY	7 34 9 137 1 1 5 16 33	2 12 5 3	9 46 14 140 1 1 5 30 34	39 88 34 73 1 46 61 84 2 39	10 18 14 4 2 3 45	49 106 48 77 1 48 64 129 2 39 2	46 122 43 210 2 47 66 100 35 39 1	12 30 19 7 2 3 59 1	58 152 62 217 2 49 69 159 36 39
INACVERTENTLY RETRACTED GEAR FAILED TO SEE AND AVOID CTHER AIRCRAFT FAILED TO SEE AND AVOID CBJECTS OR OBSTRUCTIONS FAILED TO OBTAIN/MAINTAIN FLYING SPEED MISJUDGED. SPEED. ALTITUDE OR CLEARANCE FAILED TO MAINTAIN ADEGUATE ROTOR RPM	19 43 193 4 6	1	20 .43 194 .4 .6	18 35 159 343 22 39		18 35 159 343 22 39	18 54 202 536 26 45	1	18 55 202 537 26 45
FAILED TO USE OR INCORRECTLY USED MISC EQUIPMENT FAILED TO FOLLOW APPROVED PROCEDURES + DIRECTIVES ETC IMPROPER OPERATION OF POWERPLANT + POWERPLANT CONTROLS IMPROPER CPERATION OF BRAKES AND/OR FLIGHT CONTROLS IMPROPER OPERATION OF FLIGHT CONTROLS PREMATURE LIFT OFF IMPROPER LEVEL OFF	1 24 12 65 2 3	.9 1	3 33 12 66 2	11 96 132 124 153 59 295	9 12 6 4 3 2	20 108 138 128 156 61 296	12 120 144 124 218 61 298	11 21 6 4 4 2	23 141 150 128 222 63 299
IMPROPER IFR OPERATION IMPROPER IFR OPERATION IMPROPER IN-FLIGHT DECISIONS OR PLANNING IMPROPER COMPENSATION FOR WIND CONDITIONS INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING INADEQUATE SUPERVISION OF FLIGHT LACK OF FAMILIARITY WITH AIRCRAFT	27 53 4 46 8 9	2 14 64 1 23	29 67 4 110 9	8 129 121 366 130 56	20 7 89 1 91	149 128 455 131 147	35 182 125 412 138 65	2 34 7 153 2 114	37 216 132 565 140 179
MISMANAGEMENT OF FUEL EXERCISED POCH JUDGMENT OPERATED CARELESSLY SELECTED UNSUITABLE TERRAIN IMPRICER STARTING PROCEDURES STARTED ENGINE WITHOUT PROPER ASSISTANCE/EQUIPMENT	26 47 1 6	16 1	26 63 2 6	264 103 10 200 2	1 19 1 13	265 122 11 213 2 15	290 150 11 206 2 16	1 35 2 13	291 185 13 219 2
TAXIED/PARKED WITHOUT PROPER ASSISTANCE FAILED TO ASSURE THE GEAR WAS DOWN AND LOCKED INTIATED FLIGHT IN ADVERSE WEATHER CONDITIONS CONTROL INTERFERENCE SPONTANEOUS-IMPROPER ACTION	23	,	23	16 41 14	1 1 1 1 1 1 1	17 41 15 1	16 41 37	1 1 1 1 1 .	17 41 38 1 15 37
MISJLDGED DISTANCE, SPEED, AND ALTITUDE MISJLDGED DISTANCE AND SPEED MISJLDGED DISTANCE MISJLDGED DISTANCE MISJLDGED SPEED AND ALTITUDE MISJLDGED SPEED AND ALTITUDE MISJLDGED SPEED	6 3 1 5 4 2	1 1 1	7 4 1 6 5	27 207 1 122 39 11	.3 4 1 1 5	30 211 1 123 40 16	33 210 2 127 43 13	2 2 5	215 2 129 45 18
MISULGED SPEED AND CLEARANCE MISULGED ALTITUDE AND CLEARANCE MISULGED ALTITUDE MISULGED ALTITUDE MISULGED CLEARANCE INACEGUATE TRAINING OF STUDENT MISUNDERSTANDING OF ORDERS OR INSTRUCTIONS	1 12 19 9	1 6	1 13 25 9	16 21 37 97	4 2 2	16 21 41 99 2	17 33 56 106	1 10 2 2	17 34 66 108 2
IMPROPER RECOVERY FROM BOUNCED LANDING INCAPACITATION PHYSICAL IMPAIRMENT SPATIAL DISORIENTATION PSYOHOLOGICAL CONDITION MISUSED OR FAILED TO USE FLAPS LEFT AIRCRAFT UNATTENDED ENGINE RUNNING	1 15 18 112 2 1	1 18 1 4	1 16 36 112 3 5	137 3 11 11 21 2	1 7 19	138 3 18 11 40 2	138 18 29 123 2 22 3	1 25 1 23	139 19 54 123 3 45
FAILED TO MAINTAIN DIRECTIONAL CONTROL SELECTED WRONG RUNWAY RELATIVE TO EXISTING WIND	8		8	436 78	1 18	437 96	444 79	1 18	445 97

PILOT IN COMMAND (CONTINUED)	FATAL ACCIDENTS			NONFA	TAL ACCI	CENTS	ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
FAILEC TO ABORT TAKEOFF FAILED TO INITIATE GO-ARCUND DIRECT ENTRIES	9		9	43 108 6	1 2	44 110 6	52 108 6	1 2	53 110 6
SCETOTAL	1097	209	1306	4883	451	5334	5980	660	6640
COPILCT INADVERTENTLY RETRACTED GEAR FAILED TO OBTAIN/MAINTAIN FLYING SPEED FAILED TO USE OR INCORRECTLY USED MISC EQUIPMENT FAILED TO USE OR INCORRECTLY USED MISC EQUIPMENT FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES, ETC IMPROPER OPERATION OF POWERPLANT + POWERPLANT CONTROLS IMPROPER OPERATION OF BRAKES AND/CR FLIGHT CONTROLS IMPROPER OPERATION OF FLIGHT CONTROLS IMPROPER LEVEL OFF	1		1	1 1 1 6	. 1	1 1 2 1 6	1 1 1 1 6	1	1 1 1 2 1 6
IMPROPER COMMENSATION FOR WIND CONDITIONS LACK OF FAMILIARITY WITH AIRCRAFT MISMANAGEMENT OF FUEL SELECTED UNSUITABLE TERRAIN CONTROL INTERFERENCE SPONTANEOUS-IMPROPER ACTION MISJUDGED DISTANCE AND SPEED MISJUDGED DISTANCE AND ALTITUDE	1	1	2	1 1 1 1 1 1 2	1	1 2 1 1 1 1 1	1 2 1 1 1 1 1 2	2	1 1 1 1 1 2
MISUNDERSTANDING OF ORDERS OR INSTRUCTIONS IMPRCPER RECOVERY FROM BOUNCED LANDING FAILED TO MAINTAIN DIRECTIONAL CONTROL				1 4	1	1 1 4	1 4	1	1 1 .4
SLETOTAL	2	1	3	29	3	32	31	4	35
DUAL STUDENT DELAYED IN INITIATING GO-AROUND DIVEMTED 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 OH OBSTRUCTIONS FAILED TO OBTAIN/MAINTAIN FLYING SPEED FAILED TO MAINTAIN ADEQUATE ROTOR RPM FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES, ETC IMPROPER OPERATION OF POWERPLANT ** POWERPLANT CONTROLS IMPROPER OPERATION OF BRAKES AND/OR FLIGHT CONTROLS IMPROPER OPERATION OF FIGHT CONTROLS PREMATURE LIFT-OFF IMPROPER IN-FLIGHT DECISIONS OR PLANNING IMPROPER COMPENSATION FOR WIND CONDITIONS LACK OF FAMILIARITY WITH AIRCRAFT MISMANAGEMENT OF FUEL FAILED TO ASSURE THE GEAR WAS DOWN AND LOCKED FAILURE TO RELINQUISH CONTROL CONTROL INTERFERENCE SPONTAMEOUS-IMPROPER ACTION MISJUGGED DISTANCE AND SPEED MISJUGGED SPEED AND ALTITUDE MISJUGGED SPEED AND ALTITUDE MISJUGGED SPEED MISJUGGED CLEARANCE MISJUGGED OF FAILED MISJUGGED ON FAILED MISJUGGED AITITUDE MISJUGGED AITITUDE MISJUGGED TO PORT OF THE STAPES FAILED TO MAINTAIN DIRECTIONAL CONTROL	1 1	1	2 1	2 2 4 5 2 5 5 1 0 1 5 7 1 3 3 2 2 2 5 5 1 2 2 1 2 2 1 3 2 2 1 3 2 2 1 3 2 2 1 3 2 2 1 3 1 3	1 1 3 1 1 1	2 3 4 4 5 2 5 10 6 6 1 5 7 7 3 3 3 3 2 2 3 6 5 5 13 3 3 2 2 3 6 5 13 1 2 3 2 3 1 2 3 1 3 3 2 2 3 1 3 3 2 2 3 1 3 3 2 2 3 1 3 3 2 2 3 1 3 3 2 2 3 1 3 3 2 2 3 1 3 3 2 2 3 1 3 3 2 2 3 1 3 3 2 2 3 1 3 3 2 2 3 1 3 3 2 2 3 1 3 3 2 2 3 1 3 3 2 2 3 1 3 3 2 2 3 1 3 3 2 2 3 1 3 3 2 2 3 1 3 3 2 2 3 1 3 3 2 2 3 1 3 3 2 2 3 1 3 3 3 2 2 3 1 3 3 2 2 3 1 3 3 3 2 2 3 1 3 3 3 2 2 3 1 3 3 3 2 2 3 1 3 3 3 2 2 3 1 3 3 3 2 2 3 1 3 3 3 3	2 2 4 5 5 5 1 1 5 5 7 7 1 3 3 2 2 2 5 5 1 2 1 2 1 1 2 1 1 3 2 2 1 3 3 3 3 3 3 3	1 1 1 3	2 3 4 4 5 4 4 5 1 1 6 6 1 1 5 7 7 1 3 3 3 2 2 3 6 6 5 3 1 1 3 1 1 1 1 2 2 2 1 3
SUBTOTAL	3	1	4	144	10	154	147	11	158
CHECK PILOT IMPROPER LEVEL OFF INACEQUATE SUPERVISION OF FLIGHT LACK OF FAMILIARITY WITH AIRCRAFT	1	1	1	1 6		6	1 7	1	1 7 1

CHECK FILOT (CONTINUED)	FATAL ACCIDENTS		ENTS	NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TCTAL
EXERCISED POCR JUDGEMENT MISJUDGED ALTITUDE FAILED TO MAINTAIN DIRECTIONAL CONTROL		1	1	1 1		1 1	1 1	ı	1 1 1
SUBTOTAL	1	2	3	9		9	10	2	12
** FERSONNEL **	-	_					-	_	
FLIGHT INSTRUCTOR INADEQUATE SUPERVISION OF FLIGHT INADEQUATE TRAINING OF STUDENT MAINTENANCE, SERVICING, INSPECTION IMPROPER MAINTENANCE (MAINTENANCE PERSONNEL) IMPROPER MAINTENANCE (OWNER PERSONNEL) IMPROPERLY SERVICED AIRCHAFTIGOUND CREW) IMPROPERLY SERVICED AIRCHAFTIGOUNDER-PILOT)	3 1 1	1 2	1 2 3 1	12 9 32 6 9 2	6 10 2 1 1	18 19 34 7 10 2	12 9 35 7 9 3	7 12 2 1 1	19 21 37 8 10 3
INADEGUATE INSPECTION OF AIRCRAFT (MAINTENANCE PERSONNEL) INADEGUATE INSPECTION OF ACTT (OWNER-PILOT PERSONNEL) INADEGUATE MAINTENANCE AND INSPECTION OTHER	1 13 1	. 3	2 16 1	1 139 7	16 1	1 155 8	2 152 8	1 19 1	.3 171
OPERATIONAL SUPERVISORY PERSONNEL INACEGUATE FLIGHT TRAINING-PROCEDURES INACEGUATE GROUND TRAINING-PROCEDURES INACEGUATE SUPERVISION OF FLIGHT CREW INACEGUATE SUPERVISION/TRAINING OF RAMP CREWS DEFICIENCY, COMPANY MAINTAINED EQPT, SERV, REGULATIONS	1	1	1 1 1	1 2	1 1	1 1 1 5	1 1 2	2 1 1 3	2 1 1 2 5
WEATHER PERSONNEL INCORRECT WEATHER FORECAST				1	1	2	1	1	2
OTHER TRAFFIC CONTROL PERSONNEL FAILURE TO ADVISE OF UNSAFE AIRPORT CONDITION FAILURE TO ADVISE OF OTHER TRAFFIC INACEQUATE SPACING OF AIRCRAFT		1 2	1 2	2	1	1 1 2	2	1 1 2	1 1 1 4
OTHER AIRPORT SUPERVISORY PERSONNEL IMPROPER MAINTENANCE-AIRPORT FACILITIES FAILURE TO NOTIFY OF UNSAFE CONDITION IMPROPER/INACEOUATE SNOW REMOVAL IMPROPER OPERATION OF FACILITIES IMPROPER INSPECTION OF FACILITIES	1	7	2	1 3 3 2 2	1 2 5	2 5 8 2 4	1 3 3 2 1 2 6	8 2 5 1 2 5	5 8 2 2 4
OTHER AIRWAYS FACILITIES PERSONNEL OTHER	1		1	1	5	10	1	,	1
PRODUCTION-CESIGN-PERSONNEL SUBSTANDARD QUALITY CONTROL INCCRRECT FACTORY INSTALLATION POCR/INADEQUATE DESIGN OTHER	1 1 1	1	1 1 2	1 3 5 8	2	1 3 7 9	2 3 6 9	2	.2 3 8 11
MISCELLANEOUS-PERSONNEL PILCT OF CTHER AIRCRAFT	19	1	20	52	.3	55	71	4	7.5
GROUND SIGNALMAN SPECTATOR GROUND CREWMAN PASSENGER DRIVER OF VEHICLE OTHER DIRECT ENTRIES	2 4 1	1	3 1 4	4 14 10 5	1 4 5 1	1 5 18 15 6	2 4 18 10 5	1 1 2 4 5 1	1 3 6 22 15 6 1
THIRC PILOT FLIGHT ENGINEER IMPROPER USE OF EQUIPMENT DISPATCHING				1		1	1		1
SLBTOTAL	54	24	78	349	81	430	403	105	508
** AIRFRAME **									
WINGS SPARS RIBS, STRINGERS, CAP STRIPS WING ATTACHMENT FITTINGS, BOLTS BRACING WIRES, STRUTS SKIN AND ATTACHMENTS	5 1 2 2		5 1 2 2	1 1 1		1 1 1	6 1 1 2 3		6 1 1 2 3

	55271 401	OK IAULE								
IRFRAME (CONTINUED)	FATAL ACCIDENTS			NONF	TAL ACC	CENTS	ALL ACCIDENTS			
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	
WINGTIPS WHEEL WELL DOORS	1		· 1 ,	1		1	1		1	
OTHER USELAGE BULWHEADS				. 1		1	1		1	
SKIN AND ATTACHMENTS DOORS, DOOR FRAMES WINDSHIELDS, WINDOWS, CANOPIES		1	1	1	1	1 2	1	1	1 2 1	
SEATS WHEEL WELL DOCRS OTHER	1	i	1	2 .	1	3	2	2	4 1	
ANDING GEAR MAIN GEAR-SHOCK ABSORBING ASSY, STRUTS, ATTACHMENTS, ETC	1		1	3 21	2	5 21	4 21	2	6 21	
NOFFAL RETRACTION/EXTENSION ASSEMBLY EMERGENCY/EXTENSION ASSEMBLY TAILWHEEL ASSEMBLIES NOSEWHEEL ASSEMBLIES WHEELS, TIRES, AXLES				39 10 5 10	3 2 6	42 10 8 12 19	39 10 5 10 13	3 2 6	42 10 8 12 19	
SKI ASSEMBLIES FLCAT ASSEMBLIES BRAKING SYSTEM (NORMAL)				2 2 45	27	2 2	2	27	2 2 72	
LANCING GEAR WARNING AND INDICATING COMPONENTS GEAR LOCKING MECHANISM SHITCHES, LEVERS, CRANKING MECHANISM, ETC		1	1	12	. 21	72 22 12	45 1 12	21	22 1:2	
NOSEMPEEL STEERING OTHER DIRECT ENTRIES		•	•	2 2	1	2 2 3	2 2	1	3 2 3	
LIGHT CONTROL SURFACES ELEVATOR, ASSEMBLY ATTACHMENTS RUDCER, SURFACES ATTACHMENTS				1 2 3		1 2 3	1 2 3		1 2 .3	
AILEHON, SURFACES ATTACHMENTS HORIZONTAL STABILIZER, ATTACHMENTS VENTICAL STABILIZER, ATTACHMENTS	2	1	. 2 1	1 2	2	. 1	1 4	2	1 6	
FLAP ASSEMBLIES SPCILERS AND SLOTS-LEACING EDGE FLAPS, SPEED BRAKES OTHER DIRECT ENTRIES		•	•	1 1 3 1		1 1 3 1	1 1 3 1	•	1 1 3 1	
SUBTOTAL	14	4	18	195	69	264	209	73	282	
** PCKERPLANT **										
NGINE STRUCTURE CRANKSHAFT MASTER AND CONNECTING RODS	1		1	13 25		13 25	14 25		14 25	
CYLINDER ASSEMBLY PISTON PISTON RINGS VALVE ASSEMBLIES	1		1	10 10		10 10	11 11		11 11	
BLCWER, IMPELLER ASSEMBLY MOUNT AND VIBRATION ISOLATORS	5 1		5	19 5 1	1	20 5 1	24 5 2	1	25 -5 -2	
OTHER (GNITICN SYSTEM MACNETOES	1 3		1	16 13	2	16 15	17 16	2	17 18	
SPARK PLUG COILS LCW TENSION WIRING	1	1	2	11 1 1	1	12 1 1	12 1 1	Ĺ	14 1 1	
SWITCHES OTHER 'UEL System				1	1	1	1	1	1	
TANKS Lines and fittings Selector valves	2		2	1 8 6	1	2 8 6	1 10 6	1	10 6	
FILTERS, STRAINERS, SCREENS CARBURETOR PUMPS	1	1	2	12 17 16	1 2	12 18 18	12 17 17	1 3	12 1e 20	
FUEL INJECTION SYSTEM VENTS, DRAINS, TRANK CAPS RAW AIR ASSEMBLY	ż	•	2	9	1	10	6 9	1	6 10	
OTHER BRICATING SYSTEM		.5	2	3	2	9 5	3	4	7	
LINES, HOSES, FITTINGS /ALVES				7 3	2	9 3	7 3	2	.g	

POWERPLANT (CONTINUED)

POWERPLANT (CONTINUED)	FATAL ACCIDENTS			NONFA	TAL ACCI	CENTS	ALL ACCIDENTS		
•	CAUSE	FACT:OR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TCTAL
FILTERS. SCREENS SEALS AND GASKETS OTHER	1		1	2 1 5		2 1 . 5	2		2 1 6
COOLING SYSTEM COWLING PUMPS OTHER	•			1 1 1	1	2 1 1	6 1 1 1	1	2 1 1
PROPELLER AND ACCESSORIES BLACES HUBS HYCRAULIC PITCH CONTROL MECHANISM				11 1		11 1 1	11 1 1		11 1 1
GOVERNORS BLACE RETENTION MECHANISM OTHER EXHALST SYSTEM	1		1	1 2 4		1 2 4	2 2 4		2 2 4
MUFFLERS CLAMPS STACKS BAFFLES				2 1 1 1		2 1 1 1	2 1 1 1		2 1 1 1
EXTERNAL SUPERCHARGER ENGINE ACCESSORIES VACULW PUMPS STARTERS	1		1	š	1	1	3	. 1	3 1 1
OTHER ENGINE CONTROLS-COCKPIT THRCTTLE-POWER LEVER ASSEMBLIES MIXTURE CONTROL ASSEMBLIES	2		2	10	i .2	12	12	2	1 14 6
INDUCTION AIR, PREHEAT CONTROLS PROPELLER GOVERNOR CONTROLS OTHER POWERPLANT-INSTRUMENTS				1 1		1 1 1	1 1 1		1 1 1
PCNER INDICATORS FUEL CUANTITY GAUGE OIL PRESSURE GAUGE OTHER				1	1 19	1 19 1	1 1	19	1 1·9 1 1
MISCELLANEOUS PORERPLANT FAILURE FOR UNDETERMINED REASONS BIRC INGESTICN OTHER	20 1 1		20 1 1	176		176	196 1 1		196 1 1
REDUCTION GEAR ASSEMBLY GEARS, REDUCTION ShAFI, ACCESSORY DRIVE GEARS, ACCESSORY DRIVE				1 1 2		1 1 2	1 1 2		1 1 2
OTHER COMPRESSOR ASSEMBLY BLACE, COMPRESSOR ROTOR FAN				1 1 1		1 1 1	1 1 1		1 1 1
OTHER COMBLSTION ASSEMBLY TURBINE ASSEMBLY ACCESSCRY DRIVE ASSEMBLY				1		1	1		., 1
LUBRICATING SYSTEM FUEL SYSTEM OTHER SAFETY SYSTEM				1		1,	. 1		, 1
IGNITICA SYSTEM TORCLEMETEH AIR BLEED EXHALST SYSTEM									
THRUST REVERSER REVERSER COORS PROPELLER SYSTEM HUE				1	1	1 1	1	1	1
CONSTANT SPEED CRIVE POWER LEVER PROPELLER LEVER REVERSE THRUST LEVER								,	
OTHER ENGINE INDICATING EQUIPMENT ENGINE INSTALLATION				1		1	1		1

	C-03E/1 AC	TON TABLE	-						
POWERFLANT (CONTINUED)	FA	TAL ACCIO	DENTS	NONF	TAL ACC	IDENTS	AL	L ACCIDE	NTS
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TCTAL
SLBTOTAL	46	.4	50	469	40	509	515	44	559
** SYSTEMS **									
ELECTRICAL SYSTEM BATTERIES GENERATORS/ALTERNATORS REGULATOR MOTORS SWITCHES PROTECTIVE DEVICES	1		1	2 2 4	2 5 2	4 5 4 4	2 2 4 1	2 5 2	4 5 4 4 1
OTHER HYDRALLIC SYSTEM					4	4		4	4
RESERVOIR, LINES, FITTINGS OTHER				6 4	2	8 4	6 4	2	4
FLIGHT CONTROL SYSTEMS ALLERON AND AILERON TAB CONTROL SYSTEM ELEVATOR AND ELEVATOR TAB CONTROL SYSTEM RUCCER AND RUDDER TAB CONTROL SYSTEM WING FLAP CONTROL SYSTEM (EECTRICAL) WING FLAP CONTROL SYSTEM (MECHANICAL) FLIGHT CONTROL BOOST SYSTEM (HYDRAULIC) OTHER	1 3 1		1 3 1	5 3 4	2 1 1 1	5 3 6 1 1 1	6 6 5	2 1 1 1	6 7 1 1 1 3
ANTI-ICING, DE-ICING SYSTEMS WING ANTI-ICING, DE-ICING SYSTEMS	1		1	•		•			1
CARBURETOR DE-ICING SYSTEM PITCT ANTI-ICING SYSTEM	1		i 1	1	1	2	1 2 1	1	3
AIR CONDITION, HEATING AND PRESSURIZATION PRESSURIZATION CONTROL AND INDICATING SYSTEM	. 1		1				1		1
AUTO FILOT FIRE WARNING SYSTEM FIRE EXTINGUISHER SYSTEM OXYGEN SYSTEM	-								
CREW SYSTEM OTHER SYSTEMS		1	1			_		1	1
PITCT SYSTEM VACULM SYSTEM OTHER		1	1 1		2	2		1	2 1
SUBTOTAL	12	.3	15	32	28	1 60	44	2 31	2 75
** INSTRUMENTS/EQUIPMENT AND ACCESSORIES **	12	.,	13	32	26	00	77	31	75
FLIGHT AND NAVIGATION INSTRUMENTS								*	
ALTIMETERS AIRSPEED		1	1	1	2	1 2	1	1 2	2
ATTITUDE GYRC Directional Gyro	1	3	3 1		-	-	1	3	3
COMPASS OTHER					1	1	-	1	1
COMMUNICATIONS AND NAVIGATION EQUIPMENT TRANSMITTERS AND/OR RECEIVERS					3	3		3	3
VOR RECEIVERS OTHER		. 1	1 1		2	2		3 1	3 1
MISCELLANEOUS EQUIPMENT SPRAY, DUSTING EQUIPMENT GLIDER LAUNCH/TOW EQUIPMENT OTHER		1	1	5 1 2	4	9 1 2	5 1 2	4	9 2 2
9LBTOTAL .	1	7	8	9	13	22	10	20	30
** RCTCRCRAFT **									
ROTOR ASSEMBLIES MAIN ROTOR BLADES TAIL ROTOR BLADES MAIN ROTOR HEAD ASSEMBLIES OTHER		1	1	5 2 1		5 2 1	5 2 1	1	1 5 2 1
TRANSMISSION RCTOR DRIVE SYSTEM ENCINE DRIVE SMAFT MAIN ROTOR DRIVE SMAFT FREE WHEEL UNIT MAIN ROTOR GEAR BOX	1		1	1 1 1		1 1 1	1 1 1 1		1 1 1
•									

HOTORCHAFT (CONTINUED)

ROTORCHAFT (CONTINUED)	FATAL ACCIDENTS		ENTS			CENTS	ALL ACCIDENT		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TCTAL	CAUSE	FACTOR	TCTAL
MAIN ROTOR PLLLEYS: BELTS TAIL ROTOR DRIVE SHAFT ASSEMBLY TAIL ROTUR GEAR BOX CLUTCH ASSEMBLY OTHER	2		2	1 3 2 1 4	1	2 3 2 1 5	1 5 2 1 5	1	2 5 2 1 6
FLIGHT CONTROL SYSTEMS CYCLIC PITCH CONTROL SYSTEM TAIL ROTOR PITCH CONTROL SYSTEM OTHER	2		2	2	2 1	4 1 1	4	2	6 1 1
MISCELLANEOUS UNITS AND ASSEMBLIES EMERGENCY FLOTATION GEAR TAIL BOOMS/PYLONS/CONES OTHER	2	1	1 2	1	1	1 1	1 2	1	1 2 2
SLETOTAL	8	2	10	26	6	32	34	8	42
** AIRFORTS/AIRWAYS/FACILITIES **									
AIRPORT FACILITIES APPROACH LIGHTING RUNWAY LIGHTING RAMP FACILITIES TAXIMAY LIGHTING AND MARKING OTHER	1	1	1	3	9 2 2 12	12 2 2 16	1 3	9 2 2 13	1 12 2 2 2
AIRFORT CONCITIONS WET HUNWAY ICE/SLUSH ON HUNWAY SNCW ON RUNWAY SNCW WINDROWS UNMARKED COSTRUCTIONS SOFT SHOULDERS (RUNWAY) RCLGH WATER HIGH VEGETATION HICEDEN HAZARD POCHLY MAINTAINED RUNWAY SURFACE SOFT RUNWAY WET HAMP/TAXIWAY ICE/SLUSH ON RAMP/TAXIWAY SNCW ON RAMP/TAXIWAY SOFT SHOULDERS (RAMP/TAXIWAY) SOFT SHOULDERS (RAMP/TAXIWAY) SOFT TAXIWAY OTHER	. 1	1	1	12 8 14 16 2 19 1 5 8 7 2 1	55 14 21 13 9 22 33 8 11 22 2 1 3 2	67 22 35 29 11 41 1 38 16 18 24 3 1 3 3 1 3 3 7	12 8 14 16 2 19 1 5 8 7 2 1	55 14 21 13 10 22 33 8 11 22 2 1 3 2 1	67 22 35 12 41 1 36 16 12 24 3 1 3 3 3 3
AIRWAYS FACILITIES SUBTOTAL	2	6	8	212	490	702	214	496	710
SESTOTAL SESTIONAL SESTION	-		Ü	-10	470			470	
LOW CEILING RAIN FOG SNCW HAIL ICING CONDITIONS-INCLUDES SLEET, FREEZING RAIN, ETC CONDITIONS CONDUCIVE TO CARB/INDUCTION SYSTEM ICING UNFAVORABLE WIND CONDITIONS SUCCEN WINDSHIFT TURBLUENCE IN FLIGHT, CLEAR AIR TURBLUENCE ASSOCIATED WITH CLOUDS AND/OR THUNDERSTORMS DOWNDRAFTS, LOPORAFTS LOCAL WHIRLWIND LIGHTNING STRIKE SCLALL LINE ADVENSE WINDS ALOFT HIGH TEMPERATURE OBSTRUCTIONS TO VISION HIGH DENSITY ALTITUDE THUNDERSTORM ACTIVITY OTHER	4 2 1 1 2 6 4 1	173 76 119 33 1 20 8 10 1 21 6	177 76 121 34 12 18 12 17 10 11 22 20 6	3 1 2 7 88 11 3 2 14 7	59 34 56 11 44 45 242 15 45 45 1 1 1 4 17 4 4 6 2 10	62 34 57 11 16 52 330 26 10 17 59 8 1 4 17 65 27 10	7 3 1 3 7 90 11 3 8 18 7 1	232 110 175 44 2 34 53 252 15 8 36 51 1 2 4 20 15 84 44 44	739 110 178 45 27 60 342 26 11 44 69 8 1 20 17 87 47 16
SUBTOTAL	25	527	552	144	669	813	169	1196	1365

5. 5									
TERRAIN (CONTINUED)	FAT	AL ACCIO	ENTS	NONFA	TAL ACCI	CENTS	AL	L ACCIDE	NTS.
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TCTAL
SO TERRAIN SO									
WET, SOFT GHOUND SNOW-COVERED ICY		1 4	1 4	59 5	41 14 1	100 19 1	59 5	42 18	101 23 1
HIGH VEGETATION HICCEN OBSTRUCTIONS ROUGH/UNEVEN	1	2	1 3	43 17 173	40 14 101	83 31 274	43 18 174	40 14 103	83 32 277
RCLGF WATER GLASSY WATER HIGH OBSTRUCTIONS LOCSE GRAVEL	8	1 161	1 169	3 142	1 8 418	4 8 560 1	3 150	1 9 5 7 9 1	4 9 729 1
SANCY OTHER	2 4	1 20	3 24	11 78	1 15 83	26 161	13 · 82	16 103	29 185
SLBTOTAL	16	190	206	531	737	1268	547	927	1474
** WISCELLANECUS **									
BIRC COLLISION VORTEX TURBULENCE PROPYJETYROTOR BLAST ANIMAL(S) ON RUNWAY/TAXIWAY/RAMP	2		2	3 12 2 7	1	3 12 2 8	3 14 2 7	1	14 2 8
STATIC DISCHARGE EVASIVE MANELVER TO AVCIC CCLLISICN UNCLALIFIED PERSON OPERATED AIRCHAFT SUICIDE	7 1 2	4 4	11 5 2	67 7	1 19 8	1 86 15	74 8 2	1 23 12	1 97 20 2
FOREIGN OBJECT DAMAGE SMCKE IN COCKPIT FOREIGN MATERIAL AFFECTING NORMAL OPERATIONS UNCETERMINED	5 54	1,	1 5 54	4 2 53 21	1 3 7	5 5 60 21	4 2 58 75	1 4 7	5 6 65 75
DIRECT ENTRIES	3		.3	9		9	12		iž
SUBTOTAL	74	9	83	187	40	227	261	49	310
GHAND TOTAL 44 MISCELLANEOUS ACTS + CONDITIONS 44	1355	989	2344	7219	2637	9856	8574	3626	12200
ALTIMETER SETTING-INCORRECT	1	1	2	2		2	3	1	4
ANTI-ICING/DEICING EQUIP-IMPROPER OPER. OF/FAILED TO USE CHECKLIST-FAILED TO USE	4	2	4 2	49	33	49 34	53 1	35	53 36
CREW COORDINATION-POOR DISHEGARD OF GOOD OPERATING PRACTICE	1	1	2 4	4	12	16	1 5	1 15	2 20
IMPROPER EMERGENCY PROCEDURES GUST LOCKS ENGAGED	3	12	15	14	12	26	17	24	41
INSTRUCTIONS-MISINTERPRETED INSTRUMENTS-MISREAD OR FAILED TO READ	1 2	1	1 3	1 8	3 2	10	2 10	3	13
SEAT BELT NOT FASTENED NOT ALLIGNED WITH RUNWAY/INTENDED LANDING AREA	-	2	2	19	21	40	19	2 25	2
UNWAFRANTED LOW FLYING FAILED TO USE ALL AVAILABLE RUNWAY	39	20 5	59 5	29 6	11	40 10	68	31	95 15
LANCED AT WRONG AIRPORT		5			5	5	6	5	5
INATTENTIVE TO FUEL SUPPLY FLEW INTO BLIND CANYON	1 10	4	1 14	17 7	5	22 7	.18 17	5	23
PREMATURE FLAP RETRACTION POCKLY PLANNED APPROACH		7	7	1 13	1 53	2 66	1 13	1 60	73
MISCALCULATED FUEL CONSUMPTION JETTISONED LCAD STCLEN OR UNAUTHORIZED USE OF AIRCRAFT LANCED ON FOAMED RUNWAY		2 5	2 5	17 1 1	7 24 14	24 25 15	17 1 1	7 26 19	24 27 20 3
CORRECTING LENSES-NOT USED		1	1		3	3		1	1
IMPROPERLY SECURED BOGUS PART	3 1		3 1	11	5	16	14	5	19
ELECTRICAL FAILURE ENGINE LOADED UP				3 13	12	15 13	3 13	12	15 13
EXPLOSIVE DECOMPRESSION FATIGUE FRACTURE	1 8		1 8	35		35	1 43		1 43
FUEL GRADE-IMPROPER HYDRAULIC FAILURE	1		1	1 2	2	1 4	2	2	2
REM-UNCONTROLLABLE-OVERSPEED	1		1	-	-	,	. 1		i

•	GPG3C/1 AG1	011 17000	•						
MISCELLANEOUS ACTS, CONDITIONS (CONTINUED)	FAT	AL ACCIO	DENTS	NONF A	TAL ACCI	CENTS	AL	L ACCIDE	NTS
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TCTAL	CAUSE	FACTOR	TCTAL.
THRUST REVERSAL-ASYMETRICAL				1		1	1		1
THRUST REVERSAL-UNWANTED WINDSHIELD, DIRTY, FOGGY, ETC-RESTRICTED VISION WRCNG PART	1	1	1	1 6 2	12	1 18 2	2 6 2	13	2 19 2
IMPROPER ALIGNMENT/ADJUSTMENT FAILLRE OF TWO OR MORE ENGINES SEPARATION IN FLIGHT	2	5 44	2 5	13 12	1 e	14 20	15 12	1 13 70	1 <i>6</i> 25
FIRE IN CABIN/ COCKPIT/ BAGGAGE COMPARTMENT FIRE IN ENGINE	2	1 3	45 1 5	1 8	26 2	27 2 10	2 10	3	72 3 15
LATERAL IMBALANCE CCRRCDED/CCRRCSION INCCRRECT TRIM SETTING	1	1	2	2 11	2 2 1	13 1	12	2 3 2	4 15 2
CARGC SHIFTED CONGESTED TRAFFIC-PATTERN		î 2	ī 2	1	1 6	ī 7	1	2 8	2 9
PILCT FATIGUE FUEL EXHAUSTICN FUEL CONTAMINATION-EXCLUSIVE OF WATER IN FUEL	1 16 2	14	15 17 2	180 5	25	25 180 5	1 196 7	39 1	40 197 7
PILCT SUFFEREC HEART ATTACK ALCOPOLIC IMPAIRMENT OF EFFICIENCY AND JUDGMENT HYPCXIA	7 16 1	13	7 29 2	3	2	5 1	7 19	15	7 34 3
CARECA MONOXICE POISONING ICE-IN FUEL	ž	1	2	1 4	•	1 4	3	2	3
ICE-CARBURETCH ICE-PROPELLER AIRFRAME ICE	4	4	9	49 2 10	-4	49 2 14	53 2 15	В	53 2 23
ICE-WINDSHIELD IMPROPERLY LCADED AIRCRAFT-WEIGHT-AND/OR CG INTERFERENCE WITH FLIGHT CONTHOLS	4	12	1 16	1 12 16	16 2	5 28 18	1 16 16	28 2	6 44 18
WHITECUT SUNGLARE	1	6	7	1	2 22	2 23	2	2 28	30
LACK OF LUBRICATION-SPECIFIC PART, NOT SYSTEM OIL EXHAUSTION-ENGINE LUBRICATION SYSTEM OIL EXHAUSTICN-PROPELLER SYSTEM	. 1		1	9 15 2	2	11 15 2	10 16 2	2	12 16 2
SIMULATED CONCITIONS FUEL SIPHCNING WATER IN FUEL	1		1 5	20 3 35	40	60 3 35	21 3 40	40	61 3 40
AIRCRAFT CAME TO REST IN WATER FRCZEN, MOISTURE MISSING	2	37	37 2	3	76 1	76 4	3	113 1 1	113 4 13
TOUCH AND GO LANDING HYCRCPLANING CN WET RUNWAY		1	1	10 3	1 69	11 69 3	12	70	70
OVERLOAD FAILLRE MATEFIAL FAILLRE FUEL STARVATION	29 9 15	14	43 11 15	7 171 155	575 14 1	582 185 156	36 180 170	589 16 1	625 196 171
OIL STARVATICN IMPROPER CLEARANCE-TOLERANCE FUEL SELECTOR POSITIONEC BETWEEN TANKS	2	1	3	1 7 4	2	1 9 4	1 9 7	3	1 12 7
FIRE OF UNDETERMINED ORIGIN UNAPPROVED MCCIFICATION	ĭ	2 1	3 1	3	1 1	1 4	1 3	3 2	4 5
IMPROPERTINACEGUATE VENTING ACTICN: LACK OF POOR WELD	2	1	3	1		1	1 1 2	1	1 1 3
PREVIOUS DAMAGE Brakes frozen Leak/leakage	1	3	4 3	14 2 16	11	25 2 19	15 2 17	14	- 29 2 22
LOW FLUID LEVEL CIRCLIT BREAKER POPPED	•	-	ŭ	3	1 11	13	3 2	11	4 13
LCW CCMPRESSION RUNHAY CLOSEC DOWNNIND		6	6	1 1 1	4 139	1 5 140	, 1 1 1	4 145	1 5 146
CARECN DEPOSITS LANCED IN CONSTRUCTION AREA OVER TORQUED		1	1	2 1 2	1	2 2 2	2 1 2	1	3 2 2
UNDER TORQUED LOCSE, PART/FITTING GROUND RESONANCE	1		1	4 7 2		4 7 2	4 8 2		4 e · 2
BENT BINCING				7 4	2	7 6	7 4	2	7 6
BUCKLED . BURST Chaffed .				2 3 3	1	3 3 3	2 3 3	1	3 3 3
COLLAPSED				ì		ì	ì		ī

MISCELLANEOUS ACTS, CONDITIONS (CONTINUED	1)		FATAL ACCIDENTS			NONFA	TAL ACCI	DENTS	ALL ACCIDENTS		
		,	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TCTAL
CRCSSED DETERICRATED DISCONDECTED ELCONDECTED EXCESSIVE-WEAR/PLAY ERRATIC FLUCTUATING			t 9 .	1	1 9	1 2 34 3 11	3 1 15 1	1 2 37 3 12 15	1 2 43 3 11	1 3 1 15	1 3 46 3 12 15
FLUTTER FRAYED FRICTION, EXCESSIVE GROUNDED IMPREPERLY INSTALLED JAMMED NICKED OBSTRUCTED OPEN OVERHEATED			4	1	5	1 2 1 2 11 14 15 1	3 1 1 1	1 2 1 2 14 15 1 16 1 3	1 2 15 15 14 16 1	4 1 1 1	1 2 1 2 15 15 1 17 1
PINOHED PRESSURE TOO LOW PRESSURE, NONE SCCHED SHEAHED STICKING STIIFFED			1		1	6 1 4 2 1	. 3,	1 9 1 4 2	6 1 1 4 2	1 3	1 1 1 4 2
STLCK EXCESSIVE TEMPERATURE TEMPERATURE TCO LOW VIBRATION, EXCESSIVE WARFEC CCNCESTED RAMP/TAXIWAY ICE-INDUCTION FIRE IN WING LOAC NOT JETTISONED	:	٠.	1 2	1	1 3	5 1 1 3 1 2 3	1 6 10	6 1 1 9 1 12 3	5 1 3 1 2 4 2	6 10 1 21	7 1 1 5 1 12 4 3 25
INTENTIONAL GROUND-WATER LOOF-SWERVE INTENTIONAL WHEELS UP						35 39	9	44	35 39	9	44

DIRECT ENTRY CAUSES

DIRECT ENTHY CAUSES

PILCIT-FAILED TO ARREST HIGH SINK HATE CRG LDG
PILCIT-INTENTIONALLY NOSED ACFT OVER ON BACK
MISC-PARACHUTE CPENED INADVERTENTLY IN CABIN.
MISC-INFLT COLLISION WITH UNKN OBJECT.
MISC-INADVERTENT ENGINE START
SEAT THACK SAFETY BLOCK MISSING. SEAT WOULD LOCK OK
FLT CONTROLS-AERODYNAMIC LOSS OF ELEVATOR CONTROL
MISC-FILOT BLINCED BY LIGHTNING FLASH
PILOT-EXCESSIVE TAXI SPEED FOR CONDITIONS
PILCT-SETTLED WITH PWR INTO TALL CORN.
LDG GR-L GR NOT LOCKED BFF T/C DUE INSF EXTN TIME.
MISC-TCW ROPE FAILED TO RELEASE FOR UNDITRND REASON
PLT-LCSS OF CTL AT ALT TOC LOW TO EFFECT RCVRY.
ROTGRCRAFT - MISC EXTERNAL CARGO SLING.
POWER SETTLING.
PILCT IN COMMAND - MISREAD ALTIMETER
PILOT IN COMMAND - ALLOWED CABLE TO STRIKE T/R
PILCT-EXCEEDED PERFORMANCE CAPABILITY OF ACFT.
MISC-LCSS OF CORTROL FOR UNDETERMINED REASON
PLT-SCENDED HERORMANCE CAPABILITY OF ACFT.
MISC-LCSS OF CORTROL FOR UNDETERMINED REASON
PLT-SCENDED HERORMANCE CAPABILITY OF ACFT.
MISC-LCSS OF CORTROL FOR UNDETERMINED REASON
PLGT-SUMPLED HERORMANCE CORTIFIED HEROSON
PLGT-SLIPPED IN BOARDING ACFT.FELL TO GRND.
PERSONNEL-FAA INADEQUATE OBST CLNC GUIDANCE

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

INSTRUCTIONAL ALL OPERATIONS

EXCLUDES ACCIDENTS WITHOUT CAUSAL ASSIGNMENT

INVOLVES 585 TOTAL ACCIDENTS
INVOLVES 49 FATAL ACCIDENTS

		FAT	AL ACCID	ENTS	NONFA	TAL ACCI	DENTS	ALL ACCIDENTS			
	BROAD CAUSE/FACTOR	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TCTAL*	CAUSE	FACTOR	TCTAL*	
	PILCT	44 89•80	12 24•49	45 91.84	480 89•55	61 11•38	481 89•74	524 89•57	73 12•48	526 89.91	
	PERSCNNEL	3 6.12	5 10.20	7 14•29	57 10.63	20 3.73	75 13.99	60 10.26	25 4•27	82 14.02	
	AIRFRAME	1 2•04	1 2.04	1 2.04	3 •56	1 •19	.4 •75	4 •68	2 •34	85	
	LANDING GEAR	.00	.00	.00	18 3.36	5 •93	23 4•29	18 3.08	5 •85	23 3•93	
- 44	PCWERPLANT	4 8•16	.00	4 8•16	50 9•33	.37	52 9•70	54 9•23	2 •34	56 9∙57	
•	SYSTEMS	•00	•00	.00	4 •75	2 •37	6	4 •68	2 •34	6 1.03	
	INSTRUMENTS/EQUIPMENT AND ACCESSORIES	•00	.00	.00	1 •19	1 •19	2 •37	1 •17	1 •17	.34	
	RCTCRCFAFT	•00	.00	.00	2 •37	•00	2 •37	2 • 34	.00	.34	
	AIRACRTS/AIRWAYS/FACILITIES	.00	.00	.00	42 7 . 84	65 12.13	103 19.22	42 7 . 18	65 11 . 11	103 17.61	
	WEATHER	•00	.4 8.16	4 8.16	22 4.10	64 11•94	86 16.04	22 3•76	68 11.62	90 15•38	
	TERRAIN	1 2.04	3 6.12	8.16	71 13•25	71 13•25	139 25•93	72 12•31	74 12.65	143 24.44	
	MISCELLANEOUS	.00	2.04	1 2.04	18 3.36	.75	22 4.10	18 3.08	5 •85	23 3.93	
	UNDETERMINED	2 4•08	.00	2 4.08	.00	.00	.00	2 •34	.00	.34	

^{*} 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 (PLEASURE/PERSONAL TRANSPORTATION) ALL OPERATIONS EXCLUDES ACCIDENTS WITHOUT CAUSAL ASSIGNMENT

INVOLVES 2168 TOTAL ACCIDENTS
INVOLVES 400 FATAL ACCIDENTS

, 7

		FATAL ACCIDENTS				NONFATAL ACCIDENTS			ALL ACCIDENTS		
	BROAD CAUSE/FACTOR	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	T∩TAL*	CAUSE	FACTOR	TOTAL*	
	PILOT	354 88•50	110 27.50	360 90.00	1538 86.99	221 12.50	1546 87•44	1892. 87•27	331 15•27	1906 87•92	
	PERSONNEL	23 5 • 75	6 1•50	27 6.75	136 7•69	30 1.70	165 9.33	159 7.33	36 1 •66	192 8.86	
	AIRFRAME	6 1.50	•00	6 1.50	15 •85	3 •17	18 1.02	21 •97	3 •14	24 1•11	
	LANDING GEAR	•00	•00	•00	62 3•51	34 1•92	93 5•26	62 2•86	34 1 •57	93 4•29	
54 ء	POWERPLANT	21 5•25	.00	21 5.25	204 11.54	20 1.13	222 12.56	225 10.38	20 •92	243 11.21	
1	SYSTEMS	4 1.00	1 • 25	5 1.25	10 •57	. 16 •90	25 1.41	14 •65	17 •78	30 1.38	
	INSTRUMENTS/EQUIPMENT AND ACCESSORIES	•00	4 1.00	4 1.00	.00	5 . •28	5 •28	•00	9 .42	9 •42	
	ROTORCRAFT	•00	•00	•00	3 •17	•00	3 •17	3 •14	•00	3 •14	
	AIRPORTS/AIRWAYS/FACILITIES	•00	4 1.00	4 1.00	108 6.11	275 15.55	371 20.98	108 4.98	279 12.87	375 17 . 30	
	WEATHER	17 4•25	158 39.50	168 42.00	74 4•19	320 18.10	388 21.95	91 4.20	478 22.05	556 25•65	
	TERRAIN	10 2.50	113 28.25	123 30.75	256 14.48	364 20.59	614 34.73	266 12•27	477 22.00	737 33 . 99	
	MISCELLANEOUS	13 3.25	5 1•25	18 4.50	80 4•52	25 1.41	104 5.88	93 4 . 29	30 1.38	122 5.63	
	UNDETERMINED	25 6 • 25	.00	25 6•25	8 • 45	•00	8 •45	33 1.52	2 .00	33 1.52	

^{*} 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 (BUSINESS) ALL OPERATIONS

EXCLUDES ACCIDENTS WITHOUT CAUSAL ASSIGNMENT

INVOLVES 293 TOTAL ACCIDENTS
INVOLVES 68 FATAL ACCIDENTS

		FATAL ACCIDENTS				TAL ACCI	DENTS	ALL ACCIDENTS		
	BROAD CAUSE/FACTOR	CAUSE	FAC TOR	TOTAL*	CAUSE	FAC TOR	TOTAL*	CAUSE	FACTOR	TOTAL*
	PILOT	56 82•35	19 27•94	57 83•82	191 84•89	20 8•89	193 85•78	247 84•30	39 13•31	250 85•32
	PERSONNEL	2 2•94	2 2•94	4 5•88	24 10•67	6 2•67	30 13•33	26 8•87	8 2•73	34 11.60
	AIRFRAME	•00	•00	•00	•00	•00	•00	•00	•00	•00
	LANDING GEAR	•00	.00	•00	18 8.00	5 2•22	23 10•22	18 6•14	5 1•71	23 7.85
- 46	POWERPLANT	5 7 . 35	1 1.47	6 8.82	20 8•89	1 •44	21 9.33	25 8•53	2 •68	27 9•22
	SYSTEMS	1 1•47	1 1•47	2 2•94	1 •44	3 1•33	4 1•78	2 •68	4 1•37	6 2•05
	INSTRUMENTS/EQUIPMENT AND ACCESSORIES	•00	1 1•47	1 1•47	1 • 44	•00	1 •44	1 •34	1 •34	2 •68
	ROTORCRAFT	1 1•47	00	1 1•47	4 1•78	1 •44	4 1•78	5 1.71	1 •34	5 1•71
	AIRPORTS/AIRWAYS/FACILITIES	•00	•00	•00	15 6•67	25 11•11	39 17•33	15 5•12	25 8•53	39 13•31
	WEATHER	3 4•41	46 67•65	47 69•12	14 6•22	47 20•89	57 25•33	17 5.80	93 31.74	104 35•49
	TERRAIN	2 2•94	17 25•00	19 27•94	28 12•44	53 23•56	81 36.00	30 10•24	70 23.89	100 34•13
	MISCELLANEOUS	2 2•94	•00	2 2•94	6 2•67	•00	6 2•67	8 2•73	•00	8 2.73
	UNDETERMINED	9 13•24	•00	9 13•24	1 • 44	•00	1 •44	10 3.41	•00	10 3•41

^{*} 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

4 "/ "-4

NONCOMMERCIAL (CORP/EXECUTIVE) ALL OPERATIONS

EXCLUDES ACCIDENTS WITHOUT CAUSAL ASSIGNMENT

INVOLVES 89 TOTAL ACCIDENTS
INVOLVES 23 FATAL ACCIDENTS

	FAT	AL ACCID	ENTS	NONFATAL ACCIDENTS			ALL ACCIDENTS		
BROAC CAUSE/FACTOR	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
PILOT	19 82.61	6 26.09	19 82.61	51 77 . 27	8 12.12	51 77•27	70 78.65	14 15.73	70 78.65
PERSCNNEL	3 13•04	1 4•35	4 17•39	7 10.61	2 3.03	9 13.64	10 11•24	3 3.37	13 14.61
AIRFRAME	•00	•00	•00	1 1•52	1 1.52	2 3.03	1 1.12	11.12	2 2.25
LANDING GEAR	.00	.00	.00	10 15•15	2 3.03	12 18.18	10 11.24	2 2•25	12 13.48
POWERPLANT	4 17.39	1 4.35	4 17•39	2 3.03	2 3.03	4 6.06	6 6•74	3 3•37	e 8•99
ち ・ SYSTEMS	•00	.00	.00	1 1.52	.00	1 1.52	1 1.12	.00	1 1.12
INSTRUMENTS/EQUIPMENT AND ACCESSORIES	•00	1 4.35	1 4.35	•00	.00	•00	.00	1 1.12	1 1.12
ROTOFCFAFT	•00	.00	.00	2 3.03	.00	2 3.03	2 2•25	•00	2 2•25
AIRPCRTS/AIRWAYS/FACILITIES	1 4•35	. 00	1 4.35	12 18.18	7 10.61	19 28.79	13 14.61	7 7.87	20 22.47
WEATHER	1 4.35	12 52 . 17	13 56.52	.00	12 18.18	12 18.18	1 1.12	24 26•97	25 28.09
TERRAIN	1 4•35	.4 17.39	5 21.74	5 7 . 58	10 15•15	14 21.21	6 6.74	14 15•73	19 21.35
MISCELLANEOUS	2 8.70		. 2	2 3.03	1 1.52	3 4.55	4 4•49	1 1.12	5 5.62
UNDETERMINED	2 8.70	.00	2 8.70	2 3.03	.00	2 3.03	4 4•49	.00	.4 4.45

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

COMMERCIAL (AERIAL APPLICATION) ALL OPERATIONS

EXCLUDES ACCIDENTS WITHOUT CAUSAL ASSIGNMENT

INVOLVES 414 TOTAL ACCIDENTS
INVOLVES 47 FATAL ACCIDENTS

	FAT	NONFA	TAL ACCI	DENTS	ALL ACCIDENTS				
BROAD CAUSE/FACTOR	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TCTAL*
PILCT	38 80.85	8 17.02	39 82 . 98	274 74.66	24 6.54	276 75•20	312 75.36	32 7.73	315 76.09
PERSCNAEL	5 10.64	1 2•13	6 12.77	38 10•35	5 1•36	43 11.72	43 10.39	6 1.45	49 11•84
AIRFRAME	1 2•13	.00	1 2.13	5 1.36	•00	5 1.36	6 1.45	.00	6 1.45
LANDING GEAR	.00	•00	.00	13 3.54	6 1.63	19 5.18	13 3.14	6 1.45	1·9 4•59
, POWERPLANT	2 4•26	.00	2 4.26	85 23 . 16	8 2.18	92 25•07	87 21.01	8 1.93	94 22 . 71
SYSTEMS	•00	1 2.13	1 2.13	3 •82	1 •27	4 1.09	3 •72	2 •48	5 1.21
INSTRUMENTS/EQUIPMENT AND ACCESSORIES	.00	.00	.00	5 1.36	4 1.09	9 2•45	5 1.21	4 •97	2.17
ROTORCRAFT	1 2•13	.00	1 2.13	6 1.63	.00	6 1•63	7 1.69	.00	7 1.69
AIRPORTS/AIRWAYS/FACILITIES	•00	•00	.00	9 2•45	16 4.36	25 6.81	9 2 . 17	16 3.86	25 6.04
WEATHER	.00	4 8.51	8.51	4 1.09	36 9.81	40 10.90	4 •97	40 9.66	44 10.63
TERRAIN	1 2•13	16 34.04	17 36.17	84 22•89	122 33•24	204 55•59	85 20.53	138 33.33	221 53•38
MISCELLANEOUS	•00	.00	.00	20 5.45	7 1.91	26 7.08	20 4.83	7 1.69	26 6.28
UNDETERMINED	6 12•77	•00	6 12•77	3 •82	.00	3 •82	9 2 . 17	.00	9 2 . 17

^{* 1}F 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

EXCLUDES ACCIDENTS WITHOUT CAUSAL ASSIGNMENT

INVOLVES 159 TOTAL ACCIDENTS
INVOLVES 41 FATAL ACCIDENTS

		FAT	AL ACCIDE	NTS	NONFATAL ACCIDENTS			ALL ACCIDENTS		
	BROAD CAUSE/FACTOR	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	T-CTAL*
	PILOT	33 80.49	10 24•39	33 80.49	85 72.03	25 21•19	87 73.73	118 74.21	35 22.01	120 75.47
	PERSCNNEL	4 9.76	2 4.88	6 14.63	21 17.80	8 6•78	26 22.03	25 15.72	10 6.29	32 20.13
	AIRFRAME	1 2.44	1 2.44	2 4.88	.00	.00	.00	1 •63	1 •63	2 1.26
	LANDING GEAR	.00	.00	.00	12 10.17	4 3.39	15 12•71	12 7.55	4 2•52	15 9.43
- 49	POWERPLANT	1 2.44	.00	1 2.44	23 19.49	1 •85	24 20.34	24 15.09	1 •63	25 15.72 ,
9	SYSTEMS	3 7.32	.00	3 7•32	1 •85	1 •85	2 1.69	4 2•52	1 •63	5 3.14
	INSTRUMENTS/EQUIPMENT AND ACCESSORIES	1 2.44	1 2.44	2 4•88	.00	.00	00	1 •63	1 .63	2 1.26
	ROTOFCFAFT	2 4.88	.00	2 4.88	3 2.54	3 2.54	6 5.08	5 3.14	3 1.89	8 5.03
	AIRPCFTS/AIRWAYS/FACILITIES	•00	2 4.88	2 4.88	7 5•93	24 20•34	31 26.27	7 4.40	26 16.35	33 20.75
	WEATHER	.00	23 56.10	2 3 56.10	8 6.78	26 22.03	34 28.81	8 5.03	49 30.82	57 35.85
	TERRAIN	.00	10 24•39	10 24.39	14 11•86	20 16.95	34 28.81	14 8.81	30 18.87	44 27•67
	MISCELLANEOUS	.00	.00	.00	7 5.93	.00	7 5.93	7 4.40	.00	7 4.40
	UNDETERMINED	4 9 . 76	.00	4 9.76	.00	.00	.00	2.52	.00	4 2.52

^{*} 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

KIND OF FLYING BY INJURY INDEX ALL OPERATIONS

	4 PT	A SER	NIK	10 ⁴ 0 ⁶	RECORDS	ACCIDENTS	PERCENT
INSTRUCTIONAL							
DUAL	25	15	30	169	239	239	5.55
9010	11	12	23	126	172	. 172	4.00
CHECK	3	2	1	12	18	18	•42
TRAINING	11	16	26	107	160	160	3.72
NCNCOMMERCIAL							
PLEASURE	409	206	318	1284	2217	2206	51.51
PRACTICE	10	15	20	102	147	147	3.42
BUSINESS	72	27	30	176	305	305	7.09
GCRPORATE/EXECUTIVE	24	1	9	60	94	94	2.18
AERIAL SURVEY	3		2	3	8	8	. 1·9
CCMPANY FLIGHT							
CTHER	1	1	1	5	8	8	. 1.9
CCMMERCIAL							
AERIAL APPLICATION	31	43	42	133	249	249	5.79
CRCP CONTROL RELATED FLIGHT	12	5	10	119	146	146	3.39
FIRE CONTROL	5	2		2	9	8	.21
FIRE CONTROL RELATED FLIGHT	1	3	2	6	12	12	.28
AERIAL MAPPING/PHOTOGRAPHY	4		2	9	15	15	.35
AERIAL ADVERTISING	2	1	2		5	5	• 1.5
POWER AND PIPELINE PATROL	6	1	1	7	. 15	15	.35
FISH SPOTTING				2	2	2	.05
AIR TAXI-PASSENGER OPERATIONS	27	9	18	57	111	110	2.58
AIR TAXI-CARGO OPERATIONS	15	9	5	25	54	53	1.25
CONSTRUCTION WORK	2	1	1	4	8	8	. 1.9
SCHEDULED PASSENGER SERVICE							
SCHEDULED CARGO SERVICE							
INTRA-STATE CHARTER PASSG.			2	2	4	4	.09
INTRA-STATE CHARTER CARGO.	1			1	2	2	.05
MILITARY CONTRACT-PASSENGER							
⊁ILITARY CONTRACT-CARGO							
CHARTER CARGO-DOMESTIC				3	3	3	.07
CHARTER PASSG-DOMESTIC		1	3		4	4	.09
CHARTER-CARGO-INTERNATIONAL	2				2	2	.05
CHARTER-PASSG-INTERNATIONAL		1	2	1	4	4	.09
OTHER	1	2	1	7	11	10	•26

KIND OF FLYING	4ATA'	SERIC	WIHO	404E		RECORDS	ACCIDENTS	PERCENT
UNKNOWN/NOT REPORTED								
MISCELLANEOUS								
EXPERIMENTATION	1			1		2	2	.05
TEST	13	4	7	20	,	44	44	1.02
CEMONSTRATION	4	1	4	12		21	21	•49
FERRY	11	6	16	60		93	93	2.16
SEARCH AND RESCUE	2	3	4	4		13	13	.30
AIR SHOW/AIR RACING	3		1	6		10	9	.23
PARACHUTE JUMP	2	1	7	11		21	21	.49
PARACHUTE JUMP-AIR SHOW								
TCWING GLIDERS	2	1.	1	6		10	10	.23
SEEDING CLOUDS								
HUNTING	3	2	2	5 ,		12	11	.28
PCLICE PATROL	4	2	2	5		13	13	.30
HIGHWAY TRAFFIC ADVISORY				1		1	1	• 02
ALL OTHER PUBLIC FLYING	4	4	1	8		17	16	.39
CTHER	2	1	1	5		9	9	•21
UNKNOWN/NOT REPORTED	7	1		6		14	14	.33
RECCRDS	736		597			4304		
ACCIDENTS	723	395	592	2545			4255	
PERCENT	17.1	9.3	13.9	59.8				

AIRCRAFT DAMAGE BY KIND OF FLYING ALL OPERATIONS

KIND OF FLYING	OF.	JROYED SUB	STANTIA	DR MON	•	RECORDS	ACCIDENTS	PERCENT
INSTRUCTIONAL								
DUAL	39	197		3		239	239	5.55
SOLO	23	148	1			172	172	4.00
CHECK	. 4	14				18	18	.42
TRAINING	26	134				160	160	3.72
NONCOMMERC I AL								
PLEASURE	558	1635	14	10		2217	2206	51.51
PRACTICE	20	125	2			147	147	3.42
BUSINESS	91	213		1		305	305	7.09
CORPORATE/EXECUTIVE	28	66				94	94	2.18
AERIAL SURVEY	3	5				8	. 8	•19
COMPANY FLIGHT								
OTHER	· 2	6				8	8	•19
COMMERCIAL								
AERIAL APPLICATION	95	151	1	2		249	249	5.79
CROP CONTROL RELATED FLIGHT	26	119	1			146	146	3.39
FIRE CONTROL	7	2				9	А	.21
FIRE CONTROL RELATED FLIGHT	5	7				12	12	•28
AERIAL MAPPING/PHOTOGRAPHY	4	11				15	15	.35
AERIAL ADVERTISING	2	3				5	5	•12
POWER AND PIPELINE PATROL	8	7				15	15	•35
FISH SPOTTING	1	1				2	2	.05
AIR TAXI-PASSENGER OPERATIONS	37	70	2	2		111	110	2.58
AIR TAXI-CARGO OPERATIONS	25	28	1			54	53	1.25
CONSTRUCTION WORK	1	7				8	8	•19
SCHEDULED PASSENGER SERVICE								
SCHEDULED CARGO SERVICE								
INTRA-STATE CHARTER PASSG.		4				4	4	•09
INTRA-STATE CHARTER CARGO.		2				2	2	•05
MILITARY CONTRACT-PASSENGER								
MILITARY CONTRACT-CARGO								
CHARTER CARGO-DOMESTIC	1	2				3	3	.07
CHARTER PASSG-DOMESTIC	2	2				4	4	•09
CHARTER-CARGO-INTERNATIONAL	1	1				2	2	•05
CHARTER-PASSG-INTERNATIONAL	1	3				4	4	•09
OTHER	3	8				11	10	•26

KIND OF FLYING UNKNOWN/NOT REPORTED MISCELLANEOUS	oksiko*	SUBSTANT	OR NORE	RECORDS	ACCIDENTS	PERCENT .
EXPERIMENTATION	1	1		2	2	•05
TEST	20	24		44	44	1.02
DEMONSTRATION	6	15		21	21	.49
FERRY	20	73		93	93	2.16
SEARCH AND RESCUE	4	9		13	13	.30
AIR SHOW/AIR RACING	5	5		10	9	.23
PARACHUTE JUMP	4	16	1	21	21	•49
PARACHUTE JUMP-AIR SHOW						
TOWING GLIDERS	3	6 1		10	10	.23
SEEDING CLOUDS						
HUNTING	5	6	1	12	11	•28
POLICE PATROL	5	8		13	13	.30
HIGHWAY TRAFFIC ADVISORY		1		. 1	1	•02
ALL OTHER PUBLIC FLYING	5	11 1		17	16	•39
OTHER	4 .	5		9	9	•21
UNKNOWN/NOT REPORTED	7	7		14	. 14	.33
RECORDS	1102 31	58 24	20	4304		
ACCIDENTS	1097 31	39 24	20		4255	
PERCENT	25.6 73	.4 .6	.5			

INJURIES, ACCIDENTS U.S.GENERAL AVIATION (ALL OPERATIONS) 1973

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL			
	PILOT	680	355	544	2725			4304			
	COPILOT	54	13	14	86			167			
	DUAL STUDENT	21	13	23	179			236			
	CHECK PILOT	3		1	11			15			
	FLIGHT ENGINEER	3		ĩ	4			8			
	NAVIGATOR			_	i			1			
	CABIN ATTENDANT			1	2			3			
	EXTRA CREW	7	2	8	19			36			
	PASSENGERS	629	261	449	2443			3782			
	TOTAL	1397	644	1041	5470		ABOARD	8552			
1							a a				
54	⇒ OTHER AIRCRAFT				76			76			
1	OTHER GROUND	15	12	15	8			50			
	GRAND TOTAL	1412	656	1056	5554			8678			

INVOLVES 4255 TOTAL ACCIDENTS
INVOLVES 723 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 (DUAL)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
	PILOT	21	14	22	182			239
	CCPILOT	1	• •	2	7			10
	DUAL STUDENT	20	13	20	170			223
	CHECK PILCT				1			1
	FLIGHT ENGINEER							
	NAVIGATOR							
	CABIN ATTENDANT							
	EXTRA CREW				.5			2
	PASSENGERS	7	2	11	-33			53
	TOTAL	49	29	55	395		ABOARD	528
ı								
55	A OTHER ATROPACT	-						1.0
	* CTHER AIRCRAFT CTHER GROUND	5	1	1	10 1			16 2
'	CIPER GROUND			1	1			2
	GRAND TOTAL	54	30	56	406			546
		3 .	3.0	.,,	100			3.0

INVOLVES 239 TOTAL ACCIDENTS INVOLVES 25 FATAL ACCIDENTS

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

INJURIES, ACCIDENTS INSTRUCTIONAL (SOLO-SUPERVISED)

INJURIES

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT CCPILOT CUAL STUDENT CHECK PILGT FLIGHT ENGINEER NAVIGATOR CABIN ATTENDANT EXTRA CREW PASSENGERS	10	12	22	128			172
TOTAL	10	12	22.	128		ABOARD	172
* CTHER AIRCRAFT CTHER GROUND	1		1	6			8
GRANC TOTAL	11	12	23	134			180

INVOLVES 172 TOTAL ACCIDENTS
INVOLVES 11 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 CCPILOT DUAL STUDENT CHECK PILGT FLIGHT ENGINEER	10	15	27	108 1 3			160 1 3
NAVIGATOR CABIN ATTENDANT EXTRA CREW PASSENGERS	1	1		1 7			1
TOTAL	11	16	27	121		ABOARD	175
* CTHER AIRCRAFT CTHER GROUND	5	1	1	4 1			10
GRAND TOTAL	16	18	28	126			188

INVOLVES 160 TOTAL ACCIDENTS
INVOLVES 11 FATAL ACCIDENTS

^{*} INJUNIES CARRIED OPPOSITE OTHER-ATRCRAFT ARE INJUNIES OCCURRING IN ATRORAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF THE TOTAL INJUNIES INVOLVED IN COULTSTONS BETWEEN ATRORAFT.

INJURIES, ACCIDENTS INSTRUCTIONAL (CHECK)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
	PILOT	3	1	1	13			1.8
	DUAL STUDENT OHECK PILOT FLIGHT ENGINEER NAVIGATOR CABIN ATTENDANT	3		1	9			4 13
	EXTRA CREW PASSENGERS		2					.5
	TOTAL	6	3	4	24		ABOARD	37
- 58 -	CTHER AIRCRAFT CTHER GROUND							
GI	RANC TOTAL	6	3 -	4	24			37

INVOLVES 18 TOTAL ACCIDENTS INVOLVES 3 FATAL ACCIDENTS

INJURIES + ACCIDENTS (NONCOMMERCIAL (PLEASURE / PERSONAL TRANSPORTATION)

INJURIES

F.ATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
382	178	295	1362			2217
27						55
į	-	ì	3			-5
						,
	180	307	1658			2573
839	360	606	3046		ABOARD	4851
5	. 2	1	33			41
ą	3	[:] 7	3			16
847	365	614	3082			4908
	382 27 1 1 428 839	382 178 27 2 1 428 180 839 360	382 178 295 27 2 3 1 1 428 180 307 839 360 606	382 178 295 1362 27 2 3 23 1 1 3 428 180 307 1658 839 360 606 3046 5 2 1 33 3 3 7 3	382 178 295 1362 27 2 3 23 1 3 3 428 428 180 307 1658 839 360 606 3046 5 2 1 33 3 3 7 3	382 178 295 1362 27 2 3 23 1 3 3 428 180 307 1658 839 360 606 3046 ABOARD

INVOLVES 2206 TOTAL ACCIDENTS INVOLVES 407 FATAL ACCIDENTS

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

INJURIES, ACCIDENTS NONCOMMERCIAL (PRACTICE)

INJURIES

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT ĈOPILOT ĈŬÂL STUDENT ĈĒECK PĪLOT FLĪĞHT ENGĪNEER KAVIGĀTŌR CABIN ĀTTENDANT ĒXTRA CRĒW	10	14 .3	18 2	105			147 ·9
PAŠŠENĢĒRS		1	3	31			35
ŢŌŢAL	10	18	23	140		ABOARD	191
O * OTHER AIRCRAFT CTHER GROUND				9			9
GRANG TOTAL	10	18	23	149			200

INVOLVES 147 TOTAL ACCIDENTS INVOLVES 10 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

	F.ATAL	SERIOUS	MINOR	:NONE	UNKNOWN		TOTAL
FILOT	67	26	28	184			305
ÓCPILOT DLÁL STUDENT OFECK PILOT	4	3	2	4			13
FLÌGHT ENGÌNEER :Kavigatör Cabin attendant	ļ						1
ĒXTRA CRĒW				1			1
PAŜSENĜÉ RS	52	18	40	172			282
TOTAL	124	47	70	361		ABOARD	602
* CTHER AIRCRAFT CTHER GROUND	ļ			79			79 1
GRANC TOTAL	125	47	70	440			682

INVOLVES 305 TOTAL ACCIDENTS INVOLVES 72 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)

TN.	11	0	T	c	C
IIV.	11	12	•	-	`

		EATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
	PILOT ÖGPILOT ÖLÄL STUDENT ÖFECK PILOT	23 Š	1	1	65 16			94 22
	FLÍGHT ENGÍNEER Kavigatör Cabin áttendant				1			1
	ĒXTRA CRĒW PASSENGĒRS	34	2	2 14	120			.3 170
ı 0	ŢOŢAL	62	3	22	203		ABOARD	290
62 -	* CTHER AIRCRAFT CTHER GROUND		2	1	1			1 3
	GRAND TOTAL	62	-5	23	204			294

INVOLVES 94 TOTAL ACCIDENTS INVOLVES 24 FATAL ACCIDENTS

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

INJURIES, ACCIDENTS NONCOMMERCIAL (AERIAL SURVEY)

INJURIES

								
		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT COPILOT DLAL STUDENT OFECK PILOT FLIGHT ENGIN NAVIGATOR	EER	ġ	j.	2	3			.8 2
CABĪN ĀTTENE ĒXTRA CRĒW PASSENGERS	DANT	4		. 1	.4			1 8
TOTAL 1		?	1	4	7		ABOARD	1.9
CTHER AIRCRA	AFT)							
GRAND TOTAL		7	1	4	7			1.9

INVOLVES 8 TOTAL ACCIDENTS INVOLVES 3 FATAL ACCIDENTS

INJURIES, ACCIDENTS NONCOMMERCIAL (OTHER)

INJURIES

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT COPILOT DUAL STUDENT OFECK PILOT FLIGHT ENGINEER NAVIGATOR	į	1	1	5	-		8
CABIN ATTENDANT EXTRA CRÊW			1				1
PASSENĞERS	1	1		1			.3
TOTAL	2	.5	2	6		ABOARD	12
CTHER AIRCRAFT						•	
AND TOTAL	2	2	2	6			12

INVCLVES 8 TOTAL ACCIDENTS INVCLVES 1 FATAL ACCIDENTS

ı

INJURIES + ACCIDENTS COMMERCIAL (AERIAL APPLICATION-CROP CONTROL)

INJURIES

	F.ATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT COPILOT DUAL STUDENT OFECK PILOT	30	40	42	137			249 2
ĒLĪGHT ENGĪNEER ĀAVĪGATŌR CABIN ĀTTENDANT ĒXTRA CRĒW PAŜSENGĒRS	1						1
TOTAL	33	40	42	137		ABOARD	252
OTHER AIRCRAFT OTHER GROUND	. 1	3		×			.4
GRANÇ TOTAL	34	43	42	137			256

INVOLVES 249 TOTAL ACCIDENTS INVOLVES 31 FATAL ACCIDENTS

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

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
	PILOT OCPILOT ÖLÄL STUDENT ÖÄECK PILOT FLIGHT ENGINEER KAVIGATOK CABIN ÄTTENDANT EXTRA CREW	10	-5	10	121			146
	PAŜSENĜĒRS			1	1			2
	ŢQTAL	10	-5	11	122		ABOARD	148
2								
1	* CTHER AIRCRAFT CTHER GROUND	1						1
	GRANC TOTAL	12	5	11	122			150

INVCLVES 146 TOTAL ACCIDENTS
INVCLVES 12 FATAL ACCIDENTS

^{*} INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE INOT PART OF THIS SÜBJECT TABULATION, BUT WERE PART OF THE TICTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

INJURIES, ACCIDENTS COMMERCIAL (FIRE CONTROL)

INJURIES

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT OCPILOT DUÁL STUDENT OFECK PILOT FLÍGHT ENGÍNEER KAVÍGÁTÓR CABIN ÄTTENDANT	J I	2	1	3			9
ĒXTRA CRĒW Passengērs		2		1			1 2
ŢQŢAL	4	4	1	4		ABOARD	13
CTHER AIRCRAFT CTHER GROUND	1			v.			1
GRAND TOTAL	5	.4	1	4			1.4

INVOLVES 8 TOTAL ACCIDENTS INVOLVES 4 FATAL ACCIDENTS

67

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

INJURIES

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT OCPILOT DLAL STUDENT OFECK PILOT FLIGHT ENGINEER NAVIGATOR		3	1	7			12
CABIN ATTENDANT	Ţ		1				1
PAŜSENĜÊRS	. 1	. 2		4			7
ŢŌŢAL	2	5	2	11		ABOARD	20
CTHER AIRCRAFT CTHER GROUND							
GRANE TOTAL	2	5	2	11			20

INVOLVES 12 TOTAL ACCIDENTS INVOLVES 1 FATAL ACCIDENTS

8

INJURIES, ACCIDENTS COMMERCIAL (AERIAL MAPPING/PHOTOGRAPHY)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
	PILOT ÖGPILOT ÖLÄL STUDENT ÖFECK PILOT FLIGHT ENGINEER NAVIGATÖR CABIN ÄTTENDANT	4		2	9			15
	ĒXTRA CRĒW Paŝsenģērs	5		3	. 10			18
	TQŢAL	9		5	19		ABOARD	33
`	CTHER AIRCRAFT							
	GRANC TOTAL	9		5	19			33

INVOLVES 15 TOTAL ACCIDENTS INVOLVES 4 FATAL ACCIDENTS

- 69

INJURIES, ACCIDENTS GCMMERCIAL (AERIAL ADVERTISING)

INJURIES

•							
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT CCPILOT DUAL STUDENT CHECK PILOT FLIGHT ENGINEER NAVIGATOR CABIN ATTENDANT EXTRA CREW	5		3		·		.5
PASSENGERS		1					1
ŢQŢAL	2	1	3		•	ABOARD	6
*						***	
CTHER AIRCRAFT CTHER GROUND							
			,				
GRAND TOTAL	ż	1	3				6

INVOLVES 5 TOTAL ACCIDENTS
INVOLVES 2 FATAL ACCIDENTS

- 70

INJURIES, ACCIDENTS COMMERCIAL (POWER AND PIPELINE PATROL)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
	PILOT ÖGPILOT ÖÜÄL STUDENT ÖFECK PĪLOT FLIGHT ENGINEER KÄVIGĀTÖR	6	1		8			15
	CABIN ĀTĪENDANT ĒXTRA CRĒM Passenģērs	3	1	1	1			2
	TOTAL	9	2	2	11		ABOARD	24
71 -	OTHER AIRCRAFT OTHER GRÖUND							
	GRANC TOTAL	9	2	2	11			24

INVOLVES 15 TOTAL ACCIDENTS INVOLVES 6 FATAL ACCIDENTS

INJURIES, ACCIDENTS COMMERCIAL (FISH SPOTTING)

INJURIES

. ••	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT COPILOT DUAL STUDENT OFECK PILOT FLIGHT ENGINEER NAVIGATOR CABIN ATTENDANT EXTRA CREW RASSENGERS				2			2
FOŢAL				.5		ABOARD	.5
OTHER AIRCRAFT OTHER GROUND							
GRAND TOTAL				2			2

INVCLVES 2 TOTAL ACCIDENTS FATAL ACCIDENTS

INJURIES, ACCIDENTS OCHMERCIAL (AIR TAXI-PASSENGER)

INJURIES

			_					
		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
	PILOT OCPILOT DLAL STUDENT OFECK PILOT FLIGHT ENGINEER	24 2	7 2	9	71 7			111
	RAVIGATÖR CABIN ATTENDANT				1			1
	ĒXTRA CRĒW Paŝsengers	59	18	32	244			353
- 73 -	TOTAL .	85	27	41	323		ABOARD	476
	* OTHER AIRCRAFT OTHER GROUND	. 1			1			.5
	GRANC TOTAL	88	27	41	324			480

INVOLVES 110 TOTAL ACCIDENTS INVOLVES 27 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

	<u>F.A.T.A.L</u>	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT OCPILOT OUAL STUDENT OFFICK PILOT FLIGHT ENGINEER NAVIGATOR CABIN ATTENDANT	14 2	9	4	27 8			54 12
ĒXTRA CRĒW PASSENGĒRS	1	.3		.5			.e
ŢOŢAL	20	13	6	37		ABOARD	7.6
* CTHER AIRCRAFT CTHER GROUND	į	1	3	· 1			. 1 .5
GRAND TOTAL	21	1.4	9	-38			-82

INVOLVES 53 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 COMMERCIAL (CONSTRUCTION-ROTORCRAFT)

INJURIES

	•							
		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
	PILOT ÔOPILOT ĈUÂL STUDENT OHECK PILOT FLIGHT ENGINEER ÑAVIGATÔR CABIN ĀTTENDANT		2		6			8
	ĒXTRA CRĒW PASSENĢĒRS	2		1				3
- 75 -	TOŢAL	. 2	2	1	7		ABOARD	12
	OTHER AIRCRAFT OTHER GROUND							
	GRAND TOTAL	ż	2	1	7 7		i	12

INVOLVES INVOLVES

8 TOTAL ACCIDENTS 2 FATAL ACCIDENTS

INJURIES, ACCIDENTS COMMERCIAL (OTHER)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNO₩N		TOTAL
	FILCT	4	3	5	18			-30
	OCPILOT DLAL STUDENT GFECK PILOT	1			3			.4
	FLIGHT ENGINEER	1						1
	CABIN ATTENDANT				1			1
	EXTRA CREW Passengers	9	9	13	1 -55			8 6
	F.#33ENGEN3	7		13	.55			
- 76 -	TOTAL	15	12	18	78		ABOARD	123
	* CTHER AIRCRAFT				1			1
	CTHER GROUND	6		2	-			8
	GRANC TOTAL	21	12	20	79			132

INVCLVES 29 TOTAL ACCIDENTS
INVCLVES 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 (EXPERIMENTATION)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
4.	FILOT OCPILOT DUAL STUDENT OFECK PILOT FLIGHT ENGINEER NAVIGATOR CABIN ATTENDANT EXTRA CREW FASSENGERS	1			1			2
- 77 -	TOTAL	1			1		ABOARD	2
	CTHER AIRCRAFT							
	GRANC TOTAL	1			1			2

INVCLVES 2 TOTAL ACCIDENTS INVCLVES 1 FATAL ACCIDENTS

INJURIES, ACCIDENTS MISCELLANEOUS (TEST)

INJURIES

		F.ATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
	PILOT OCPILOT DLAL STUDENT	13 3	3	7	21			44
	GHECK PILCT FLIGHT ENGINEER NAVIGATOR				1			. 1
	CABIN ATTENDANT EXTRA CREW	1		,	_			7
	PASSENGERS	2	2	1	5 5			10
- 78 -	TOTAL	19	5	9	32		ABOARD	65
	* CTHER AIRCRAFT CTHER GROUND			1	2			2
	GRANC TOTAL	19	5	10	34			-68

INVOLVES 44 TOTAL ACCIDENTS INVOLVES 13 FATAL ACCIDENTS

^{*} INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE INCT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF THE TOTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

INJURIES, ACCIDENTS MISCELLANEOUS (DEMONSTRATION)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
	FILOT OCFILOT OLAL STUDENT OFECK PILOT FLIGHT ENGINEER NAVIGATOR CABIN ATTENDANT	4 2	1	3	13 3 1			21 6 1
	EXTRA CREW PASSENGERS	6		2	14			22
- 79 -	TCTAL	12	1	6	31		ABOARD	50
	CTHER AIRCRAFT CTHER GROUND							
	GRAND TOTAL	12	1	6	31			50

INVCLVES 21 TOTAL ACCIDENTS INVCLVES 4 FATAL ACCIDENTS

INJURIES.ACCIDENTS MISCELLANEOUS (FERRY)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
	PILOT OCPILOT DUAL STUDENT	9 1	7	15 1	62		93 9
	OHECK PILOT FLIGHT ENGINEER NAVIGATOR CABIN ATTENDANT			1 -	2 1		3 1
	EXTRA CREW F.ASSENGERS	2	3	3	3 14		.4 22
ı E	TOTAL	12	11	21	88		ABOARD 132
80 .	* CTHER AIRCRAFT CTHER GROUND	1			3		3
	GRANC TOTAL	13	11	21	91		136

INVCLVES 93 TOTAL ACCIDENTS
INVCLVES 11 FATAL ACCIDENTS

^{*} INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE INCT 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
	FILCT CCPILOT DLAL STUDENT CHECK PILCT FLIGHT ENGINEER NAVIGATOR CABIN ATTENDANT	1	4	3	5			13
	EXTRA CREW PASSENGERS	1	4	6	1 4			1 15
1 81 1	TCTAL	2	8	9	10		ABOARD	29
	CTHER AIRCRAFT CTHER GROUND				1			1
	GRANC TOTAL	2	8	9	11			30

INVCLVES 13 TOTAL ACCIDENTS INVCLVES 2 FATAL ACCIDENTS

INJURIES, ACCIDENTS MISCELLANEOUS (AIR SHOW/RACING)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
	FILCT CCPILOT DLAL STUDENT CHECK PILCT FLIGHT ENGINEER NAVIGATOR CABIN ATTENDANT EXTRA CREW PASSENGERS	3		1	6			10
1 82 1	TCTAL	3		. 1	6		ABOARD	10
	CTHER AIRCRAFT CTHER GROUND							
	GRANC TOTAL	3		1	6			10

INVCLVES 9 TOTAL ACCIDENTS

INVCLVES 3 FATAL ACCIDENTS

INJURIES, ACCIDENTS MISCELLANEOUS (PARACHUTE JUMP-SPORTING)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
	FILOT OCPILOT DUAL STUDENT OFECK PILOT FLIGHT ENGINEER NAVIGATOR CABIN ATTENDANT	2		6	13			21
	EXTRA CREW FASSENGERS			2	39			41
	TCTAL	2 ·		8	52		ABOARD	62
3	* CTHER AIRCRAFT CTHER GROUND		1		3			.3 1
	GRANC TOTAL	2	1	8	55			66

INVCLVES 21 TOTAL ACCIDENTS
INVCLVES 2 FATAL ACCIDENTS

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

INJURIES, ACCIDENTS IMISCELLANECUS (PARACHUTE JUMP-AIR SHOW)

INJURIES

FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL

FILOT
OCPILOT
DUAL STUDENT
OFECK PILOT
FLIGHT ENGINEER
NAVIGATOR
CABIN ATTENDANT
EXTRA CREW
PASSENGERS

184

TCTAL

ABOARD

CTHER AIRCRAFT

GRANC TOTAL

INVCLVES INVCLVES TOTAL ACCIDENTS
FATAL ACCIDENTS

INJURIES.ACCIDENTS MISCELLANEOUS (TOWING GLIDERS)

INJURIES

		FATAL	SERIOUS	MINOR	NOVE	UNKNOWN		TOTAL
	PILCT CCPILOT DUAL STUDENT CHECK PILCT FLIGHT ENGINEER NAVIGATOR CABIN ATTENDANT	2	1	1	6			10
	EXTRA CREM Fassengers				2			2
	TCTAL	2	. 1	1	8		ABOARD	12
. 85 .	* CTHER AIRCRAFT CTHER GROUND				4			4
	GRAINC TOTAL	2	1	1	12			16

INVCLVES 10 TOTAL ACCIDENTS INVCLVES 2 FATAL ACCIDENTS

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

INJURIES, ACCIDENTS MISCELLANEOUS (SEEDING CLOUDS)

INJURIES

FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL

PILOT
OCPILOT
CLAL STUDENT
OFECK PILCT
FLIGHT ENGINEER
NAVIGATOR
CABIN ATTENDANT
EXTRA CREW
FASSENGERS

TOTAL

ABOARD

CTHER AIRCRAFT

GRANC TOTAL

1 86

INVCLVES INVCLVES TOTAL ACCIDENTS
FATAL ACCIDENTS

INJURIES, ACCIDENTS MISCELLANEOUS (HUNTING)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL	
	FILCT CCPILOT DUAL STUDENT CHECK PILCT FLIGHT ENGINEER NAVIGATOR CABIN ATTENDANT	2 . : 1		4	6			12	
	EXTRA CREW PASSENGERS	1	3	3	3			10	
	TCTAL	4	.3	7	9		DRAOBA	23	
- 87 -	* CTHER AIRCRAFT CTHER GROUND		1	2				3	
	GRANC TOTAL	4	4	9	9			26	

INVOLVES 11 TOTAL ACCIDENTS INVOLVES 3 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 (POLICE PATROL INCLUDES TRAFFIC ADVISORY)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	NV.K.V.O.M.V		TOTAL
	PILOT OCPILOT OLAL STUDENT OFECK PILOT FLIGHT ENGINEER NAVIGATOR	4	1	2	6			13
	CABIN ATTENDANT Extra crew Fassengers	2 1	2	2	4			4 7
88	TCTAL	7	3	4	10		ABOARD	24
	CTHER AIRCRAFT CTHER GROUND							
G	FANC TOTAL	7	3	4	10			24

INVCLVES 13 TOTAL ACCIDENTS INVCLVES 4 FATAL ACCIDENTS

INJURIES, ACCIDENTS MISCELLANECUS (HIGHWAY TRAFFIC ADVISORY NON POLICE)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
	FILCT OCPILOT DUAL STUDENT OFFICK FILCT FLIGHT ENGINEER NAVIGATOR CAEIN ATTENDANT EXTRA CREW PASSENGERS				1			1
1 · 89	TCTAL				1		ABOARD	1
	CTHER AIRCRAFT CTHER GROUND							
G	RANE TOTAL				1			1

INVCLVES 1 TOTAL ACCIDENTS FATAL ACCIDENTS

INJURIES, ACCIDENTS MISCELLANEOUS (OTHER)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
	PILOT CCPILOT DUAL STUDENT CHECK PILCT FLIGHT ENGINEER NAVIGATOR CABIN ATTENDANT	11 2	4	4	21			40 4
- 90	EXTRA CREW PASSENGERS	2 7	ϵ	4	2 15			.4 32
ı	TCTAL	22	10	8	40		ABOARD	80
	CTHER AIRCRAFT		1		1			2
	GRAND TOTAL	22	11	8	41			82

INVCLVES 39 TOTAL ACCIDENTS INVCLVES 12 FATAL ACCIDENTS

SELECTED ACCIDENT DATA

All Operations

1973

	Accident Red	cords
	Total	Fatal
PIIOT TOTAL TIME		
0- 25 Hours 26- 50 Hours 51- 100 Hours 101- 300 Hours 301- 500 Hours 501- 1000 Hours 1001- 3000 Hours 3001- 5000 Hours 5001- 8000 Hours 5001- 8000 Hours 6001-10,000 Hours over-10,000 Hours Unknown/not reported	157 182 349 793 414 494 903 355 249 96 225	10 17 60 133 77 87 151 56 42 16 47
5- Or less Hours 6- 25 Hours 26- 50 Hours 51- 100 Hours 101- 300 Hours 301- 500 Hours 501- 1000 Hours 501- 1000 Hours 2001- 3000 Hours 2001- 3000 Hours Over- 3000 Hours Unknown/not reported	270 708 554 556 848 351 320 223 96 93 285	37 81 68 87 118 41 37 30 23 11 203

ANALYTIC TABLE

PILOT AGE VS INJURY INDEX ALL OPERATIONS

	4.6	(A) SER	MINO	HOHE	RECORDS	ACCIDENTS
14	. ,	1			1	1
15		1	1		2	2
10						
17	3	1	4	12	. 20	20
18	· •	4	7	17	32	32
19	10	4	6	32	52	52
20	8	6	10	28	52	52
21	. 7	8	13	47	75	75
22	14	ó	14	42	75	75
23	16	9	15	61	101	101
24	9	15	12	63	99	99
25	22	11	14	83	130	130
۷٥.	. 13	13	20	90	136	135
27	27	15	22	90	154	154
28	18	9	10	81	118	118
29	24	9	19	79	131	131
30	25	15	20	89	. 149	149
31	25	10	10	66	111	111
32	17	10	11	85	123	123
33	20	17	16	90	143	142
34	17	18	20	75	130	130
35	30	13	20	73	136	136
36	15	9	22	79	125	125
37	. 22	9	7	54	92	91
38	16	8	19	96	139	139
39	16	9	10	67	102	102
40	21	10	16	64	. 116	116
41	16	9	15	70	110	110
42	20	13	15	70	118	118
43	15	17	20	59	111	111
44	12	11	12	70	105	105
45	21	9	15	81	126	1 26
46	10	6	19	62	97	91
47	29		24	50	. 114	114
48	. 15		15	50	92	92 °
49	18	. 9	18	47	92	92

				\ ³	4					
		4P1	Stal	MIN.	HOH			0.55	ORDS	ACCIDENTS
				`	`			KEL		
50				•					106	106
51		24	7	11	50				92	92
52		16	8	7	39				70	70
53		22	7	9	43				81	81
. 54		4	6	9	39				58	58
55		20	3	7	35				65	65
56		12	1	7	23				43	43
57		11	3	5	14				33	33
58 .		4	1	5	24				34	34
59		10	1	. 6	14				31	31
60		2	3	4	. 19				28	28
ó l		6		1	7				14	14
02		1	1	2	11				15	15
63		3	1	3	4				11	11
64		1	2	1	6				10	10
65		3			3				6	6
66		1	1		5				7	7
67		1			4				5	5
68		2		1					3	3
69					1				1	1
70		1			3				4	4
71		1			2				3	3
72				2	3				5	5
73				1					1	ì
74			1						1	1
75										
70					2				2	. 2
UNKNOWN/		11	6	10	39				66	66
RECORDS			399	597					4304	
ACC IDENTS		123	395	592	2545					4255

PILOT CERTIFICATE VS INJURY INDEX ALL OPERATIONS

	44	A SER	OUS MIR	,0 ₄	RECORDS	ACCIDENTS	PERCENT
STUDENT	52	48	66	328	494	494	11.48
PRIVATE .	350	156	251	1040	1797	1790	41.75
CUMMERCIAL	175	118	172	o 87	1152	1147	26.77
AIRLINE TRANSPORT	29	7	16	82	134	134	3.11
PRIVATE W/FLIGHT INSTRUCTOR				1	1	1	•02
CUML WITH FLT INSTRUCTOR	ಕತ	58	71	337	554	552	12.87
ATR W/FLIGHT INSTRUCTOR	26	4	9	71	110	109	2.56
OTHER				2	2	2	• 05
ЭИСИ	13	6	11	15	45	45	1.05
UNKNOWN/NOT REPORTED	3	2	1	9	. 15	15	. 35
RECORDS	736	200	. 597	3573	4304		
					4304		
ACC I DENTS	723	395	592	2545		4255	
PERCENT	17.1	9.3	13.9	59.8			

ANALYTIC TABLE

FIRE AFTER IMPACT BY INJURY INDEX ALL OPERATIONS

FIRE AFTER IMPACT	44	A SER	MIN	40 4E		RECORDS	ACCIDENTS	PERCENT
YES	195	49	44	60		348	346	98.58
UNKNOWN/NOT REPORTED	5					5	5	1.42
RECCRDS	200	49	44	60		353		
ACCIDENTS	198	49	44	60	·		351	
PERCENT	56.7	13.9	12.5	17.0				

CONDITIONS OF LIGHT BY INJURY INDEX ALL OPERATIONS

	48	A SER	OUS	404	RECORDS	ACCIDENTS	PERCENT
. *							
CAWN	8	7	10	15	40	40	•93
DAYLIGHT	542	312	501	2283	3638	3593	84.53
CUSK	24	16	27	79	146	146	3.39
· VIGHT	137	62	52	160	411	407	9.55
NIGHT	7	2	7	27	43	43	1.00
UNKNOWN/NCT REPORTED	18			8	26	26	.60
RECCRDS	736	399	597	2572	4304		
ACCIDENTS	723	395	592	2545		4255	
PERCENT	17.1	9.3	13.9	59.8			

ANALYTIC TABLE

MONTH OF OCCURRENCE BY INJURY INDEX ALL OPERATIONS

	KATAL	61016	NHOR	ONE	RECORDS	ACCIDENTS	PERCENT
01	49	26	28	133	236	232	5.48
02	. 47	26	35	149	257	252	5.97
03	53	29	33	206	321	319	7.46
04	53	44	50	211	358	356	8.32
05	50	33	64	272	419	415	9.74
06	71	50	73	259	453	451	10.53
07	78	46	64	284	472	468	10.97
9.0	79	45	62	294	480	473	11.15
09	58	37	55	260	410	405	9.53
10	63	20	60	199	342	337	7.95
11	79	21	38	144	282	276	6.55
12	56	22	35	161	274	271	6.37
RECORDS	736	399	597	25 7 2	4304		
ACCIDENTS	723	395	592	2545		4255	
PERCENT	17.1	9.3 1	3.9	9.8			

STATE OF OCCURRENCE VS INJURY INDEX ALL OPERATIONS

SKA 25 13 31 138 207 204 200 204 200 204 207 204 208 207 204 208 2				,5	_			
RAMA 18 6 6 5 51 81 81 81 81 81 81 81 8207 204 204 201 101 101 101 101 101 101 101 101 101		FATA	se ^{RIC}	WING	4046	RECORDS	ACCIDENTS	PE
SKA 25 13 31 198 207 204 ZONA 17 13 20 51 ANSAS 7 12 8 54 BITORNIA 107 50 63 282 GRADO 18 13 17 57 INECTICUT 7 2 4 20 ANARE 3 7 27 4 20 ANARE 3 7 27 4 20 ANARE 3 7 27 4 20 ANARE 3 7 7 57 ANAIL 17 7 57 ANAIL 18 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7								
ZONA 17 13 20 51 101 101 ANSAS 7 12 8 54 81 80 LIFORNIA 107 50 63 282 502 491 ORADO 18 13 17 57 105 105 ORECTICUT 7 2 4 20 33 32 ANARE 31 12 29 172 24 24 ANARE 31 12 29 172 24 24 CRIDIA 18 7 7 77 89 89 ORIGIDA 18 7 7 77 89 89 89 RIGIDA 18 7 7 77 78 89 89 89 HOLO 7 5 5 31 48 48 48 HOLO 7 5 5 31 48 48 14 <td>ABAMA</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	ABAMA							
ARSAS 7 12 8 54 81 80 150RNIA 107 50 63 282 502 491 108400 18 13 17 57 105 105 105 105 105 105 105 105 105 105	ASKA	25	13	31	138			
ILFORNIA 107 50 63 282 502 491 ORADO 18 13 17 57 105 105 NECTICUT 7 2 4 20 33 32 ANARE 3 1 12 29 172 244 243 PRIDA 31 12 29 172 244 243 PRIDA 11 7 55 5 7 24 24 PRIDA 11 7 55 5 7 24 24 PRIDA 11 7 55 5 7 24 24 PRIDA 12 12 29 173 28 114 PRIDA 13 14 7 5 5 5 7 24 24 PRIDA 14 14 7 5 5 5 7 24 24 PRIDA 15 14 8 48 48 PRIDA 16 17 7 6 38 62 61 PRIDA 17 7 6 38 62 61 PRIDA 18 1 7 7 6 38 62 61 PRIDA 18 1 7 7 6 38 62 61 PRIDA 18 1 7 7 6 38 62 61 PRIDA 18 1 7 7 6 38 62 61 PRIDA 18 1 7 7 6 38 62 61 PRIDA 18 1 7 7 7 76 PRIDA 18 1 7 7 7 76 PRIDA 18 1 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	IZONA	17	13	20				
ORADO 18 13 17 57 105 105 105 105 INECTICUT 7 2 4 20 33 32 AMARE 3 2 4 99 9 9 18 100 11 12 29 172 24 24 24 24 3 18 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	KANSAS	7	12	8	54			
INTECTICUT 7 2 4 20 33 3 32 ANARE 3 7 7 57 89 89 89 89 1A11 7 5 5 7 24 140 7 5 5 5 7 1A11 7 7 6 7 6 1A11 7 7 6 7 6 1A11 7 7 6 38 1A11 7 7 6 38 1A12 5 2 33 1A13 12 5 2 33 1A14 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	LIFORNIA	107	50	63	282			
ANARE 3 2 4 9 9 9 RIDA 31 12 29 172 244 243 RIGIA 18 7 7 57 89 89 89 RIATI 7 5 5 5 7 24 24 RIGIA 7 5 5 5 31 48 48 RIGIA 8 48 48 RIGIA 8 14 9 13 41 77 76 RIGIA 8 12 5 2 33 55 52 RIGIA 8 11 7 6 38 62 61 RIGIA 8 1 7 27 45 43 RIGIA 8 1 7 27 44 56 77 77 RIGIA 8 1 7 44 56 77 77 76 RIGIA 9 10 13 45 77 77 76 RIGIA 9 10 13 45 77 77 76 RIGIA 9 10 13 45 77 77 77 RIGIA 9 10 13 45 77 77 76 RIGIA 9 10 13 45 77 77 77 RIGIA 8 3 3 2 34 47 47 47 RIGIA 8 3 3 2 34 47 47 47 RIGIA 8 3 3 6 36 53 52 RIGIA 8 3 6 36 53 52 RIGIA 8 3 6 36 53 52 RIGIA 9 10 24 43 43 43 RIGIA 9 10 8 11 48 77 77 77 RIGIA 8 3 3 6 36 53 52 RIGIA 9 10 10 8 11 48 77 77 77 RIGIA 10 8 11 48 77 77 77 RIGIA 10 8 11 48 77 77 77 RIGIA 11 10 8 11 48 77 77 77 RIGIA 11 10 8 11 48 77 77 77 RIGIA 11 10 8 11 48 77 77 77 RIGIA 11 10 10 8 11 48 77 77 77 RIGIA 11 10 10 8 11 48 77 77 77 RIGIA 11 10 10 8 11 48 77 77 77 RIGIA 11 10 10 10 11 11 11 11 11 11 11 11 11	ORADO		13	17	57	•		
SRIDA 31 12 29 172 244 243 SRIGIA 18 7 7 57 89 89 89 SALITI 7 5 5 7 24 24 LINDO 7 5 5 31 48 48 48 LINDIS 22 13 22 88 1145 144 SIANA 14 9 13 41 77 76 INA 12 5 2 33 52 SIASS 11 7 6 38 62 61 SITUCKY 8 3 3 7 27 45 43 SISSANA 15 3 20 49 87 87 INE 4 3 5 18 30 30 30 SYLAND 5 6 5 19 35 32 SSACHUSETTS 12 4 7 44 67 67 SIASSININA 23 9 22 90 144 144 SINDISONA 9 10 13 45 77 76 SISSISPPI 9 6 2 14 31 31 31 31 31 31 31 31 31 31 31 31 31	NECTICUT	7	2	4	20			
REGIA 18 7 7 57 57 89 89 89 89 811 1 7 5 5 5 7 24 24 24 88 111 1 7 5 5 5 7 24 24 24 88 1110 15 22 13 22 88 145 145 144 1110 15 22 13 22 88 145 145 144 1110 14 9 13 41 77 76 14 14 1110 15 25 2 33 52 52 15 2 15 2 15 2 15 2 15	AWARE	3		2	4			
AND THE PROPERTY OF THE PROPER	ORIDA	31	12	29	172	244	243	
THOO TO SO	DRGIA							
INOIS 22 13 22 88 145 144	VAII	7	5	5	7	24	24	
TATANA 14 9 13 41 77 76 TATANA 14 9 13 41 77 76 TATANA 12 5 2 33 52 52 TATANA 15 3 20 49 67 87 TATANA 16 12 4 7 44 67 67 TATANA 18 3 7 27 76 TATANA 18 3 7 27 77 76 TATANA 18 3 7 27 78 TATANA 19 10 13 45 TATANA 19 10 12 44 TATANA 19 10 1	ино	7	5	5	31	48	48	
12 5 2 33 52 52 11 1 7 6 38 62 61 11 1 7 6 38 62 61 11 11 7 6 38 62 61 11 7 6 38 62 61 11 7 6 38 7 7 27 7 45 43 11 11 11 11 11 11 11 11 11 11 11 11 11	INOIS	22	13	22	88	145	144	
ISSAS 11 7 6 38 62 61 ITUCKY 8 3 7 27 45 43 IJISIANA 15 3 20 49 87 87 INE 4 3 5 18 30 30 INE 4 3 5 18 30 30 INULAND 5 6 5 19 35 32 ISSACHUSETTS 12 4 7 44 67 67 INIGAN 23 9 22 90 14 14 144 INIESOTA 9 10 13 45 77 76 ISISISIPPI 9 6 2 14 31 31 31 31 31 ISSOURI 10 8 11 48 77 77 ITANA 8 3 2 34 47 47 INIESOTA 8 3 6 36 52 14 31 31 31 31 INIESOTA 8 3 6 36 53 52 INIESOTA 9 10 24 47 47 INIESOTA 9 10 24 48 47 47 47 INIESOTA 9 10 24 48 47 47 47 INIESOTA 9 10 24 48 47 47 47 INIESOTA 9 10 24 43 43 43 43 43 43 43 43 43 43 43 43 43	DIANA	14	9	13	41	77	76	
TITUCKY 8 3 7 27 45 43 15 SANA	NA .	12	5	2	33	52	52	
INSTANDA 15 3 20 49 87 87 18 87 1	NSAS	11	7	6	38	62	61	
INE 4 3 5 18 30 30 30 30 30 30 30 30 30 30 30 30 30	ITUCKY	8	3	7	27	45	43	
TYLAND 5 6 5 19 35 32 SSACHUSETTS 12 4 7 44 67 67 SHIGAN 23 9 22 90 144 144 INESOTA 9 10 13 45 77 76 SSISSIPPI 9 6 2 14 31 31 31 31 31 31 31 31 31 31 31 31 31	JISIANA	15	3	20	49	87	87	
SACHUSETTS 12 4 7 44 67 67 68 67 69 10 13 45 77 76 68 68 151 51 78 15 10 8 11 48 78 17 47 78 15 16 17 78 15 16 17 78 15 16 17 78 15 16 17 78 15 16 17 78 17 18 78 18 18 18 18 18 78 18 18 18 18 78 18 18 18 78 18 18 18 78 18 18 18 78 18 18 18 78 18 18 18 78 18 18 18 78 18 18 18 78 18 18 18 78 18 18 18 78 18 18 18 78 18 18 18 78 18 18 18 78 18 18 18 78 18 18 18 78 18 18 18 79 18 18 70 18 18 18 70 18 18 18 71	INE	4	3	5	18	30	30	
SHIGAN 23 9 22 90 144 144 144 144 145 185 177 76 185 185 18F 1 9 6 2 14 31 31 31 31 31 31 31 31 31 31 31 31 31	RYLAND	. 5	6	5	19	. 35	32	
INESOTA 9 10 13 45 77 76 ISISSIPPI 9 6 2 14 31 31 ISOURI 10 8 11 48 77 77 ITANA 8 3 2 34 47 47 ISASKA 8 3 6 36 53 52 ISASKA 8 3 6 36 53 52 ISASKA 5 4 10 24 43 43 43 ISASKA 5 4 10 24 53 71 123 121 ISASKA 13 13 18 69 114 112 ISASKA 14 15 16 19 28 27 ISASKA 15 16 19 28 27 ISASKA 16 18 16 19 28 27 ISASKA 17 18 18 18 18 18 18 18 18 18 18 18 18 18	SSACHUSETTS	12	4	7	44	67	67	
SSISSIPPI 9 6 2 14 31 31 31 31 31 31 31 31 31 31 31 31 31	CHIGAN	23	9	22	90	144	144	
SSOURI 10 8 11 48 77 77 77 17 17 17 17 17 17 17 17 17 17	INESOTA	9	10	13	45	77	76	
ATANA 8 3 2 34 47 47 47 48 48 48 48 48 48 48 48 48 48 48 48 48	SSISSIPPI	9	6	2	14	31	31	
BRASKA 8 3 6 36 53 52 74 74 74 75 11 37 76 76 76 76 76 76 76 76 76 76 76 76 76	SSOURI	10	8	11	48	77	77	
ADDA 5 4 10 24 43 43 43 44 15 46 15 4 17 26 24 17 26 24 17 26 24 17 26 24 17 26 24 18 18 18 18 18 18 18 18 18 18 18 18 18	ITANA	8	3	2	34	47	47	
# HAMPSHIRE 5 4 17 26 24 # JERSEY 7 5 11 37 60 58 # MEXICO 9 2 11 49 71 71 # YORK 13 13 18 69 113 110 # THE CAROLINA 20 18 11 65 114 112 # RTH DAKOTA 2 1 6 19 28 27 # ROMAN 19 6 8 46	BRASKA	8	3	6	36	53	52	
T JERSEY 7 5 11 37 60 58 MEXICO 9 2 11 49 71 71 TYORK 13 13 18 69 113 110 RTH CAROLINA 20 18 11 65 114 112 RTH DAKOTA 2 1 6 19 28 27 TO 15 14 23 71 123 121	/ADA	5	4	10	24	43	43	
T JERSEY 7 5 11 37 60 58 M MEXICO 9 2 11 49 71 71 TYORK 13 13 18 69 113 110 RTH CAROLINA 20 18 11 65 114 112 RTH DAKOTA 2 1 6 19 28 27 TO 15 14 23 71 123 121	W HAMPSHIRE	5		4	17	26	24	
MEXICO 9 2 11 49 71 71 71 71 71 71 71 71 71 71 71 71 71	W JERSEY	7	5	11	37	60	58	
TYORK 13 13 18 69 113 110 RTH CAROLINA 20 18 11 65 114 112 RTH DAKOTA 2 1 6 19 28 27 10 15 14 23 71 123 121		. 9	2	11	49	71	71	
RTH CAROLINA 20 18 11 65 114 112 RTH DAKOTA 2 1 6 19 28 27 10 15 14 23 71 123 121	YORK .	13	13	18	69	113	110	
2 1 6 19 28 27 20 15 14 23 71 123 121	RTH CAROLINA	20	18	11	65	114	112	
0 15 14 23 71 123 121 ALDMA		2	1	6	19	28	27	
ALDWA 19 6 8 46 79 76								
AHUMA 17 0 0 40 .	AHOMA	19	6	8	46	79		

	,	~ .	، کە	9	i c			
	481	' چنه'	OUS	404		RECORDS	ACCIDENTS	PERCENT
OREGON	13	12	8	51		84	84	1.95
PENNSYLVANIA	19	6	17	74		116	114	2.70
RHODE ISLAND		1	2	2		5	5	•12
SOUTH CAROLINA	6	5	4	28		43	43	1.00
SOUTH DAKOTA	5	3	1	9		18	18	•42
TENNESSEE:	9	5	7	35		56	56	1.30
TEXAS	50	19	45	175		289	287	6.71
UTAH	12	3	4	25		44	44	1.02
VERMONT	2	2	3	11		18	17	•42
VIRGINIA	. 8	2	8	37		5,5	55	1.28
WASHINGTON	17	13	13	56		99	99	2.30
WEST VIRGINIA	7	6	2	8		23	23	•53
WISCONSIN	11	12	18	36		77	76	1.79
WYOMING	10	2	7	25		44	44	1.02
DISTRICT OF COLUMBIA		1				1	1	•02
UNKNOWN/NOT REPORTED	10					10	10	•23
PUERTO RICO	1		2	7		10	10	•23
VIRGIN ISLANDS			1	1		2	2	•05
SAMOA								
OTHER (U.S.TERRITORIES)		1	1			2	2	•05
CANADA	. 3			3		6	6	•14
MEXICO	9	6	3	24		42	42	•98
CENTRAL AMERICA				1		. 1	1	•02
SOUTH AMERICA	2	1				3	3	•07
EUROPE		1		1		2	2	•05
ASIA	1	2	4	4		11	11	•26
AFRICA			1			1	1	•02
AUSTRALIA								
ICEL AND								
GREENLAND								
OTHER (FOREIGN COUNTRIES)	5	1		9		15	15	•35
PACIFIC OCEAN NORTH LATITUDES	1		1			2	2	•05
PACIFIC OCEAN SOUTH LATITUDES								
ATLANTIC OCEAN NORTH LAT.	4		1	4		9	9	•21
ATLANTIC OCEAN SOUTH LAT.								
OTHER (INTERNATIONAL WATERS)	1	2	2	1		6	5	•14
RECORDS	736	399	597	2572		4304		
ACCIDENTS	723	395	592	2545			4255	
PERCENT	17.1	9.3	13.9	59.8				

STATE OF OCCURRENCE VS AIRCRAFT DAMAGE ALL OPERATIONS

			А	LL OPERATIO	JNS			
	DESTR	OTED SUBS	ANTIAL MINOR	NONE.		RECORDS	ACCIDENTS	PERCENT
ALABAMA	25	56				81	81	1.88
ALASKA	28	176		1		207	204	4-81
ANIZONA	30	64	1			101	101	2.35
AKKANSAS	22	5 ö		1		81	80	1.88
CALIFORNIA	146	349	5	2		502	491	11.65
CULURADO	31	73	1			105	105	2 • 44
CONNECTICUT	10	22	1			. 33	32	•77
DELAWARE	4	5				9	9	- 21
FLORIDA	43	201				244	243	5.67
GEORGIA	27	62				89	89	2.07
IIAWAH	10	14				24	24	• 56
OH A CL	16	32				48	48	1.12
ILLINOIS	. 29	114	1	1		145	144	3.37
INDIANA	27	50				77	76	1.79
AWUI	. 19	35	1			52	52	1.21
KANSAS	15	46	1			62	61	1.44
KENTUCKY	ð	35	2			45	43	1.05
LUUISIANA	27	60				87	87	2.02
MAINE	5	25				30	30	. 70
MARYLAND	. 1	27	1			35	32	.81
MASSACHUSETTS	14	53				67	67	1.56
MICHIGAN	36	107		1		144	144	3.35
MINNESUTA	13	64			,	77	76	1.79
MISSISSIPPI	19	12				31	31	• 72
MISSUURI	19	58				77	77	1.79
MUNTANA	13	34				47	47	1.09
NEBRASKA	13	39	1			53	52	1.23
NEVADA	8	34		1		43	43	1.00
NEW HAMPSHIRE	v	20				26	24	.60
NEW JERSEY	11	48		1		60	58	1.39
NEW MEXICO	10	59		2		71	71	1.65
NEW YORK .	21	90	1	1		113	110	2.63
NURTH CARULINA	24	86	3	1		114	112	2.65
NURTH DAKGTA	3	24	1			28	27	• 65
OHIO	25	95		3		123	121	2.86
OKLAHOMA	24	54		1		79	76	1.84

		ROTED SUR	RATIA	ود				
•	OK.S	14 516	MIN	4OHY		RECORDS	ACC I DENTS	PERCENT
OREGON	19	65	`	•		84	84	1.95
PENNSYL VAN I A	19	96	1			116	114	2.70
RHODE ISLAND	1	4				5	5	. 12
SOUTH CAROLINA	12	31				43	43	1.00
SUUTH DAKÜTA .	5	13				18	18	- 42
TENNESSEE	17	38	1			56	56	1.30
TEXAS	82	205	1	1		289	287	6.71
UTAH	17	27				44	44	1.02
VERMONT	3	15				18	17	• 42
VIRGINIA	12	43				55	55	1.28
WASHINGTUN	28	69	1	1		99	99	2.30
WEST VIRGINIA	9	14				23	23	.53
WISCUNSIN	20	57				77	76	1.79
WYUMING	16	28				44	44	1.02
DISTRICT OF COLUMBIA		1				1	1	•02
UNKNOWN/NOT REPORTED	10					10	10	. 23
PUERTU RICO	4	6				10	10	.23
VIRGIN ISLANDS		2				2	2	• 05 ;
SAMOA								
UTHER (U.S.TERRITORIES)		2				2	2	.05
CANADA	3	3				6	6	. 14
MEXICO	14	28				42	42	. 98
CENTRAL AMERICA		1				1	1	. 02
SOUTH AMERICA	2	1				3	3	.07
EUROPE		2				2	2	• 05
ASIA	4	7				11	11	. 26
AFRICA		1				1	1	.02
AUSTRAL IA								
ICELAND								
GREENLAND								
OTHER (FOREIGN COUNTRIES)	6	9				15	15	. 35
PACIFIC OCEAN NORTH LATITUDES	2					2	2	. 05
PACIFIC OCEAN SOUTH LATITUDES								
ATLANTIC OCEAN NORTH LAT.	6	2		1		9	. 9	•21
ATLANTIC OCEAN SOUTH LAT.								
OTHER (INTERNATIONAL WATERS)		5		1		6	5	• 14
KECORDS	1102	3158	24	20		4304		
ACCIDENTS	1097	3139	24	20	•		4255	V _e
PERCENT	25.6	73.4	• 6	.5			,	

TYPE OF POWER BY INJURY INDEX ALL OPERATIONS

	FATAL	SERIO	WINOB	HOME	RECORDS ACCIDENTS A	PERCENT
RECIPROCATING ENGINE	704	374	569	2484	4131 4088	95.98
TURBOJET ENGINE	6		1	7	14 14	.33
TURBOPROP ENGINE	9	1	3	17	30 30	.70
TURBOFAN ENGINE	1		1	1	3 3	.07
NCNE	7	15	8	39	69 67	1.60
TURBOSHAFT	. 9	9	15	24	57 56	1.32
RECORDS	736	399	597	2572	4304	
ACCIDENTS	723	395	592	2545	4255	
PERCENT	17.1	9.3	13.9	59.8		

ANALYTIC TABLE

TYPE OF AIRCRAFT BY INJURY INDEX ALL OPERATIONS

	4 RT R	SERIO	WINO	404E	RECORDS	ACCIDENTS	PERCENT
FIXED-WING	700	352	535	2366	3953	3910	91.84
RCTORCRAFT	24	29	50	156	259	257	.6.02
GLIDER	6	13	8	37	64	62	1.49
BALLOON	1	2		2	· 5	5	• 1.5
BLIMP	1				1	1	.02
DIRIGIBLE							
RCCKET							
CONVERTIPLANE				. 1	1	1	.02
GYROPLANE	4	3	4	10	21	21	.49
RECORDS	736	399	597	2572	4304		
ACCIDENTS	723	395	592	2545		4255	
PERCENT	17.1	9.3	13.9	59.8			

TYPE OF FLIGHT PLAN BY INJURY INDEX ALL OPERATIONS

	KATA	SERIO	WINO	HOHE	RECORDS ACCIDENTS PE	RCENT
NCNE	538	323	510	2165	3536 3492	92.16
VFR	86	49	57	272	464 463	10.78
IFR	88	20	21	85	214 214	4.97
CCNTROLLED VFR				1	1 1	.02
IFR	1			1	2 2	.05
TOWER EN ROUTE CONTROL SERVIC						
CVFR	2	1	2	8	13 13	.30
VFR FLIGHT FOLLOWING SERVICE	1	1		1	3 3	.07
SPECIAL VFR	4	4	2	2	12 12	.28
CTHER	1			3	. 4	.05
UNKNOWN/NOT REPORTED	15	1	5	33	54 54	1.25
RECORDS	736	399	597	2572	4304	
ACCIDENTS	723	395	592	2545	4255	
PERCENT	17.1	9.3	13.9	59.8		

ANALYTIC TABLE

TYPE OF WEATHER CONDITIONS BY INJURY INDEX

	4ATA	SERIC	WINC	HOHE	RECORDS ACCIDENTS PERG	CENT
VFR	514	357	565	2483	3919 3871 9	1.05
IFR	165	34	31	62	292 292	6.78
BELOW MINIMUMS	22	6	1	4	33 33	.77
UNKNOWN/NOT REPORTED	35	2		22	59 59	1.37
RECORDS	736	399	597	2572	4304	
ACCIDENTS	723	395	592	2545	. 4255	
PERCENT	17.1	9.3	13.9	59.8		

ANALYTIC TABLE AIRPORT PROXIMITY BY INJURY INDEX ALL OPERATIONS

	487	A SLA	NIK	40 ⁴ 0	. REC	ORDS	ACCIDENTS	PERCENT
ON AIRPORT	70	110	219	1616		2015	1983	46.82
ON SEAPLANE BASE	1		2	8		11	11	•26
ON HELIPORT	1		3	3		7	7	•16
ON BARGE/SHIP/PLATFORM	1	1				2	2	•05
IN TRAFFIC PATTERN	50	23	30	67		170	167	3.95
WITHIN 1/4 MILE	31	39	49	64		183	183	4.25
WITHIN 1/2 MILE	28	20	16	30		94	93	2.18
WITHIN 3/4 MILE	7	5	7	9		28	27	•65
WITHIN 1 MILE	30	17	23	38		108	108	2.51
WITHIN 2 MILES	47	14	27	55		143	143	3.32
WITHIN 3 MILES	39	16	17	45		117	117	2.72
WITHIN 4 MILES	. 19	7	11	30		67	66	1.56
WITHIN 5 MILES	6	3	10	31		50	50	1.16
BEYOND 5 MILES	348	125	160	510		1143	1135	26.56
UNKNOWN/NOT REPORTED	58	19	23	.66		166	165	3.86
RECORDS	736	399	E0.7	2572		4304	•	,
ACCIDENTS		395				4504	4255	
	723			2545			4200	
PERCENT	17.1	9.3	13.9	59.8				

GENERAL AVIATION ACCIDENTS

SMALL FIXED-WING AIRCRAFT

	•	•			•
		·			
		,			
					4.0
			•		
•					
					-
				·	

TYPE OF ACCIDENT BY AIRCRAFT DAMAGE SMALL FIXED WING-1973

		Q)	JALL					
	4	401°	P4 08	- 1×		BECORDS	ACCIDENTS	DEDCENT
	Offs	ROTED SUBS	ANTIAL	HOHE		KECORDS	ACCIDENTS	PERCENT
GROUND-WATER LOOP-SWERVE	19	530	1			550	550	Ĩ4.08
CRAGGED WINGTIP POD OR FLOAT	1					1	1	.03
WHEFLS-UP LANDING	2	93				95	95	2.43
WHEFLS-DOWN LANDING IN WATER		2				2	2	-05
GEAR COLLAPSED	3	78				81	81	2.07
GEAR RETRACTED		48	1			49	49	1.25
FARD LANDING	13	247			•	260	260	6.66
NCSF OVER/DOWN	1	116				117	Ī17	3.00
RCLL OVER								
CVERSHOOT	11	183				194	Ĭ94	4.97
UNDERSHOOT	12	92				104	Ĩ04	2.66
CCLLISION BETWEEN AIRCRAFT								
ecth in flight	16	21	6			43	23	1.10
CHE AIRBORNE		3				3	2	- Ó.P
ECTH ON GROUND	5	28	6	1		40	21	1.02
CCLLISION WITH GROUND/WATER								
CCNTROLLED	92	44				136	ī36	3.48
UNCONTROLLED	139	28				167	Ĩ67	4.28
CCLLIDED WITH								
WIRES/POLES	55	63				118	Ĭ18	3.02
TREES	114	70				184	184	4.71
RESIDENCE/S	5					2	2	• n=
PUILDING/S	2	в				10	10	.26
FENCE FENCEPOSTS	5	39				41	41	1.05
ELECTRONIC TOWERS	4	S				6	6	.Ĩ=
RUNWAY OR APPROACH LIGHTS		4				4	4	. ïo
AIRPORT HAZARD		6				6	6	.15
ANIMALS		5				5	5	.13
CRCP	3	24				27	27	.69
FLAGMAN LCADER			1	1		2	2	.05
CITCHES		32				32	32	. 97
SNOWBANK	1	13				14	14	.36
PARKED AIRCRAFT	1	13	1			15	15	.36
AUTOMOBILE		15				15	15	.36
CIRT BANK	2	21				23	23	- 99
CEJECT	9	76		1.		86	86	2.20

FIRST		ROTED S	ANTIA	٠, ٧	,			
TYPE OF ACCIDENT	ok ^s	په تمهي	WILL	404		RECORDS	ACCIDENTS	PERCENT
BIRD STRIKE	1	1	`			. 2	2	•05
STALL	108	70				178	178	4.56
SPIN	66	13				79	79	2.02
SPIRAL	5	2				7	7	.18
MUSH	27	111				138	138	3.53
FIRE OR EXPLOSION								
IN FLIGHT	7	3				10	10	•26
ON GROUND		2				2	2	•05
AIRFRAME FAILURE								
IN FLIGHT	50	9				59	59	1.51
ON GROUND		6				6	6	•15
ENGINE TEARAWAY								
ENGINE FAILURE OR MALFUNCTION	180	690	1	1		872	872	22.32
PROPELLER/ROTOR FAILURE								
PROPELLER	1	22				23	23	•59
TAIL ROTOR								
MAIN ROTOR								
PROP ROTOR ACONT TO PERSON	1	2	3	13		19	19	•49
JET INTAKE/EXH ACONT TO PERS								
PROPELLER/JET/ROTOR BLAST		3				3.	3	•08
TURBULENCE	12	13				25	25	•64
HAIL DAMAGE TO AIRCRAFT								
LIGHTNING STRIKE	1					1	1	•03
EVASIVE MANEUVER	1					1	1	•03
UNCONTROLLED ALT DEVIATION								
DITCHING	1					1	1	.03
MISSING ACFT NOT RECOVERED	10					10	10	•26
MISCELL ANEOUS/OTHER	4	10				14	14	•36
UNDETERMINED	16	8				24	24	•61
RECORDS	1000	2869	20	17		3906		
ACCIDENTS		2853	20	17			3866	
PERCENT		73.5	•5	• 4				

PHASE OF OPERATION BY INJURY INDEX SMALL FIXED WING-1973

	44	,A'SER'	MIE	,0 ₄		RECORDS	ACCIDENTS	PERCENT
STATIC								
STARTING ENGINE/S	1	4		2		7	7	.ĩe
ICLING ENGINE/S	4	4	1	5		14	14	.36
ENGINE RUNUP				4		4	3	.10
ICLING ROTCRS								
PARKED-ENGINES NOT OPERATING		1		1		2	2	-0=
CTHER		1		3		4	4	.10
IXAT		•						
TC TAKEOFF			3	49		52	51	ĩ.33
FROM LANDING	1	3	8	73		85	84	2.18
CTHER		3	1	23		27	27	.69
GROUND TAXI TO TAKEOFF				2		2	2	.05
GROUND TAXI FROM LANDING								
GROUND TAXI. OTHER								
AERIAL TAXI TO TAKEOFF								
AERIAL TAXI TO/FROM LANDING								
AERIAL TAXI. OTHER								
TAKEOFF								
RLN	6	11	24	143		184	Ĩ 84	4.71
INITIAL CLIMA	65	58	86	242		451	450	11.55
VERTICAL					•			
RUNNING								
AECRTED	1	2	5	54		62	62	1.59
ABCRTED								
ABCRTED								
CTHFR	2	2	1	4		9	9	.23
INFLIGHT								
CLIMB TO CRUISE	16	8	9	25		58	58	1.48
NORMAL CRUISE .	58	41	84	205		388	386	9.93
DESCENDING.	9	6	14	27		56	56	1.43
FCLDING								
HCVERING								
PCWFR-ON DESCENT								
ALTOROTATIVE DESCENT								
ACROBATICS	- 24	3	4	1		32	32	. ŘŽ
PLZZING	12	4	3	3		22	22	.56

FIRST	44	A SER	MIN	08 04	k.		
OPERATIONAL PHASE	44	Str	W	40	RECORDS	ACCIDENTS	PERCENT
UNCONTROLLED DESCENT	101	5	2	1	109	109	2.79
EMERGENCY DESCENT				1	1	1	.03
LCW PASS	35	9	10	20	74	74	1.85
CTHER	187	38	26	30	. 281	277	7.1.5
EN ROUTE TO TREAT CROP	1			7	е	8	.20
EN ROUTE TO RELOADING AREA			2	5	4	4	.10
SURVEY FIELD/AREA		2		1	3	3	.00
STARTING SWATH RUN	S	5	2	9	18	18	.46
SWATH RUN	8	7	11	35	61	61	1.56
FLAREOUT FOR SWATH RUN			· 1	6	7	7	.ĩe
PULLUP FROM SWATH RUN	3	8	6	9	26	26	.67
PROCEDURE TURNAROUND	10	10	11	35	66	66	1.69
CLEANUP SWATH	1	2	2	5	. 7	.7	.10
MANEUVER TO AVOID DESTRUCTION							
RETURN TO STRIP	3		1	7	11	11	.ŻP
LANDING							
TRAFFIC PATTERN-CIRCLING	25	14	22	28	89	89	2.26
FINAL APPROACH	32	47	54	136	269	266	6.85
INITIAL APPROACH	13	2	1	4	20	20	.51
FINAL APPROACH	18	6	3	2	29	29	.74
LEVFL OFF/TOUCHDOWN	4	20	66	540	630	627	16.13
RCLL	4	7	50	547	608	605	Ĩ5 . 57
RCLL-ON/RUN-ON							
PCWER-ON LANDING							
PCWER-CFF AUTOROTATIVE LDG							
GC-AROUND	. 11	14	15	46	86	86	2.20
MISSED APPROACH	4				4	4	.10
CTHF'R	2	3	1	3	9	9	.23
UNKNOWN/NCT REPORTED	55			5	27	27	.65
RECORDS	685	350	529	2342	. 3906		
ACCIDENTS	675	347	525	2319		3866	
PERCENT	17.5	9.0	13.5	60.0			

SMALL FIXED WING-1973 ACCIDENTS WITH ASSIGNED CAUSES ONLY

INVOLVES 3802 TOTAL ACCIDENTS INVOLVES 660 FATAL ACCIDENTS

§ 2_

		FATA	L ACCIDE	NTS		AL ACCIO		ALI	L ACCIDE	NT.S
	ERGAC CAUSE/FACTOR	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TCTAL*
	PILCT	.579 .87•73	175 26.52	588 89.09	2678 85•23	372 11.84	2697 85•84	3257 85•67	547 14•39	3285 86.40
	PERSCNNEL	38 5.76	17 2.58	52 7.88	291 9.26	69 2.20	356 11.33	329 8.65	86 2 . 26	408 10.73
	AIRFRAME	10 1•52	.3 •45	12 1.82	25 •80	6 •19	·31 •99	35 •92	9 •24	43 1•1·3
	LANCING GEAR	• 0 0	1 •15	1 •15	145 4.61	62 1.97	202 6.43	145 3.81	63 1.66	203 5.34
	PCWERFLANT	41 6•21	·3 •45	42 6•36	390 12•41	32 1.02	419 13•34	431 11•34	· 35 •92	461 12.13
107	SYSTEMS	11 1.67	1 •15	12 1.82	31 •99	24 •76	54 1.72	42 1.10	25 •66	66 1.74
1	INSTRUMENTS/EQUIPMENT AND ACCESSORIES	1 •15	6 •91	7 1.06	6 •19	.9 •29	15 •48	7 •18	15 •39	22 •58
	RCTCRCRAFT	•00	.00	•00	•00	.00	•00	.00	•00	.00
	AIRPCRTS/AIRWAYS/FACILITIES	1 •15	5 •76	6 •91	196 6.24	439 13.97	617 19.64	197 5•18	444 11.68	623 16.39
	WEATHER	21 3.18	257 38.94	269 40.76	125 3•98	520 16.55	634 20.18	146 3.84	777 20.44	903 23.75
	TERRAIN	15 2.27	173 26.21	188 28.48	479 15.25	620 19.73	1086 34.56	494 12.99	793 20.86	1274 33.51
	MISCELLANEOUS	15 2.27	9 1.36	24 3.64	135 4.30	38 1.21	172 5•47	150 3.95	47 1.24	196 5•16
	UNDETERMINED	47 7.12	.00	47 7.12	18 •57	.00	18 •57	65 1.71	.00	65 1.71

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

[■] IF AN ACCIDENT INCLUDES ECTH A CAUSE AND RELATED FACTOR IN THE SAME CAUSAL :CATEGORY, THE ACCIDENT IS REPRESENTED ONCE UNDER THE TOTAL FOR THAT CATEGORY

SMALL FIXED WING-1973 ACCIDENTS WITH ASSIGNED CAUSES ONLY

INVOLVES 3802 TOTAL ACCIDENTS INVOLVES 660 FATAL ACCIDENTS

	FAT	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
CETAILED CAUSE/FACTOR	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TCTAL	CAUSE	FACTOR	TCTAL	
** FILCT **		•								
PILOT IN COMMAND ATTEMPTED OPERATION W/KNOWN CEFICIENCIES IN EQUIPMENT ATTEMPTED OPERATION BEYOND EXPERIENCE/ABILITY LEVEL BECAME LOST/CISORIENTED CONTINUED VFR FLIGHT INTO ADVERSE WEATHER CONDITIONS CONTINUED INTO KNOWN AREA OF SEVERE TURBULENCE DELAYED ACTION IN ABORTING TAKEOFF CELAYED IN INITIATING GO-AROUND	7 33 9 137 1 1	10 -5 -3	9 43 14 140 1 1	36 78 34 71 1 45	9 15 14 -4 2	45 93 48 75 1 47 63	43 111 43 208 2 46 64	11 25 19 7 2	54 136 62 215 2 48 67	
DIVERTED ATTENTION FROM CPERATION OF AIRCRAFT EXCEEDED DESIGN STRESS LIMITS OF AIRCRAFT FAILED TO EXTEND LANDING GEAR FAILED TO RETRACT LANDING GEAR	14 32	13	27 32	74 2 38 1	41	115 2 38 2	88 34 38	54	142 34 38 38	
RETRACTED GEAR PREMATURELY INACVERTENTLY RETRACTED GEAR FAILEC TO SEE AND AVOIC CTHER AIRCRAFT FAILEC TO SEE AND AVOIC CBUECTS OF OBSTRUCTIONS	17 40	1	18 40	2 18 32 137	•	2 18 32 137	2 18 49 177	1	2 18 50 177	
FAILEC TO OBTAIN MAINTAIN FLYING SPEED MISULCEED, SPEEC, ALTITUCE OR CLEARANCE FAILEC TO USE OR INCORRECTLY USED MISC EQUIPMENT FAILEC TO FOLLOW APPROVEC PROCEDURES, DIRECTIVES ETC	185 3 1 20	1 2 7	190 3 3 27	.330 20 11 88	6	330 20 17 97	519 23 12 108	1 8 16	520 23 20 124	
IMPROPER OPERATION OF POWERPLANT + POWERPLANT CONTROLS IMPROPER OPERATION OF BRAKES AND/OR FLIGHT CONTROLS IMPROPER OPERATION OF FLIGHT CONTROLS PREMATURE LIFT CFF	11 57 2	1	11 58 2	124 124 110 59	6 4 1 2	130 128 111 61	135 124 167 61	6 4 2 2	141 128 169 63	
IMPROPER LEVEL OFF IMPROPER IFR CPERATION IMPROPER IN-FLIGHT DECISIONS OR PLANNING IMPROPER COMPENSATION FOR WINC CONDITIONS	2 27 50 3	2 14	2 29 64 3	287 8 108 116	1 17 6	288 8 125 122	289 35 158 119	1 2 31 6	290 37 189 125	
INACEGUATE PREFLIGHT PREFARATION AND/OR PLANNING INACEGUATE SUPERVISION OF FLIGHT LACK OF FAMILIARITY WITH AIRCRAFT MISMANAGEMENT OF FUEL EXERCISED POOR JUDGMENT	44 8 e 26	63 1 22	107 9 30 26	335 115 44 248 97	81 81	416 115 125 249	379 123 52 274	144 1 103 1	523 124 155 275	
OPERATEC CARELESSLY SELECTEC UNSUITABLE TERRAIN IMPROPER STARTING PROCEDURES STARTED ENGINE WITHOUT PROPER ASSISTANCE/EQUIPMENT	46 1 6	1.3	59 2 6	8 185 2 15	16 1 11	113 9 196 2 15	143 9 191 2 16	29 2 11	172 11 202 2 16	
TAXIEC/PARKEC WITHOUT PROPER ASSISTANCE FAILED TO ASSURE THE GEAR WAS DOWN AND LOCKED INITIATED FLIGHT IN ACVERSE WEATHER CONDITIONS CONTROL INTERFERENCE	23		23	16 41 13	1 1 1	17 41 14 1	16 41 36	1 1 1	17 41 37	
SPECTANEOUS-IMPROPER ACTION MISULOGED DISTANCE, SPEEC, AND ALTITUDE MISULOGED DISTANCE AND SPEED MISULOGED DISTANCE	6 2 1	1	7 3 1	13 25 203	1 2 4	14 27 207	13 31 205 1	î 3 5	14 34 210 1	
MISJUDGED CISTANCE AND ALTITUDE MISJUDGED SPEED AND ALTITUDE MISJUDGED SPEED MISJUDGED SPEED AND CLEARANCE	5 2 2 1	1	6 3 2 1	102 7 10 15	1 1 .5	103 8 15 15	107 9 12 16	2 2 5	109 11 17 16	
MISJUDGED ALTITUDE AND CLEARANCE MISJUDGED ALTITUDE MISJUDGED CLEARANCE INACEGUATE TRAINING OF STUDENT	12 19 9	.5	13 24 9	15 32 79	2	15 35 81 2	27 51 88	1 8 2 2	28 59 90 2	
MISUNCERSTANCING OF ORCERS OR INSTRUCTIONS IMPROFER REOCVERY FROM BOUNCED LANDING INCAPACITATION PHYSICAL IMPAIRMENT SPATIAL DISORIENTATION	1 1 14 17	1 1 1·8	2 1 15 35	136 3 10 8	1 7	2 137 3 1? 8	3 137 17 27 119	1 1 1 25	138 18 52 119	
SPATIAL DISCRIENTATION PSYCHOLOGICAL CONDITION MISUSED OR FAILED TO USE FLAPS LEFT AIRCRAFT UNATTENDED ENGINE RUNNING FAILED TO MAINTAIN DIRECTIONAL CONTROL	111 2 1 1	.4	111 3 5 1 5	21 2 421	1·9 1	40 2 422	119 22 22 3 426	1 23 1	119 3 45 .3 427	
SELECTED WRONG RUNWAY RELATIVE TO EXISTING WIND FAILED TO ABORT TAKEOFF	1 9		1 9	76 42	18	94 43	77 51	18	95 52	

PILOT IN COMMAND (CONTINUED)	FATAL ACCIDENTS				TAL ACC		ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TCTAL
FAILEC TO INITIATE GO-ARCUNC DIRECT ENTRIES				107	1	108	107	1	108
SUBTOTAL	1045	197	1242	4466	404	4870	4 5511	601	-611:2
COPILCT		.,,	1242	4400	707		3311		
INACVERTENTLY RETRACTED GEAR FAILEC TO COTAIN/MAINTAIN FLYING SPEEC FAILEC TO USE OR INCORRECTLY USED MISC EQUIPMENT FAILEC TO FOLLOW APPROVEC PROCEDURES, DIRECTIVES, ETC IMPHOPER OPERATION OF POWEMPLANT + POWEMPLANT CONTROLS IMPROPER OPERATION OF BRAKES AND/OR FLIGHT CONTROLS IMPROPER UPERATION OF FLIGHT CONTROLS IMPROPER LEVEL OFF	1		1	1 1 1 6 1 3		1 1 1 6 1 3	1 1 1 1 6 1		1 1 1 1 6 1
IMPROPER COMPENSATION FOR WIND CONDITIONS LACK OF FAMILIARITY WITH AIRCRAFT MISMANAGEMENT OF FUEL CONTROL INTERFERENCE SPONTANEOUS-IMPROPER ACTION MISJUDGED CISTANCE AND SPEED MISJUDGED DISTANCE AND AITILDE MISJUDGED DISTANCE AND AITILDE MISJUDGENDING OF ORDERS OR INSTRUCTIONS	1	1	2	1 1 1 1 1 2	1	1 1 1 1 2	1 1 1 2	2	1 4 1 1 1 2
IMPROPER RECOVERY FROM BOUNCED LANDING FAILED TO MAINTAIN DIRECTIONAL CONTROL				1 4	. 1	1 4	1 4	1	1
SLETCTAL	2	1	3	27	2	29	29	3	32
DUAL STUCENT DELAYED IN INITIATING GC-AROUND DIVENTED ATTENTION FROM OPERATION OF AIRCRAFT FAILEC TO EXTEND LANDING GEAR INACVERTENTLY RETRACTEC GEAR FAILEC TO SEE CTHER AIRCRAFT	. 1	1	2	2 2 4 5 2	1	2 3 4 5 2	2 2 4 5 3	1	2 3 4 5
FAILEC TO SEE AND AVOID CBUECTS OF CESTRUCTIONS FAILEC TO COTAIN/MAINTAIN FLYING SPEED FAILEC TO FOLLOW APPROVED PROCEDURES, CIRECTIVES, ETC IMPROPER OPERATION OF POWERPLANT + POWERPLANT CONTROLS IMPROPER OPERATION OF BRAKES AND/OR FLIGHT CONTROLS IMPROPER OPERATION OF FLIGHT CONTROLS PREMATURE LIFT-OFF	1		1	5 10 1 2 7 6 3		5 10 1 2 7 6 3	5 11 2 7 6 3		5 11 2 7 6
IMPROPER LEVEL OFF IMPROPER IN-FLIGHT DECISIONS OF PLANNING IMPROPER COMPENSATION FOR WIND CONDITIONS LACK OF FAMILIARITY WITH AIRCRAFT MISMANAGEMENT OF FUEL FAILED TO ASSURE THE GEAR WAS DOWN AND LOCKED				23 1 2 3 3	. 1	23 1 2 1 3 3	23 1 2 3 3	.1	23 1 2 1 3 3
FAILURE TO RELINDUISH CONTROL CONTHOL INTERFERENCE SPONTANEOUS-IMPROPER ACTION MISULOGED DISTANCE AND SPEED MISULOGED DISTANCE AND ALTITUDE MISULOGED SPEED				2 2 5 5 12 2	1 1 1	2 6 5 13 3	2 2 5 5 12 2	1 1 1	2 6 .5 13
MISULCEED ALTITUDE MISULCEED CLEARANCE MISUNCERSTANDING OF ORDERS OR INSTRUCTIONS IMPROPER RECOVERY FROM BOUNCED LANDING MISUSED OR FAILED TO USE FLAPS FAILED TO MAINTAIN DIRECTIONAL CONTROL			1	1 3 2 12	1	1 1 3 2	1 1 3 2 12	1	1 1 1 3 2 12
SUBTOTAL	3	1	4	127	6	133	130	7	137
CHECK FILCT INACEGUATE SUPERVISION OF FLIGHT LACK OF FAMILIARITY WITH AIRCRAFT EXERCISED FOOR JUDGEMENT	1	1 1	1 1 1	6		6	7	1 1	
FAILED TO MAINTAIN DIRECTIONAL CONTROL				1		1	1		1
SLETCTAL	1	2	3	7		7	e	2	1

PERSCNNEL (CONTINUED)	FAT	AL ACCID	ENTS		NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR		CAUSE	FACTOR		CAUSE	FACTOR	TCTAL	
** PERSCANEL **										
FLIGHT INSTRUCTOR INACEGUATE SUPERVISION OF FLIGHT INACEGUATE TRAINING OF STUDENT		1 2	1 2	11 8	5ء بو	16 17	11	6 11	17 19	
MAINTENANCE, SERVICING, INSPECTION IMPROPER MAINTENANCE (MAINTENANCE PERSONNEL)	3	2	3	27	2	29	30	2	32 7	
IMPROPER MAINTENANCE(OWNER PERSONNEL) IMPROPERLY SERVICED AIRCRAFT(GROUND CREW) IMPROPERLY SERVICED AIRCRAFT(OWNER-PILCT)	1		1 1	5 9 1	1	10 1	6 9 2	1	10	
INDEGUATE INSPECTION OF AIRCRAFT (MAINTENANCE PERSONNEL) INALEGUATE INSPECTION OF ACFT (OWNER-PILCT PERSONNEL) INALEGUATE MAINTENANCE AND INSPECTION	2 11	1	2 1 14	5 1 123	1 15	6 1 138	7 1 134	1 1 18	.e .2 152	
OTHER OPERATIONAL SUPERVISORY PERSONNEL	i		i	6	1	7	7	1	. e	
INACECUATE GROUND TRAINING-PROCEDURES INACECUATE SUPERVISION/TRAINING OF RAMP CREWS DEFICIENCY, COMPANY MAINTAINED EDMT, SERV, REGULATIONS				1 2	1	1 1 5	1 2	· 1	1.5	
WEATHER PERSONNEL INCCRECT WEATHER FORECAST OTHER				1	1	2 1	1	1	2 1	
TRAFFIC CONTROL PERSONNEL FAILURE TO ACVISE OF UNSAFE AIRPORT CONCITION FAILURE TO ACVISE OF CTHER TRAFFIC		1	1		1	1		1 1	1 1	
INACEGUATE SPACING OF AIRCRAFT OHER AIRPORT SUPERVISORY PERSONNEL		6	6	2 1	1	5	2 1	2 7	4 8	
IMPROFER MAINTENANCE-AIRPORT FACILITIES FAILURE TO NOTIFY OF UNSAFE CONDITION				3 3 2	Ë	5 7 2	3 3 2	.4	.5 7 2	
IMPROPERIANCEGUATE SNOW REMOVAL IMPROPER OPERATION OF FACILITIES IMPROPER INSPECTION OF FACILITIES	1	1	2	2	·2	-4	1 2 5	1 2 5	2 4 10	
OTHER AIRWAYS FACILITIES PERSONNEL OTHER				5 1	5	10 1	1	5	10	
PRODUCTION-DESIGN-PERSONNEL SUBSTANDARD GLALITY CONTROL INCCRRECT FACTORY INSTALLATION	1		1	1 3		1 3	2		2.5	
POCR∕INADEQUATE DESIGN OTHER	1	1	1 2	3	1	4 8	4	1 1	5 10	
MISCELLANEOUS-PERSONNEL PILCT OF CTHER AIRCRAFT GROUNC SIGNALMAN	17	1	18	46	2	48 1	63	3 1	6 6 1	
SPECTATOR Ground Crewman Passenger	2	1 1	3 1 3	2 12	1	3 16	2 2 15	1 2 4	.3 4 19	
DRIVER OF VEHICLE				9	5 1	14	9 4	5	14 5	
DIRECT ENTRIES THIRE FILCT FLIGHT ENGINEER	1		1				1		1	
DISPATCHING SUBTOTAL	46	21	67	-307	71	378	353	92	445	
** AIRFRAME **										
WINGS SPARS	4		4	1		1	5		5	
RIES, STRINGERS, CAP STRIPS WING ATTACHMENT FITTINGS, BCLTS BRACING WIRES, STRUTS	1 2		1	,1		1	1 1 2		. 1 . 2	
SKIN AND ATTACHMENTS WINCTIPS WHEEL WELL DOORS	1		2	1		1	3 1 1		.3 1 1	
OTHER FUSELAGE				ī		1	1		î	
BULM-EACS SKIN ANC ATTACHMENTS DOCRS, DOCR FRAMES				1 1 1	1	1 1 2	1 1 1	1	1 2	
WINCSHIELCS, WINDOWS, CANOPIES SEA'S Wheel well doors		1	1	2 1	1	3 1	2	1	1 .4 1	

	roseri no		•						
AIRFRAME (CONTINUED)	FAI	TAL ACCIO	ENTS	NONF	TAL ACC	CENTS	ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TCTAL
OTHER				3	2	5	3	2	5
LANCING GEAR MAIN GEAR-SHCCK ABSORBING ASSY, STRUTS, ATTACHMENTS, ET NORMAL RETHACTION/EXTENSION ASSEMBLY EMERGENCY/EXTENSION ASSEMBLY	С			20 38 9	3	20 41	38 38	3	20 41 '9
TAILNHEEL ASSEMBLIES NGSENHEEL ASSEMBLIES WHEELS, TIRES, AXLES				5 10 12	.3 .3	8 12 18	5 10 12	3 2 6	1:2 1:8
SKI ASSEMBLIES FLCAT ASSEMBLIES BRAKING SYSTEM (NORMAL)				2 2 43	27	2 2 70	2 2 43	27	70 70
LANCING GEAR NARNING AND INCICATING COMPONENTS GEAF LOCKING WECHANISM SWITCHES, LEVERS, CRANKING MECHANISM, ETC		1	1	1 12 2	21	12	1 12 2	21 1	12 12 3
NCSENFEEL STEERING OTHER DIRECT ENTRIES				2 2 1	1	2 3 1	2 2 1	1	3
FLIGHT CONTROL SURFACES ELEVATOR, ASSEMBLY ATTACHMENTS RUDGER, SURFACES ATTACHMENTS ATLERON, SURFACES ATTACHMENTS				2		2	2 3 1		-3
HORIZONTAL STABILIZER, ATTACHMENTS VERTICAL STABILIZER, ATTACHMENTS FLAP ASSEMBLIES	2	1	2	1 2	2	1 4 1.	4	2	.1 .6 1 1
OTHER DIRECT ENTRIES				2 1		2	2		1
SLETCTAL	12	4	16	187	69	256	199	73	272
ON POWERPLANT NO									
ENGINE STRUCTURE CRANKSHAFT MASTER AND CONNECTING ROCS	1		1	13 20		13 20	14 20		14 20
CYLINCER ASSEMBLY PISTCN. PISTON RINGS VALVE ASSEMBLIES	1 1 5		1 1 5	10 8 18	1	10 8 19	11 9 23	1	11 9 24
BLCWER, IMPELLER ASSEMBLY MOUNT AND VIBRATION ISCLATORS CTHER	1		1	5 1 11	•	5 1 11	5 1 12	•	1 12
. IGNITION SYSTEM MAGNETOES	3		3	10	1	11	13	1	14
SFARK PLUG CGILS LCW TENSICN WIRING	1	1	2	10 1 1	1	11 1 1	11 1 1	2	1:3 1 1
SNITCHES OTHER: Fuel System				1	1	1	1	1	1 .
TAINES LINES AND FITTINGS SELECTOR VALVES	2		2	1 6 6	1	2 6 6	1 8 6	1	.2 .6
FILTERS, STRAINERS, SCREENS CARBLEETOR PUMPS	1		1	12 16 11	1	12 17 12	12 16 12	1	12 17 13
FUEL INJECTION SYSTEM VENTS, DRAINS, TANK CAPS RAM AIR ASSEMELY OTHER	2		2	4 9 8	1	10	6 9 8	1	6 10 .8
UBFICATING SYSTEM LINES, HOSES, FITTINGS VALVES		. 2	2	3 7	.5	5 9	.3 7.	4 2	.9 .2
FILTERS, SCREENS OTHER COOLING SYSTEM	1		1	2 2 5		2 2 5	.5 6		2 6
CONLING Pumps				1	1	1	. 1	1	1
PROPELLER AND ACCESSORIES BLACES FURS				11		11	11		11
HYCRAULIC PITCH CONTROL MECHANISM GOVERNORS BLACE RETENTION MECHANISM	1		1	1 2		î 1 :2	1 2 2		.2 .2

POWERFLANT (CONTINUED)	FATAL ACCIDENTS		NONFATAL ACCIDENTS			ALL ACCIDENTS			
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TCTAL	CAUSE	FACTOR	TCTAL
OTHER EXHALST SYSTEM				4		4	.4		.4
MUFFLERS CLAMPS STACKS				2 1 1		2 1 1	, 2 1 1		2 1 1
BAFFLES ENGINE ACCESSORIES VACULM PUMPS	1		1	1		. 1	1 1		1
STARTERS OT⊩ER ENGINE CONTRCLS-COCKPIT					1 1	1 1		1 1	1
THECTILE-POWER LEVER ASSEMBLIES MIXTURE CONTROL ASSEMBLIES INCLOTION AIR, PREHEAT CONTROLS PROFELLER GOVERNOR CONTROLS OTHER	2			7 4 1 1	1	8 4 1 1	9 4 1 1	1	10 -4 1 1
POWERFLANT-INSTRUMENTS POWER INDICATORS FUEL CUANTITY GAUGE OIL FRESSURE CAUGE OTHERS				1	1 17	1 17 1	1	1 17	1 17 1
MISCELLANEOUS POWERFLANT FAILURE FOR UNDETERMINED REASONS OTHER	19 1		19 1	154		154	173 1		173
REDUCTION GEAR ASSEMBLY GGEARS, REDUCTION SHAFT, ACCESSORY DRIVE GEARS, ACCESSORY DRIVE GTHER				1 1 2 1	4.	1 1 2 1	1 1 2 1		1 1 2 1
COMPRESSOR ASSEMBLY COMPLETION ASSEMBLY TUREINE ASSEMBLY ACCESSORY DRIVE ASSEMBLY LUBRICATING SYSTEM FLEL SYSTEM SAFETY SYSTEM TONITION SYSTEM TONITION SYSTEM TONITION SYSTEM TONITION SYSTEM TONITION SYSTEM ENTALS							•		•
THRUST REVERSER PROFELLER SYSTEM HUE CONSTANT SPEED CRIVE PCWER LEVER PROPELLER LEVER				1		1	1		1
REVERSE THRUST LEVER OTHER RENGINE INDICATING EQUIPMENT ENGINE INSTALLATION				1		1	1 ,		1
SUBTOTAL	43	3	46	405	34	439	448	37	485
## .SYSTEMS ##									
ELECTRICAL SYSTEM BATTERIES GENERATORS/ALTERNATORS REGULATOR MOTORS SWITCHES PROTECTIVE DEVICES	1		1	2 2 4	.2 .5 2	4 5 .4 4	2 2 4 1	2 5 2	.4 .5 .4 .4
OTHER HYDRALLIC SYSTEM RESERVOIR, LINES, FITTINGS				4	.3	.3 .4 7	4	3 4	.3 .4 7
OTHER FLIGHT CONTROL SYSTEMS ALLERON AND ALLERON TAB CONTROL SYSTEM	1		1	6 3 5	1	3 .5	.6 3 .6	1	.3 6
RILLARD ATLEMENT THE CONTROL SYSTEM RUDGER AND RUDGER THE CONTROL SYSTEM WING FLAP CONTROL SYSTEM WING FLAP CONTROL SYSTEM (MEGHANICAL) WING FLAP CONTROL SYSTEM (MEGHANICAL)	3 1		3 1	3	1	3 6 1 1	6 5	2 · 1 1	6 7 1

SYSTEMS (CONTINUED)										
		FATAL ACCIDENTS			TAL ACCI		ALL ACCIDENTS			
	<u>c.</u>	AUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TCTAL
OTHER ANTI-ICING, DE-ICING SYSTEMS		2		2	1		1	3		.3
WING ANTI-ICING, DE-ICING SYSTEMS CARBURETOR DE-ICING SYSTEM		1 1		1 1	. 1	1	2	1 2	1	1 3
PITCT ANTI-ICING SYSTEM AIR CONCITION, HEATING AND PRESSURIZATION		i		î	•	•	-	ī	•	ĭ
PRESSURIZATION CONTROL AND INDICATING SYSTEM AUTO FILOT		1		1				1		1
FIRE WARNING SYSTEM FIRE EXTINGUISHER SYSTEM										
OXYGEN SYSTEM OTHER SYSTEMS										
PITCT SYSTEM VACULM SYSTEM			,			.5	2		. 2	.5
OTHER			1	1		1	1		1	1
SLETCTAL		12	1	13	31	25	56	43	26	69
** INSTRUMENTS/EGUIPMENT AND ACCESSORIES **										
FLIGHT AND NAVIGATION INSTRUMENTS ALTIMETERS			,							
AIRSFEED			1	1	1	2	1 2	1	1 2	2
ATTITUDE GYRC Directional Gyrc		1	.3	3 1				1	3	.3 1
COMPASS COMMUNICATIONS AND NAVIGATION EQUIPMENT						1	1		1	1
TRANSMITTERS AND/OR RECEIVERS VOR RECEIVERS			1	1		-3	.3 2		3 3	'3 '3
OTHER MISCELLANEOUS EGUIPMENT			1	1					1	1
SPRAY, DUSTING EQUIPMENT OTHER					1	.3	7 1	1	3	. 1
SLETOTAL		1	-6	7	6	11	17	7	17	24
** AIRPORTS/AIRWAYS/FACILITIES **										
AIRPORT FACILITIES APPROACH LIGHTING		,								
RUNMAY LIGHTUNG RAMP FACILITIES		1		1	3	8	11	1 3	8	11
TAXIWAY LIGHTING AND MARKING						5	2	_	2	5 5
OTHER AIRPORT CONCITIONS					2	12	14	2	12	14
WET FUNMAY ICEASLUSH ON RUNWAY					9 8	55 14	64 22	9	55 14	64 22
SNOW ON RUNWAY SNOW WINDROWS					14 16	20 13	34 29	14 16	20 13	34 29
UNMARKEC CBSTRUCTIONS SCFT SHGULDERS (RUNWAY)			1	1	2 19	e 21	10 40	2 19	9 21	11 40
ROUGH WATER High vegetation					1 5	32	1 37	1 5	32	1 37
HICCEN HAZARC Pocrly maintained runway surface					7	e 11	15 18	7	11	15 18
SCFT FUNWAY WET FRAMP/TAXIWAY					2	22	24	2 1	22	24
ICE/SLUSH ON FAMP/TAXIWAY SNOW ON RAMP/TAXIWAY					-	1 3	.3	•	1	.3
SOFT SHOULDERS (RAMP/TAXIWAY) SCFT TAXIWAY					1	2	3	1	2	3
CTHER AIRWAYS FACILITIES			.4	4	105	238	343	105	242	347
SUBTOTAL		1	5	6	202	475	677	203	480	683
48 MEATHER 84				-				2.00		
LCW CEILING		4	172	176	3	57	60	7	229	236
RAIN FOG		2	7 6 118	76 120	1	32 53	32 54	. 3	108 171	108 174
SNCW		1	33	34		10	10	1	43	44

WEATHER (CONTINUED)	FATAL ACCIDENTS			NONFA	NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	
HAIL ICING CONDITIONS-INCLUCES SLEET, FREEZING RAIN, ETC	1	1 20	1 21	2	1 13	1 15	3	2 33	.2 36	
CONCITIONS CONDUCIVE TO CARB/INDUCTION SYSTEM ICING UNFAVORABLE WIND CONDITIONS SUDDEN WINDSHIFT	2	·9	8 11	7 81 10	231 12	51 312 22	7 83 10	52 240 12	59 323 22	
TURBLIENCE IN FLIGHT, CLEAR AIR TURBLIENCE ASSOCIATED WITH CLCUDS AND/OF THUNCERSTORMS DOWNCRAFTS, UPDRAFTS	6	1 20 5	1 26 9	3 1 14	6 14 39	9 15 53	3 7 18	7 34 44	10 41 62	
LCCAL WHIRLWIND LIGHTNING STRIKE SOLALL LINE	1	1	1 1	6	1	-6 1	6	2	6 1 2	
ACVERSE WINDS ALOFT HIGH TEMPERATURE OBSTRUCTIONS TO VISION		.g	3	1	.4 1.4 .3	.4 14 .4	1	4 17 12	.4 17 13	
HJGH CENSITY ALTITUDE THUNCERSTORM ACTIVITY OTHER	2 2	22 18 .4	22 20 6	1	47 25 -8	47 26 8	3 2	69 43 12	69 4 <i>6</i> 14	
SLETCTAL	25	520	545	130	614	744	155	1134	1289	
** TERRAIN 44										
WET+ SCFT GROLDC SNCW-COVERED ICY		.4	1 4	56 5	35 14 1	91 19 1	56 5	36 18 1	92 23 1	
HIGH VEGETATICN Hidden obstructions Rough/uneven	1	2	1 3	41 17 157	37 13 86	78 30 243	41 18 158	37 13 88	7e 31 246	
ROUGH WATER GLASSY WATER	1	1	1	2	1 7	3 7	. 2	1 8	3	
HIGH CESTRUCTIONS LOCSE GRAVEL	8	149	157	129	36€ 1	495 1	137	515 1	652 1	
SANCY OTHER	2	1 1.9	3 23	11 73	13 74	24 147	13 77	14 93	27 170	
SLETCTAL	16	·177	193	491	648	1139	507	825	1332	
** IM ISCELLANEOUS **										
BIRC CCLLISION VCRIEX_TURBULENCE	2		2	2 11		11	2 13		13	
PRCF/SET/ROTOR BLAST Animal(s) on runway/taximay/ramp	_		_	2 7	. 1	2	2 7	1	.5	
EVASIVE MANEUVER TO AVCIC COLLISION UNGLALIFIED FERSON OPERATED AIRCRAFT SUICIDE	5 1 2	4	9 5 2	55 7	1·9 7	74 14	60 8 2	23 11	83 1·9 ·2	
FOREIGN OBJECT CAMAGE SMCKE IN COCKFIT	-	1	1	1 2	1 .3	2	1 2	1	. 6	
FOREIGN MATERIAL AFFECTING NORMAL OPERATIONS UNCETERMINED	3 47	•	3 47	44 18	7	51 18	47 65	7	54 65	
DIRECT ENTRIES	2		2	6		6	8		e	
SLETCTAL	62	۰۶	71	155	38	193	217	47	·264	
GRAND TOTAL	1269	947	2216	6541	2397	8938	7810	3344	11154	
** MISCELLANECUS ACTS, CONDITIONS **										
ALTIMETER SETTING-INCORRECT ANTI-ICING/DEICING EQUIP-IMPROPER OPER. OF/FAILED TO USE	1 4	1	2 4	2 48		2 48	3 52	1	52	
CHECKLIST-FAILED TO USE DISHEGARD OF GOOD OPERATING PRACTICE	1	3	2	1 3	31 12	32 15	1 4	33 15	34 19	
IMPROPER EMERGENCY PROCEDURES GUST LOCKS ENGAGED INSTRUCTIONS INTERPRETED	2 2 1	12	14 2 1	11 2 1	10	21 2 2	13 4 2	22	35 4 3	
INSTRUCTIONS-MISINTERPRETED INSTRUMENTS-MISREAC OR FAILEC TO REAC SEAT BELT NOT FASTENEC	2	1 2	3 2	8	1	9	10	2 2	1.5	
NCT ALLIGNED WITH RUNWAY/INTENDED LANCING AREA UNWARRANTEC UCW FLYING	38	.4 20	4 58	17 29	20 11	37 40	17 67	24 31	41 98	
FAILEC TO USE ALL AVAILABLE FUNWAY	•	5	5	6	4	10	6	9	15	

ELLANEOUS ACTS, CONDITIONS (CONTINUED)									
	FA1	AL ACCID	ENTS		TAL ACCI		AL	L ACCIDE	NTS
N.	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TCTAL	CAUSE	FACTOR	TCTAL
LANCEC AT WHONG AIRPORT INATTENTIVE TO FUEL SUPFLY	1		1	15	.5 .5	.5 20	16	5 5	5 21
FLEW INTO BLIND CANYON PREMATURE FLAF RETRACTION	9	-4	13	7 1		7 1	16	4	20 1
POCKLY FLANNER APPROACH		7	7	12	48	60	12	55	67
MISCALCULATED FUEL CONSUMPTION JETTISCNED LOAD		1	1	14 1	. 6 20	20 21	14	6 21	22 22
STOLEN OR UNAUTHORIZED USE OF AIRCRAFT LANCED ON FOAMED RUNWAY		.5	5	1	13 -3	14	1	18 3	1/5 -3
CORRECTING LENSES-NOT USED IMPROPERLY SECURED	3	1	1	,	5	12	10	ī	1
BCGUS PART	1		3 1	7		12	10 1	5	15 1
ELECTRICAL FAILURE ENGINE LOADED UP				3 13	12	15 13	3 13	12	15 13
EXPLOSIVE DECOMPRESSION FATIGUE FRACTURE	1		1 3	26		26	1 29		1 29
FUEL GRADE-IMPROPER	· 1		ĩ	1		1	2		.5
HYDRAULIC FAILURE RPM⊣UNCONTROLLABLE-OVERSPEED	1		1	2		2	2 1		·2
THRUST REVERSAL-ASYMETRICAL THRUST REVERSAL-UNWANTED				1		1 1	1 1		1 1
WINDSHIELD, CIRTY, FOGGY, ETC-RESTRICTED VISION		1	1	5	11	16	5	12	17
IMPROPER ALIGNMENT/ADJUSTMENT	2		2	2 11	1	2 12	2 13	1	2 14
FAILURE OF TWC CR MORE ENGINES SEPARATION IN FLIGHT	1	.4 38	4 39	11 1	7 23	18 24	11 2	11 61	22 63
FIRE IN CABIN/ COCKPIT/ BAGGAGE CCMPARTMENT FIRE IN ENGINE	2	1 2	1 4	7	1 1	1 8	9	2	2 12
CCRRCDED/CORRCSION INOCHRECT TRIM SETTING	-			10	1	11	10	1	11
CARGC SHIFTED		1	1		1 1	1 1		2 1	·2
CONGESTED TRAFFIC-PATTERN PILCT FATIGUE	1	2 14	2 15		-6 23	6 23	1	8 37	9 38
FUEL EXHAUSTICN FUEL CONTAMINATION-EXCLUSIVE OF WATER IN FUEL	16 2	1	17	166 5		166	182	1	183 7
PILCT SUFFERED HEART ATTACK	7		7		_		.7		.7
ALGOHOLIC IMPAIRMENT OF EFFICIENCY AND JUDGMENT HYPCXIA	16	1·3 1	29 1	3	2 1	-5 1	19	15 2	34 2
CARBON MONOXIDE POISONING ICE-IN FUEL	1		1	1		1	2		2
ICE∹CARBURETOR ICE∼FROPELLER	4		4	48		48	52		52 2
AIRFRAME ICE	5	.4	9	10	.4	1.4	15	8	23
ICE-WINDSHIELC IMPROFERLY LOADED AIRCRAFT-WEIGHT-AND/OR CG	3	1:2	1 15	1 9	. 3 12	21	1 12	24	.5 36
INTERFERENCE WITH FLIGHT CONTROLS WHITECUT				14	.5	16	1.4	.5	16
SUNGLARE LACK OF LUBRICATION-SPECIFIC FART, NOT SYSTEM	1 1	.€	7 1	1 5	21	22	2 6	27 2	29
OIL EXPAUSTION-ENGINE LUBRICATION SYSTEM	ì		i	14	2	14	15	2	15
OIL EXPAUSTION-PROPELLER SYSTEM SIMULATED CONCITIONS	1		1	2 15	29	44	2 16	29	·2 45
FUEL SIPHONING WATER IN FUEL	5		5	3 33		.3 33	3 38		.3 38
AIRCRAFT CAME TO REST IN WATER FROZEN, MOISTURE		-35	35	2	61	61		96	96 -3
MISSING	1		1	10	1	11	2 11	1	12
TOUCH AND GO LANDING Hydroflaning on wet runway		1	1	1	69	69 1	1	70	70 1
OVERLOAD FAILLRE MATERIAL FAILLRE	26 8	1.3 2	39 10	4 146	566 12	570 158	30 154	579 14	609 168
FUEL STARVATION	15		15	144	ì	145	159	i	160
OIL STARVATION IMPROPER CLEARANCE-TOLERANCE	2	1	3	, 6	.5	8	8	3	11
FUEL SELECTOR POSITIONED BETWEEN TANKS FIRE OF UNDETERMINED GRIGIN	.3 1	2	3 3	4	1	1	7 1	.3	.7 .4
UNAPPROVED MODIFICATION IMPROPER/INACEQUATE VENTING		1	1	3 1	1	4	3	2	5 1
POCE WELD PREVIOUS DAMAGE	2	2	2				-2	,,	.5
BRAKES FROZEN	1 .	2	3	12	.9	21	13	11	24
LEAK/LEAKAGE .	1	1,	2	13	٠3	1-6	1.4	4	1.8

MISCELLANEOUS ACTS, CONDITIONS (CONTINUED)	FATAL ACCIDENTS		NONFATAL ACCIDENTS			ALL ACCIDENTS			
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TCTAL
LON FLUID LEVEL CIROLIT BREAKER POPPEC				2	1 11	.3 13	2	1 11	:3 13
LCM .CCMPRESSICN RUNKAY CLOSEC			,	1	4	1 5	1	4	1 5
DOWNNING CAREGO DEPOSITS LANCED IN CONSTRUCTION AREA		1	1	1 1	125	130 1 2	1 1 1	133 1 1	134
OVER TORQUED UNCER TORGUEC LOCSE, PART/FITTING	1		1	4 7		1 4 7	4 8		1 .4 .e
BENT BINCING BUCKLED BURST				7 2 2 3	1	7 4 3 3	7 2 2 3	2 1	7 .4 .3
CHAFFED CCLLAPSED CRCSSED				1 1 1		1 1 1	1 1 1		1 1 1
DETERIORATED DISOGNAECTED ELONGATED	8	1	1 8	32 2	.2	.34 .2	2 40 2	1 2	3 42 2
EXCESSIVE-WEAR/PLAY ERRATIC FULCTUATING				10	1 13 1	11 13 1	10	1 13 1	11 13 1 2
FRAYEC FRICTION+ EXCESSIVE GROUNDED	4	,	5	2 1 1 9	3	2 1 1 12	2 1 1 13	4	1 1 17
IMPROPERLY INSTALLED JAMMED NICKED		1		12	1 1	13 1	12	1	1:3 1
OBSTRUCTEC CPEN OVERHEATED	1		1	14 1 2	1	15 1 2	15 1 2	1	16 1 .2
PINOFED PRESSURE TOO LOW PRESSURE, NONE				2 1	.3	1 5 1	2 1	3	1 5 1
SOCREC SPEAHED STICKING	1		1	2		2	1 2 2		1 2
STRIFFED STUCK TEMPERATURE TCC LOW		1	1	1 4 1	1	1 5 1	1 .4 1	2	1 6 1 7
VIBRATION, EXCESSIVE WARFEC CONCESSED RAMP/TAXIWAY	,		,	2 1 3	5 .9	7 1 9 .3	2 1 4	5 9	, 1 .5 .4
ICE-INDUCTION FIRE IN WING LCAC NOT JETTISONEC	1 2		1 2	1	1.5	1.3	2	12	13
INTENTIONAL GROUND-WATER LOCP-SWERVE INTENTIONAL WHEELS UP				34 36	.3	42 39	. 36	.3	42 39

DIRECT ENTRY CAUSES

PILOT-FAILEC TO ARREST +LGH SIMK HATE CRG LDG
PILOT-INTENTIONALLY NOSEC ACFT CVER ON BACK
MISC-FARACHLTE CPENED INADVERTENTLY IN CABIN.
MISC-FARACHLTE CPENED INADVERTENTLY IN CABIN.
MISC-BNFLT COLLISION WITH CONNOCET.
MISC-BNADVERTENT ENGINE START
SEAT THACK SAFETY BLOCK MISSING.SEAT WOULD LOCK OK
FLT .CONTROLE-AERODYNAMIC LOSS OF ELEVATOR CONTROL
MISC-FILOT BLUNDED BY LIGHTNING FLASH
PILOT-EXCESSIVE TAXI SPEED FOR CONDITIONS
LDG GFR-L GR NOT LOCKED BFR T/C DUE INSF EXTN TIME.
PLT-LCSS OF COLT AT ALT TOO LOW TO EFFECT RCVRY.
PILOT IN COMPANC - MISSREAD ALTIMETER
MISC-LOSS OF CONTROL FOR UNDETERNINED REASON
PILOT-SLIPPED IN BOARDING ACFT-FELL TO GRND.
PERSONNEL-FAA INADECUATE CBST CLNC GUIDANCE

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

KIND OF FLYING BY INJURY INDEX SMALL FIXED WING-1973

	4	A ^V	ous	40°	.			
	44	SER	W	40		RECORDS	ACCIDENTS	PERCENT
INSTRUCTIONAL								
CLAL	25	15	28	143		211	211	5.40
SCLO	11	11	23	120		165	Ī65	4.22
CHECK	3	2	1	10		16	16	.41
TRAINING	10	14	25	102		151	151	3.87
NCNCOMMERCIAL		•		•				
PLEASURE	397	191	306	1230		2124	2114	54.38
PRACTICE	10	14	18	95		137	ĩ 37	3.51
EUSINESS	70	26	27	165		288	288	7.37
CCRPORATE/EXECUTIVE	18	1	6	52		77	77	1.97
AERIAL SURVEY	2		1	3		6	6	.15
CCMPANY FLIGHT								
CTHER	1	1		5		7	7	.10
GCMMERCIAL								
AERIAL APPLICATION	29	35	34	104		202	202	5.17
CROP CONTROL RELATED FLIGHT	8	5	А	105		. 126	Ī26	3.23
FIRE CONTROL	2					2	2	.0=
FIRE CONTROL RELATED FLIGHT			1	1		2	2	.0=
AERIAL MAPPING/PHOTOGRAPHY	2		1	6		9	9	.23
AERIAL ADVERTISING	2		2			4	4	-10
PCWER AND PIPELINE PATROL	6	1		5		12	12	.31
FISH SPOTTING				2		2	2	.0=
AIR TAXI-PASSENGER OPERATIONS	21	7	5	42		75	75	1.92
AIR TAXI-CARGO CPERATIONS	15	7	4	25		51	50	1.31
CONSTRUCTION WORK								
SCHEDULED PASSENGER SERVICE								
SCHEDULED CARGO SERVICE								
INTRA-STATE CHARTER PASSG.			2	۰ 2		4	4	.10
INTRA-STATE CHARTER CARGO.	1			1		2	2 .	.05
MILITARY CONTRACT-PASSENGER								
MILITARY CONTRACT-CARGO								
CHARTER CARGO-DOMESTIC				1		1	1	.03
CHARTER PASSG-DOMESTIC								
OHARTER-CARGO-INTERNATIONAL								
CHARTER-PASSG-INTERNATIONAL			1	1		2	, 2	, n=
CTHER	1	1		4		6	5	.15

KIND OF FLYING	م ،	A LER	1005	0° 40°	RECORDS	S ACCIDENTS	PERCENT
UNKNOWN/NCT REPORTED	`	7	4.	4			
MISCELLANECUS							
ÉXPERIMENTATION						,	
TEST	12	4	6	15	3		.95
CEMONSTRATION	4	1	4	10	10	9 19	.49
FERRY	10	6	13	4.8	7	7 77	1.97
SEARCH AND RESCUE	2	2	1	3		8 8	.20
AIR SHOW/AIR RACING	3		1	4	,	3 8	.20
PARACHUTE JUMP	2	1	7	11	2	1 21	•54
PARACHUTE JUMP-AIR SHOW							
TOWING GLIDERS	2	1	1	6		10	.26
SEEDING CLCUDS							
FUNTING	3	2	1	5	1	1 10	.20
PCLICE PATROL	2			1		3 3	.08
FIGHWAY TRAFFIC ADVISORY				1		1 1	.0.3
ALL OTHER PURLIC FLYING	3		1	5		9 8	. 22
CTHER	2	1	1	4		9 8	.20
UNKNOWN/NCT REPORTED	6	1		5	1	2 12	-31
RECORDS	685	350	529	2342	390	5	
ACCIDENTS	675	347	525	2319		3866	
PERCENT	17.5	9.0	13.5	60.0			

INJURIES, ACCIDENTS SMALL FIXED WING

INJURIES

					•		
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT	638	311	495	2462			3906
COPILOT	42	10	11	60			123
DUAL STUDENT		13	21	152			207
CHECK PILOT	2 <u>1</u> 3		1	9			13
FLIGHT ENGINEER	3		-	,			13
NAVIGATOR				1			1
CABIN ATTENDANT				1			1
EXTRA CREW	5		,				10
	-	220	1	2227			10
PASSENGERS	598	239	392	2237			3466
TOTAL	1307	573	921	4925		ABOARD	7726
·O·AL	1507	, 3,73	721	7727		ADUAND	1120
⋆ OTHER AIRCRAFT	2			82			84
OTHER GROUND	2 6	11	11	6			34
GRAND TOTAL	1315	584	932	5013			7844

INVOLVES 3866 TOTAL ACCIDENTS INVOLVES 675 FATAL ACCIDENTS

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

	•			
•				
		•		

GENERAL AVIATION ACCIDENTS

LARGE FIXED-WING AIRCRAFT

		•			
				•	
	l.		•		
				e.	
					•

TYPE OF ACCIDENT BY AIRCRAFT DAMAGE LARGE FIXED WING

		760	HIAL			
	Ś	, ₆₀ , %	WHO HOME	RECORDS	ACCIDENTS	PERCENT
	Of	So.	W. 42			
GROUND-WATER LOOP-SWERVE	1	4		5	5	10.64
DRAGGED WINGTIP POD OR FLOAT						
WHEELS-UP LANDING	1	5		3	3	6.38
WHEELS-DOWN LANDING IN WATER						
GEAR COLLAPSED		2		2	2	4.26
GEAR RETRACTED		1		1	1	2.13
HARD LANDING	1	3		4	4	8.51
NOSE OVER/DOWN		1		1	1	2.13
ROLL OVER						
OVERSHOOT	1	3		4	4	8.51
UNDERSHOOT	1	2		3	3	6.38
COLLISION BETWEEN AIRCRAFT						
BOTH IN FLIGHT	1	1		2	2	4.26
ONE AIRBORNE						
BCTH ON GROUND			1	1	1	2.13
COLLISION WITH GROUND/WATER						
CONTROLLED	2	1		3	3	6.38
UNCONTROLLED	3			3	3	6.38
COLLIDED WITH						
WIRFS/POLES						
TREES						
RESIDENCE/S						
BUILDING/S						
FENCE, FENCEPOSTS						
ELECTRONIC TOWERS						
RUNWAY OR APPROACH LIGHTS						
AIRPORT HAZARD						
ANIMALS						
CROP						
FLAGMAN LOADER						
DITCHES						
SNOWBANK						
PARKED AIRCRAFT		1		1	1	2.13
AUTOMOBILE						
DIRT BANK						

OBJECT

FIRST TYPE OF ACCIDENT BIRD STRIKE	DESERO SIR HINDA MORE	RECORDS ACCIDENTS PERCENT
STALL	1	1 1 2.13
SPIN		
SPIRAL		
MUSH	1	1 1 2.13
FIRE OR EXPLOSION		
IN FLIGHT	1	1 1 2.13
ON GROUND		
AIRFRAME FAILURE		•
IN FLIGHT		
ON GROUND		
ENGINE TEARAWAY		
ENGINE FAILURE OR MALFUNCTION	2 7	9 9 19.15
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	1 1 2.13
UNDETERMINED	1	1 1 2.13
RECORDS	17 29 1	47
ACC IDENTS	17 29 1	47
PERCENT	36.2 61.7 2.1 .0	

PHASE OF OPERATION BY INJURY INDEX LARGE FIXED WING

	4PT	SER	, w	140	4042				RECORDS	ACCIDENTS	PERCENT
STATIC											
STARTING ENGINE/S											
ICLING ENGINE/S											
ENGINE RUNUP											
ICLING ROTORS											
PARKED-ENGINES NOT OPERATING					1				1	1	2.13
OTHER											
IXXI											
TC TAKEOFF											
FROM LANDING					2				2	2	4.26
CTHER											
GROUND TAXI TO TAKEOFF											
GROUND TAXI FROM LANDING											
GROUND TAXI, OTHER											
AERIAL TAXI TO TAKEOFF											
AERIAL TAXI TO/FROM LANDING											
AERIAL TAXI. OTHER											
TAKEOFF											
RUN	1	1			2		-		4	4	8.51
INITIAL CLIMP	4		1	ı	ı				6	6	12.77
VERTICAL											
RUNNING											
ABORTED											
ABORTED											
ABORTED											
OTHER	1								1	1	2.13
INFLIGHT											
CLIMB TO CRUISE											
NORMAL CRUISE			. 1	l	2				3	3	6.38
DESCENDING	1				1				2	2	4.26
HOLDING											
HOVERING											
POWER-ON DESCENT											
AUTOROTATIVE DESCENT											
ACROBATICS											

BUZZING

FIRST OPERATIONAL PHASE	A P	· PIO	WIHOR	ONE				
	4*	5*	4.	4		RECORDS	ACCIDENTS	PERCENT
UNCONTROLLED DESCENT	1					1	1	2.13
EMERGENCY DESCENT								
LOW PASS	1					1	1	2.13
OTHER	2					2	2	4.26
EN ROUTE TO TREAT CROP								
EN ROUTE TO RELOADING AREA								
SURVEY FIELD/AREA								
STARTING SWATH RUN	1					1	1	2.13
SWATH RUN	1					1	1	2.13
FLAREOUT FOR SWATH RUN								
PULLUP FROM SWATH RUN								
PROCEDURE TURNAROUND				1		1	1	2.13
CLEANUP SWATH								
MANEUVER TO AVOID OBSTRUCTION								
RETURN TO STRIP								
LANDING								
TRAFFIC PATTERN-CIRCLING				1		1	1	2.13
FINAL APPROACH				3		3	3	6.38
INITIAL APPROACH								
FINAL APPROACH								
LEVEL OFF/TOUCHDOWN	2	1	4	5		12	12	25.53
RCLL				5		5	5	10.64
ROLL-ON/RUN-ON								
POWER-ON LANDING								
PCWER-OFF AUTOROTATIVE LDG								
GO-AROUND								
MISSED APPROACH								

RECORDS	15	2	6	24	47
ACCIDENTS	15	2	6	24	47
PERCENT	31.9	4.3 12	2.8 5	51.1	

CAUSE/FACTOR TABLE LARGE FIXED WING AIRCRAFT-1973

INVOLVES 42 TOTAL ACCIDENTS
INVOLVES 13 FATAL ACCIDENTS

ACCIDENTS WITH ASSIGNED CAUSES ONLY

	FAT	AL ACCID	ENTS	NONFA	TAL ACCI	DENTS	ALL ACCIDENTS			
PROAC CAUSE/FACTOR	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	
PILOT	8 61•54	2 15.38	8 61.54	22 75.86	7 24.14	23 79.31	30 71.43	9 21 - 43	31 73.81	
PERSONNEL	3 23.08	2	5	6 20.69	2	7	9 21.43	4	12 28.57	
AIRFRAME	.00	.00	.00	.00	.00	•00	.00	.00	.00	
LANDING GEAR	•00	.00	.00	6 20.69	.00	6 20.69	6 14•29	.00	6 14.29	
PCWERPLANT	1 7.69	1 7.69	2 15.38	3 10.34	2 6.90	5 17•24	4 9.52	3 7.14	7 16.67	
SYSTEMS	• 0 0	.00	.00	1 3.45	2 6.90	3 10.34	ī 2.38	2 4.76	7.14	
INSTRUMENTS/EQUIPMENT AND ACCESSORIES	.00	.00	.00	.00	. 0 0	.00	.00	.00	.00	
ROTORCRAFT	•00	.00	.00	.00	.00	.00	.00	.00	.00	
ATRPORTS/AIRWAYS/FACILITIES	1 7.69	.00	1 7.69	3 - 10.34	5 17•24	8 27.59	4 9.52	5 11.90	9 21.43	
WEATHER	.00	30.77	4 30.77	1 3•45	5 17 . 24	6 20.69	1 2.38	9 21.43	.10 23.81	
TERRAIN	.00	.00	.00	.00	4 13.79	4 13.79	.00	4 9•52	9.52	
MISCELLANEOUS	1 7.69	.00	1 7.69	3 10.34	.00	3 10.34	4 9.52	.00	9.52	
UNDETERMINED	3 23.08	3 .00	3 23.08	.00	.00	.00	3 7.14	.00	7.14	

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

LARGE FIXED WING AIRCRAFT-1973

INVOLVES 42 TOTAL ACCIDENTS INVOLVES 13 FATAL ACCIDENTS

ACCIDENTS WITH ASSIGNED CAUSES ONLY

	FATAL ACCIDENTS				TAL ACCI		ALL ACCIDENTS		
DETAILED CAUSE/FACTOR	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TO,TAL
** PILOT **								1	
PILOT IN COMMANC ATTEMPTED OPERATION W/KNOWN DEFICIENCIES IN EQUIPMENT ATTEMPTED OPERATION BEYOND EXPERIENCE/ABILITY LEVEL DELAYED ACTION IN ABORTING TAKEOFF. DELAYED IN INITIATING GO-AROUND DIVERTED ATTENTION FROM OPERATION OF AIRCRAFT EXCECTED DESIGN STRESS LIMITS OF AIRCRAFT FAILED TO EXTEND LANDING GEAR RETRACTED GEAR PREMATURELY FAILED TO SEE AND AVOID OTHER AIRCRAFT FAILED TO SEE AND AVOID OTHER AIRCRAFT FAILED TO OBTAIN/MAINTAIN FLYING SPEED FAILED TO USE OF INCORRECTLY USED MISC EQUIPMENT FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES ETC IMPROPER OPERATION OF POWERPLANT + POWERPLANT CONTROLS IMPROPER IN-FLIGHT DECISIONS OR PLANNING INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING INADEQUATE SUPERVISION OF FLIGHT LACK OF FAMILIARITY WITH AIRCRAFT MISMANAGEMENT OF FUEL EXERCISED POOR JUDGMENT SELECTED UNSUITABLE TERRAIN MISJUDGED DISTANCE, SPEED, AND ALTITUDE MISJUDGED DISTANCE AND SPEED MISJUDGED SPEED AND ALTITUDE	1 1 1 2 1 1 1 1 1 1	1 1 2	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 2 2 2 3	1 2 1 1	2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	112 3212 42 2 113331	1 1 2 2 1 1 2 2	
MISJLDGED CLEARANCE FAILED TO MAINTAIN DIRECTIONAL CONTRCL SELECTED WRONG RUNWAY RELATIVE TO EXISTING WIND FAILED TO ABORT TAKEOFF FAILED TO INITIATE GO-AROUND	1		1	1 3 2 1 1	1	3 2 1 2	1 4 2 1	1	1 4 ? 1 2
SUBTOTAL	14	6	20	33	7	40	47	13	60
COPILCT FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES, ETC IMPROPER LEVEL OFF				1	1	1	1	1	1 1
SUBTOTAL				1	1	2	1	1	5
** PERSONNEL ** FLIGHT INSTRUCTOR MAINTENANCE, SERVICING, INSPECTION INADEQUATE INSPECTION OF AIRCRAFT (MAINTENANCE PERSONNEL)					1	1		1	í
INADEQUATE MAINTEMANCE AND INSPECTION OPERATIONAL SUPERVISORY PERSONNEL INADEQUATE SUPERVISION OF FLIGHT CREW INADEQUATE SUPERVISION/TRAINING OF RAMP CREWS WEATHER PERSONNEL TRAFFIC CONTROL PERSONNEL	1	1	1			4	i i	1	i 1
OTHER AIRPORT SUPERVISORY PERSONNEL FAILURE TO NOTIFY OF UNSAFE CONDITION OTHER	1	1	1		1	1	1	i i	1 1 1
A PRHAYS FACILITIES PERSONNEL PRODUCTION-DESIGN-PERSONNEL MISCELLANEOUS-PERSONNEL PILCT OF OTHER AIRCRAFT DRIVER OF VEHICLE THIRD PILOT FLIGHT ENGINEER	1		1	1		1	1		1

CAC	JSE/FACI	UR TABLE							
PFRSCANEL (CONTINUED)	FAT	AL ACCID	ENTS		TAL ACCI		AL	L ACCIDE	NTS.
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
							,		
IMPROPER USE OF EQUIPMENT DISPATCHING				1		1	1		i
SUBTOTAL	3	2	5	6	2	8	9	4	13
** AIRFRAME **									
WINGS FUSELAGE LANDING GEAR MAIN GEAR-SHOCK ABSORBING ASSY, STRUTS, ATTACHMENTS, ETC NORMAL RETRACTION/EXTENSION ASSEMBLY EMERGENCY/EXTENSION ASSEMBLY WHEELS, TIRES, AXLES BRAKING SYSTEM (NORMAL) FLIGHT CONTROL SURFACES SURTOTAL				1 1 1 1 2 2		1 1 1 1 2	1 1 1 1 2		1 1 1 2
** POWERPLANT **									
ENGINE STRUCTURE IGNITION SYSTEM FUEL SYSTEM PUMPS LUBRICATING SYSTEM SEALS AND GASKETS COOLING SYSTEM COWLING PROPELLER AND ACCESSORIES EXHAUST SYSTEM ENGINE ACCESSORIES ENGINE CONTPOLS-COCKPIT MIXTURF CONTROL ASSEMBLIES		1	1	1 1	1	1 1 1 1	1 i	2	2 1 1
POWERPLANT-INSTRUMENTS MISCELLANEOUS BIRD INGESTION REDUCTION GEAR ASSEMBLY COMMESSOR ASSEMBLY COMMESSION ASSEMBLY TURBINE ASSEMBLY ACCESSORY ORIVE ASSEMBLY LUBRICATING SYSTEM FUEL SYSTEM SAFETY SYSTEM SAFETY SYSTEM IGNITION SYSTEM TOROUFMETER AIR BLEED EXHAUST SYSTEM	1		1				í		ì
THRUST REVERSER REVERSER DOORS PROPELLER SYSTEM CONSTANT SPEED DRIVE POWER LEVER REVERSE THRUST LEVER ENGINE INDICATING EQUIPMENT ENGINE INSTALLATION								1	
SLETOTAL	1	1	2	3	2	5	4	. 3	7
** SYSTEMS **									
ELECTRICAL SYSTEM PROTECTIVE DEVICES HYDRAULIC SYSTEM RESERVOIR, LINES, FITTINGS OTHER FLIGHT CONTROL SYSTEMS ANTI-ICING, DE-ICING SYSTEMS AIR CONDITION, HEATING AND PRESSURIZATION AUTO PILOT				1	1	1 1 1	. 1	i i	i i

SYSTEMS (CONTINUED)	FATAL ACCIDENTS		ENTS	NONF	TAL ACCI	DENTS	ALL ACCIDENTS		
					EACTOR			EACTOR	
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
FIRE WARNING SYSTEM									
FIRE EXTINGUISHER SYSTEM OXYGEN SYSTEM OTHER SYSTEMS									
SUBTOTAL				1	2	3	ī	2	3
** AIRPORTS/AIRWAYS/FACILITIES **									
AIRPORT FACILITIES RUNWAY LIGHTING AIRPORT CONDITIONS					1	1		ì	i
WET RUNWAY SNCW ON RUNWAY				3	1	3 1	3	í	3
OTHER AIRWAYS FACILITIES	1		1	2	4	6	3	4	17
SUBTOTAL	1		1	5	6	11	6	6	12
94 WEATHER 44									
LOW CEILING		1	1					ī	i
RAIN FOG		1	1		1	1		1	1 1
SNCW UNFAVORABLE WIND CONDITIONS		1	1		1 1	1 1		1 2	5
TURBULENCE ASSOCIATED WITH CLOUDS AND/OR THUNDERSTORMS DOWNDRAFTS, UPDRAFTS		1	1	1	1	1 1	1	1 2	2
OBSTRUCTIONS TO VISION HIGH CENSITY ALTITUDE		1	1		1	1		. 1	1
SLBTOTAL		6	6	1	5	6	ī	11	12
** TERRAIN **									
HIGH VEGETATION ROUGH/UNEVEN					1 1	1 1		1 1	1
GLASSY WATER SANCY					1 1	1 1		1 1	1 1
SUBTOTAL					4	4		4	4
** MISCELLANEOUS **									
EVASIVE MANEUVFR TO AVOID COLLISION FORFIGN OBJECT DAMAGE				1		1 1	1 1		1
FOREIGN MATERIAL AFFECTING NORMAL OPERATIONS UNCETERMINED	1		1 3	1		ì	2		3
SUBTOTAL	4		4	3		3	7		
									_
GRAND TOTAL	23	15	38	59	29	88	82	44	126
** MISCELLANEOUS ACTS, CONDITIONS **								2	
CHECKLIST-FAILED TO USE CREW COORDINATION-POOR CREW COORDINATION-POOR	1	1	2	2	1	1	i 3	1 1 1	. 1 2 4
IMPROPPE EMERGENCY PROCEDURES INSTRUMENTS-MISREAD OR FAILED TO READ NOT ALLIGNED WITH RUNWAY/INTENDED LANDING AREA	1		1	2	1	1 1	. 1	i	1
INATIENTIVE TO FUEL SUPPLY POORLY PLANNED APPROACH				į	2	1 2	ì	2	î 2
JETTISONED LCAD IMPROPERLY SECURED		1	1	1	ī	1	í	2	, 1
HYDRAULIC FAILURE THRUST REVERSAL-UNWANTED	1		1	•	1	1	ĩ	1	1
IMPROPER ALIGNMENT/ADJUSTMENT FAILURE OF TWO OR MORE ENGINES		1	1	2 1	1	2	? 1	2	? 3
FIRE IN ENGINE CORRCDED/CORROSION		1	1	1	1	2	ĺ	1 1	1

MISCELLANEOUS ACTS, CONDITIONS (CONTINUED)	FAT	AL ACCID	ENTS	NONF A	TAL ACCI	DENTS	AL	L ACCIDE	NTS.
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
CARGC SHIFTED FUEL EXHAUSTION ICE-WINDSHIELD IMPROPERLY LOADED AIRCRAFT-WEIGHT-AND/OR CG WATER IN FUEL AIRCRAFT CAME TO REST IN WATER HYDROPLANING ON WET RUNWAY OVERLOAD FAILURE MATERIAL FAILURE MATERIAL FAILURE FUEL STARVATION LEAK/LEAKAGE LOW FLUID LEVEL DOWN-WIND DISCONNECTED JAMMED PRESSURE TOO LOW FIRE IN WING LOAD NOT JETTISONED INTENTIONAL GROUND-WATER LOOP-SWERVE INTENTIONAL GROUND-WATER LOOP-SWERVE INTENTIONAL GROUND-WATER LOOP-SWERVE		1 1 1	1 1 1	1 1 2 3 2 1 1	1 1 2 9	1 1 1 1 2 2 9 3 2 1 1 1 3 1 1 1 3	1 2 3 2 1 1 1 3 3	1 1 1 2 9 1 4 1	111111222933221141113311113

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

KIND OF FLYING BY INJURY INDEX LARGE FIXED WING

	in a sea	1005 10	e 76				
	4 Pi sta	WIL	40,		RECORDS	ACCIDENTS	PERCENT
INSTRUCTIONAL							
DUAL			1		1	1	2.13
SCLO							1
CHECK							
TRAINING	1		1		2	2	4.26
NONCOMMERCIAL							
PLEASURE			3		3	3	6.áe
PRACTICE			1		1	1	2.13
BUSINESS	1		1		2	2	4.26
CCRPORATE/EXECUTIVE	5	2	6		13	13	27.66
AERIAL SURVEY		1			1	1	2.13
COMPANY FLIGHT							
OTHER							
COMMERCIAL							
AERIAL APPLICATION	2		1		3	3	6.áe
CROP CONTROL RELATED FLIGHT							
FIRE CONTROL	2		l		3	3	6.38
FIRE CONTROL RELATED FLIGHT	1		1		2	2	4.26
AERIAL MAPPING/PHOTOGRAPHY							
AERIAL ADVERTISING							
PCWER AND PIPELINE PATROL							
FISH SPOTTING							
AIR TAXI-PASSENGER OPERATIONS	1	1	2		4	4	8.51
AIR TAXI-CARGO OPERATIONS		1			1	1	2.13
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			l		1	1	2.13
CHARTER PASSG-DOMESTIC							
CHARTER-CARGO-INTERNATIONAL	1				1	1	2.13
CHARTER-PASSG-INTERNATIONAL	1				1	1	2.13
OTHER							

KIND OF FLYING	40	A SER	OUS	O ⁴ O ⁴	iç.			RECORDS	ACCIDENTS	PERCENT
UNKNOWN/NOT REPORTED										
MISCELLANEOUS										
EXPERIMENTATION										
TEST		*								
DEMONSTRATION										
FERRY			1	5				6	6	12.77
SEARCH AND RESCUE										
AIR SHOW/AIR RACING										
PARACHUTE JUMP										
PARACHUTE JUMP-AIR SHOW										
TCWING GLIDERS										
SEEDING CLOUDS										
HUNTING										
POLICE PATROL										
HIGHWAY TRAFFIC ADVISORY										
ALL OTHER PURLIC FLYING	1							1	1	2.13
OTHER							•			
UNKNOWN/NOT REPORTED	. 1							1	1	2.13
RECORDS	15	2	6	24				47		
ACCIDENTS	15	2	6	24					47	
PERCENT		4.3							.,	

INJURIES, ACCIDENTS LARGE FIXED WING

INJURIES

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT	14	2	2	29			47
COPILOT DUAL STUDENT CHECK PILOT	12		3	21 3			36 3
FLIGHT ENGINEER NAVIGATOR	3		1	4			8
CABIN ATTENDANT			2	2 5			2
EXTRA CREW PASSENGERS	9	1	3 5	89 89			8 104
TOTAL	38	3	. 14	153		ABOARD	208
* OTHER AIRCRAFT OTHER GROUND	3	. 1	4	3			6 12
CTILL SITUATE	Ü			•			
GRAND TOTAL	47	4	18	157			226

INVOLVES 47 TOTAL ACCIDENTS INVOLVES 15 FATAL ACCIDENTS

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

GENERAL AVIATION ACCIDENTS

ROTORCRAFT

TYPE OF ACCIDENT BY AIRCRAFT DAMAGE ROTORCRAFT

		140	MIA		
	aks 14	0, 841	RECORDS	ACCIDENTS	PERCENT
	Q.	5	4 4		
GROUND-WATER LOOP-SWERVE	1	1	2	2	.71
DRAGGED WINGTIP POD OR FLOAT					
WHEFLS-UP LANDING					
WHEELS-DOWN LANDING IN WATER					
GEAR COLLAPSED					
GEAR RETRACTED					
HARD LANDING	3	24	27	27	9.64
NCSF OVER/DOWN		2	2	2	.71
ROLL OVER		6	6	6	2.14
OVERSHOOT					
UNDERSHOOT	1		1	1	.36
COLLISION BETWEEN AJRCRAFT					
BOTH IN FLIGHT	1		1	1	. 36
ONE AIRBORNE					
ECTH ON GROUND		4	4	2	1.43
COLLISION WITH GROUND/WATER					
CONTROLLED	5	15	20	20	7.14
UNCONTROLLED	15	21	36	36	12.86
COLLIDED WITH					
WIRES/POLES	A	16	24	24	8.57
TREES	3	5	8	8	2.86
RESIDENCE/S					
BUILDING/S		1	1	1	.36
FENCE+ FENCEPOSTS					
ELECTRONIC TOWERS					
RUNWAY OR APPROACH LIGHTS					
AIRPORT HAZARD					
ANIMALS					
CROP	1	1	2	2	.71
FLAGMAN LOADFR					
DITCHES					
SNOWBANK					
PARKED AIRCRAFT		1	1	1	.36
AUTOMOBILE					
DIRT BANK		2	2	2	.71
OBJECT	2	10	12	12	4.29

and the second and the second second

		ري	ILA						
FIRST		gotte.	STANTIAL A	∠ ¢					
TYPE OF ACCIDENT	Otes	`` ₅ 5%	WILL TO),			RECORDS	ACCIDENTS	PERCENT
BIRD STRIKE		1					1	1	•36
STALL									
SPIN									
SPIRAL									
MÚSH	2	1					3	3	1.07
FIRE OR EXPLOSION									
IN FLIGHT	2						. 2	2	.71
ON GROUND									
AIRFRAME FAILURE									
IN FLIGHT	3	1					4	4	1.43
ON GROUND									
ENGINE TEARAWAY									
ENGINE FAILURE OR MALFUNCTION	11	73					84	84	30.00
PROPELLER/ROTOR FAILURE									
PROPELLER									
TAIL ROTOR	4	11					15	15	5.36
MAIN ROTOR	3	6					9	9	3.21
PROP ROTOR ACONT TO PERSON		1		1			2	2	•71
JET INTAKE/EXH ACONT TO PERS									
PROPELLER/JET/ROTOR BLAST									
TURBULENCE		1					1	- 1	.36
HAIL DAMAGE TO AIRCRAFT	•								
LIGHTNING STRIKE									
EVASIVE MANEUVER									
UNCONTROLLED ALT DEVIATION									
DITCHING									
MISSING ACFT NOT RECOVERED									
MISCELLANEOUS/OTHER	3	4					7	7	2.50
UNDETERMINED	3						3	3	1.07
RECORDS	71	208		1			280		
ACCIDENTS	71	206		1				278	
PERCENT	25.4	74.3	.0 .4	4					

PHASE OF OPERATION BY INJURY INDEX ROTORCRAFT .

	*AT	A SERI	OUS	04 04	,	RECORDS	ACCIDENTS	PERCENT
STATIC								
STARTING ENGINE/S				1		1	1	34
IDLING ENGINE/S	1			1		1	1	.36
ENGINE RUNUP	1					1	1	• .76
IDLING ROTORS		2		1		3	2	1.07
PARKED-ENGINES NOT OPERATING		2		•		3	2	1.07
OTHER								
IXAI								
TC TAKEOFF				1		1	1	.36
FROM LANDING				•		•	•	•
OTHER				1		1	1	.36
GROUND TAXI TO TAKEOFF				•		•	•	• • • • • • • • • • • • • • • • • • • •
GROUND TAXI FROM LANDING								
GROUND TAXI, OTHER								
AERIAL TAXI TO TAKEOFF				1		1	1	•36
AERIAL TAXI TO/FROM LANDING			1			1	1	.36
AERIAL TAXI, OTHER				1		1	1	.36
TAKEOFF								
RUN			1			1	1	.36
INITIAL CLIMR	2	4	3	9		18	18	6.43
VERTICAL	1	2	6	11		20	20	7.14
RUNNING				1		1	1	.36
ABORTED								
ABORTED								
ABORTED				1		1	1	.36
OTHER				2		2	2	.71
INFLIGHT								
CLIMB TO CRUISE		2	?	2		6	6	2.14
NORMAL CRUISE	6	3	10	25		44	44	Ĩ5.7Î
DESCENDING	1					1	1	.36
HCLDING								
HCVERING	1	2	3	16		22	22	7.AF
PCWER-ON DESCENT			5	5		7	7	2.50
AUTOROTATIVE DESCENT				5		5	5	ĩ.79
ACROBATICS								
011777110								

BUZZING

FIRST OPERATIONAL PHASE	44	P' 4	OD,	Of	NE.					
OTERATIONAL THASE	4 P	SE.	4,	4	,		RECORE	วร	ACCIDENTS	PERCENT
UNCONTROLLED DESCENT	S	3						5	5	1.79
EMERGENCY DESCENT	1							1	1	.36
LOW PASS	1	1			5			7	7	2.50
OTHER	4	1	5		6		1	16	16	5.71
EN ROUTE TO TREAT CROP	1				7			8	8	2.86
EN ROUTE TO RELOADING AREA					1			1	1	.36
SURVEY FIELD/AREA	1				1			2	2	•71
STARTING SWATH RUN			3		3			6	6	2.14
SWATH RUN		5	3	1	12		ā	20	20	7.14
FLAREOUT FOR SWATH RUN			1		1			2	5	.71
PULLUP FROM SWATH RUN					4			4	4	1.43
PROCEDURE TURNAROUND		2	1		6			9	9	3.21
CLEANUP SWATH					1			1	1	.36
MANEUVER TO AVOID OBSTRUCTION					1			1	1	.36
RETURN TO STRIP	1							1	1	.36
LANDING										
TRAFFIC PATTERN-CIRCLING			1		1			2	2	•71
FINAL APPROACH	2	2	1		1			6	6	2.14
INITIAL APPROACH										
FINAL APPROACH										
LEVEL OFF/TOUCHDOWN	1	1			S			4	4	1.43
RGLL					1			1	1	.36
ROLL-ON/RUN-ON			1		S			3	3	1.07
POWER-ON LANDING	1		4	1	12		1	17	17	6.07
POWER-OFF AUTOROTATIVE LDG			3	1	15		, 1	18	18	6.43
GC-AROUND		1	2					3	3	1.07
MISSED APPROACH										
OTHER		1	1		1			3	3	1.07
UNKNOWN/NOT REPORTED	1							1	1	.36
RECORDS	28	32	54	16	56		28	30		
ACCIDENTS	28	31	54	16	55				278	
PERCENT	10.0	11.4	19.3	59.	.3					

CAUSE/FACTOR TABLE ROTORCRAFT-1973

INVOLVES 275 TOTAL ACCIDENTS INVOLVES 27 FATAL ACCIDENTS

ACCIDENTS WITH ASSIGNED CAUSES ONLY

	FAT	AL ACCID	ENTS	NONFA	TAL ACCI	DENTS	ALL ACCIDENTS			
BROAC CAUSE/FACTOR	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL *	
PILOT	19 70.37	4 14•81	19 70.37	186 75.00	27 10.89	188 75.8Ĩ	205 74 . 55	31 11•27	20 <u>7</u> 75•27	
PERSONNEL	5 18.52	1 3.70	6 22 . 22	27 10.89	4 1.61	30 12•10	32 11.64	5 1.82	36 13.09	
AIRFRAME	1 3•70	.00	1 3.70	.00	.00	•00	ï •36	•00	1 •36	
LANDING GEAR	.00	.00	.00	.00	.00	•00	.00	.00	_00	
POWERPLANT	2 7.41	.00	2 7.41	59 23 . 79	3 1.21	62 25•00	6Î 22 . 18	3 1.09	.64 23 . 27	
SYSTEMS	.00	1 3.70	1 3.70	.00	1 •40	1 •40	.00	2 •73	,73	
INSTRUMENTS/EQUIPMENT AND ACCESSORIES	.00	•00	.00	2 •81	1 •40	3 1.21	² •73	ī •36	3 1.09	
ROTORCRAFT	6 22•22	1 3.70	6 22 . 22	25 _ 10.08	6 2.42	30 12.10	3 <u>1</u> 11.27	7 2.55	· 36 13.09	
AIRPORTS/AIRWAYS/FACILITIES	.00	1 3.70	1 3.70	2 •81	4 1.61	6 2•42	2 •73	5 1.82	2.55	
WEATHER	.00	1 3.70	1 3.70	9 3.63	31 12.50	40 16.13	9 3 . 27	32 11.64	4Î 14.91	
TERRAIN	.00	11 40.74	11 40.74	35 14•11	66 26.61	100 40.32	35 12.73	77 28.00	111 40.36	
MISCELLANEOUS	3 11•11		3 11.11	21 8.47	2 •81	22 8.87	24 8.73	2 •73	25 9.09	
UNDETERMINED	3 11•11	.00	3 11.11	3 1.21	.00	3 1.21	6 2.18	.00	2.18	

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

ROTORCRAFT-1973

INVOLVES 275 TOTAL ACCIDENTS 27 FATAL ACCIDENTS

ACCIDENTS WITH ASSIGNED CAUSES ONLY

	FATAL ACCIDENTS				TAL ACCI		ALL ACCIDENTS		
DETAILED CAUSE/FACTOR	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
** bIF01 **									
PILOT IN COMMAND ATTEMPTED OPERATION W/KNOWN DEFICIENCIES IN EQUIPMENT ATTEMPTED OPERATION BEYOND EXPERIENCE/ABILITY LEVEL CONTINUED VFR FLIGHT INTO ADVERSE WEATHER CONDITIONS DELAYED IN INITIATING GO-AROUND DIVERTED ATTEMTION FROM OPERATION OF AIRCRAFT FAILED TO SEE AND AVOID OTHER AIRCRAFT FAILED TO SEE AND AVOID OBJECTS OR OBSTRUCTIONS FAILED TO OBTAIN/MAINTAIN FLYING SPEED MISJUDGED, SPEED, ALITITUDE OR CLEARANCE FAILED TO MAINTAIN ADEQUATE ROTOR RPM FAILED TO USE OR INCORRECTLY USED MISC EQUIPMENT FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES ETC IMPROPER OPERATION OF POWERPLANT + POWERPLANT CONTROLS IMPROPER OPERATION OF FLIGHT CONTROLS IMPROPER OPERATION OF FLIGHT CONTROLS IMPROPER LEVEL OFF IMPROPER LEVEL OFF IMPROPER LEVEL OFF IMPROPER COMPENSATION FOR WIND CONDITIONS INADEQUATE SUPFRYISION OF FLIGHT LACK OF FAMILIARITY WITH AIRCRAFT MISMANAGEMENT OF FUEL EXERCISED POOR JUDGMENT OPERATED CAPELESSLY SELECTED UNSUITABLE TERRAIN SPONTANEOUS-IMPROPER ACTION MISJUDGED DISTANCE, SPEED, AND ALTITUDE MISJUDGED SPEED AND ALTITUDE MISJUDGED SPEED AND ALTITUDE MISJUDGED SPEED AND ALTITUDE MISJUDGED SPEED AND ALTITUDE MISJUDGED ALTITUDE MISJUDGED ALTITUDE MISJUDGED SPEED AND CLEARANCE MISJUDGED CLEAPANCE MISJUDGED CLEAPANCE MISJUDGED ALTITUDE MISJUDGED SPEED AND CLEARANCE MISJUDGED CLEAPANCE MISJUDGERSTANCING OF ORDERS OR INSTRUCTIONS PHYSICAL IMPAIRMENT	1 1 1 1 3 1 6 2 7 1 1 1 1	1 2	1 1 1 1 3 1 6 2 7 1 1 1 1 3	29 21 8 20 4 13 39 4 53 53 7 7 4 22 12 17 7 11 32 11 33 4 11 33 11 11 11 11 11 11 11 11 11 11 11	3 1 1 3 2 2 1 4 4 2 1 1	2 12 2 1 9 20 4 1 39 1 7 5 35 9 5 26 11 12 6 1 1 1 9 1 1 1 1 9 1 1 1 1 1 1 1 1 1 1	20 ? 1 9 1 3 4 4 2 5 6 5 6 5 6 5 8 5 2 2 1 8 8 1 2 5 1 7 1 5 3 1 1 3 4 5 1 2 5 1 7 1 5 3 1 1 3 4 5 1 2 5 1 7 1 5 3 1 1 3 4 5 1 2 5 1 7 1 5 3 1 1 3 4 5 1 2 5 1 7 1 5 3 1 1 3 4 5 1 2 5 1 7 1 5 3 1 1 3 4 5 1 2 5 1 7 1 5 3 1 1 3 4 5 1 2 5 1 7 1 5 3 1 1 3 4 5 1 2 5 1 7 1 5 3 1 1 3 4 5 1 2 5 1 7 1 5 3 1 1 3 4 5 1 2 5 1 7 1 5 3 1 1 3 4 5 1 1	3 i i i 3 2 2 1 5 4 4 2 i	23 21 0 1 3 4 2 5 1 9 5 2 5 1 0 6 7 7 2 2 2 9 1 9 1 1 5 3 1 1 3 6 5 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
SPATIAL DISORIENTATION FAILED TO MAINTAIN DIRECTIONAL CONTROL DIRECT ENTRIES	1		2	3 5 2		3 5 2	7 2		4 7 2
SUBTOTAL	31	4	35	283	27	310	314	31	345
COPILOT SELECTED UNSUITABLE TERRAIN				1		1	ĩ		ĩ
SURTOTAL				1		1	ī		ì
DUAL STUDENT FAILED TO MAINTAIN ADEQUATE ROTOR RPM IMPROPER OPERATION OF POWERPLANT + POWERPLANT CONTROLS IMPROPER OPERATION OF FLIGHT CONTROLS LACK OF FAMILIARITY WITH AIRCRAFT MISJUDGED SPEED AND ALTITUDE FAILED TO MAINTAIN DIRECTIONAL CONTROL				5 3 7 1	1	6 3 7 2 1 1	5 3 7 1	1	6 3 7 2 1
SURTOTAL				17	3	20	17	3	20
CPFCK PILOT IMPROPER LEVEL OFF MISJUDGED ALTITUDE				1		1	Ĭ 1		1

CHECK PILOT (CONTINUED)	FATAL ACCIDENTS			NONFATAL, ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
SUBTOTAL				2		2	5		2
** PERSONNEL **									
FLIGHT INSTRUCTOR INADEQUATE SUPERVISION OF FLIGHT INADEQUATE TRAINING OF STUDENT MAINTENANCE, SERVICING, INSPECTION IMPROPER MAINTENANCE (MAINTENANCE PERSONNEL) IMPROPERLY SERVICED, AIRCRAFT (OMNER-PILOT) INADEQUATE INSPECTION OF AIRCRAFT (MAINTENANCE PERSONNEL) INADEQUATE MAINTENANCE AND INSPECTION OTHER OPERATIONAL SUPERVISORY PERSONNEL INADEQUATE FLIGHT TRAINING-PROCEDURES WEATHER PERSONNEL TRAFFIC CONTROL PERSONNEL AIRMAYS FACILITIES PERSONNEL	1 2	1	1 2	5 1 1 12 1	1 1	1 1 5 1 2 13	5 1 1 14 1	î î î	1 1 1 1 1
PRODUCTION-DESIGN-PERSONNEL POOR/INADEGUATE DESIGN MISCELLANEOUS-PERSONNEL				1		1	Ĩ		î
PILOT OF OTHER AIRCRAFT GROUND CREWMAN PASSENGER OTHER	1		. 1	2 2 1 1		2 2 1 1	3 2 2 1		3 2 2 1
THIRD PILOT FLIGHT ENGINEER DISPATCHING				•		•			
SURTOTAL	5	1	6	27	4	31	32	5	37
** AIRFRAME **									
WINGS FUSELAGE OTHER LANDING GEAP FLIGHT CONTROL SURFACES	1		1				ĩ		ï
SUBTOTAL	1		1				ĩ		ĩ
** PCWERPLANT **									
MASTER AND CONNECTING RODS PISTOR. PISTON RINGS VALVE ASSEMBLIFS MOUNT AND VIRRATION ISOLATORS OTHER IGNITION SYSTEM MAGRETOES SPARK PLUG FUEL SYSTEM LINES AND FITTINGS CARRURETOR PUMPS RAM AIR ASSEMBLY LUBRICATING SYSTEM VALVES COOLING SYSTEM VALVES COOLING SYSTEM FITTINGS CARRURETOR PROPELLER AND ACCESSORIES EXHAUST SYSTEM EXTERNAL SUPERCHARGER ENGINE ACCESSORIES ENGINE ACCESSORIES ENGINE ACCESSORIES ENGINE CONTROLS—COCKPIT THROTTLE—POWER LEVER ASSEMBLIES MIXTURE CONTROL ASSEMBLIES	1		1	5 2 1 5 3 1 2 1 5 1 1 1		5 2 1 5 3 1 2 1 5 1 1 1	5 2 1 1 5 3 1 1 1 3 3 3 1	ì	5 2 1 5 1 1 1 1 3 4 1
POWERPLANT-INSTRUMENTS FUEL QUANTITY GAUGE MISCELLANEOUS				1	2	2 .	,	2	?

	O-OSEZI ACI	HOLL								
POWERPLANT (CONTINUED)	FAI	AL ACCIO	ENTS	NONFA	TAL ACCI	DENTS	ALL ACCIDENTS.			
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	
POWERPLANT FAILURE FOR UNDETERMINED PEASONS REDUCTION GEAR ASSEMBLY	1		1	22		22	23		23	
COMPRESSOR ASSEMBLY BLADE, COMPRESSOR ROTOR FAN OTHER COMBUSTION ASSEMBLY TURBINE ASSEMBLY ACCESSORY DRIVE ASSEMBLY				1 1 1		1 1 1	1 1 1		1 1 1	
LURRICATING SYSTEM FUEL SYSTEM OTHER SAFETY SYSTEM IGNITION SYSTEM TORQUEMETER AIR PLEED EXHAUST SYSTEM THRUST REVERSER PROPELLER SYSTEM				1		. 1	í		1	
CONSTANT SPEED DRIVE POWER LEVER PROPELLER LEVER REVERSE THRUST LEVER ENGINE INDICATING EQUIPMENT ENGINE INSTALLATION										
SUBTOTAL	2		2	61	3	64	63	3	66	
## SYSTFMS ##										
ELECTRICAL SYSTEM HYDRAULIC SYSTEM FILGHT CONTROL SYSTEMS FLIGHT CONTROL ROOST SYSTEM (HYDRAULIC) ANTI-ICING, DE-ICING SYSTEMS AIR CONDITION, HEATING AND PRESSURIZATION AUTO PILOT FIRE WARNING SYSTEM FIPE EXTINGUISHER SYSTEM					ì	1		ì	į	
OXYGEN SYSTEM OTHER SYSTEMS										
OTPER SUBTOTAL		1	1		1	1		1	ا خ	
** INSTRUMENTS/EQUIPMENT AND ACCESSORIES **		1			1	•			,	
FLIGHT AND NAVIGATION INSTRUMENTS COMMUNICATIONS AND NAVIGATION EQUIPMENT										
MISCELLANEOUS EQUIPMENT SPRAY, DUSTING EQUIPMENT OTHER				1	1	2 1	<u>i</u> 1	1	7	
SUBTOTAL				2	1	3	ż	ĩ	3	
** ROTORCRAFT **										
ROTOR ASSEMBLIES MAIN ROTOR BLADES TAIL ROTOR BLADES MAIN ROTOR HEAD ASSEMBLIES OTHER		1	1	5 2 1		5 2 1	5 2 1	Ĩ	1 5 2	
TRANSMISSION ROTOR DRIVE SYSTEM ENGINE DRIVE SHAFT MAIN ROTOR DRIVE SHAFT FREE WHEEL UNIT	1		1	1		1	1 1		: <u>1</u> 1	
MAIN ROTOR GEAR BOX MAIN ROTOR PULLEYS, RELTS TAIL ROTOR DRIVE SHAFT ASSEMBLY	2		2	1 1 3	1	1 2 3 2	1 1 5	ī	1 2 5 2	
TAIL ROTOR GEAR BOX CLUTCH ASSEMBLY OTHER	1		1	2 1 4	1	1 5	į 5	i	1 6	

ROTORCRAFT (CONTINUED)	FAT	TAL ACCIO	ENTS		TAL ACCI		ALL ACCIDENTS			
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	IATOT	
FLIGHT CONTROL SYSTEMS CYCLIC PITCH CONTROL SYSTEM TAIL ROTOR PITCH CONTROL SYSTEM	2		2	2	2 1	4 1	4	1	6	
OTHER MISCELLANEOUS UNITS AND ASSEMBLIES EMERGENCY FLOTATION GEAR TAIL BOOMS/PYLONS/CONES OTHER	1	1	1 1	1	1	1 1 1	1 1	i 1	1 2 2	
SUBTOTAL	7	2	9	26	6	32	33	А	4Î	
** AIRPORTS/AIRWAYS/FACILITIES **	·	-	,	20	·	32				
AIRPORT FACILITIES										
OTHER AIRPORT CONDITIONS UNMARKED OBSTRUCTIONS HIDDEN HAZARD		1	1	2	1	2 1 1	ž	i	. <u>1</u>	
OTHER ATRWAYS FACILITIES				_	3	3		3	3	
SUBTOTAL		1	1	3	4	7	3,	5	А	
** WEATHER **										
LOW CEILING PAIN FOG ICING CONDITIONS-INCLUDES SLEET, FREEZING RAIN, ETC CONDITIONS CONDUCTVE TO CARB/INDUCTION SYSTEM ICING UNFAVORABLE WIND CONDITIONS SUDDEN WINDSHIFT DOWNCRAFTS, UPDRAFTS HIGH TEMPERATURE				5 1	2 1 3 1 1 7 2 3	2 1 3 1 1 12 3 3 2	<u>5</u> 1	2 1 1 7 2 3 2	12.3	
ORSTRUCTIONS TO VISION HIGH DENSITY ALTITUDE		1	1	1	1 14	2 17	3	2 14	17	
SUBTOTAL		1	1	10	37	47	10	38	48	
** TERRAIN **										
WET. SOFT GROUND HIGH VEGETATION HIDDEN OBSTRUCTIONS ROUGH/UNEVEN ROUGH WATER HIGH ORSTRUCTIONS SANDY OTHER		10	10 1	3 2 13 1 11	5 1 1 1 1 4 1 7	8 3 1 24 1 52 1	3 2 13 11 11	5 1 11 51 1 8	8 3 1 24 1 62 1	
SUBTOTAL		11	11	35	67	102	35	78	113	
** MISCELLANEOUS **										
BIRD COLLISION VORTEX TURBULENCE STATIC DISCHARGE EVASIVE MANEUVFR TO AVOID COLLISION UNQUALIFIED PERSON OPERATED AIRCRAFT FOREIGN OBJECT DAMAGE FOREIGN MATERIAL AFFECTING NORMAL OPERATIONS UNDETERMINED DIRECT ENTRIES	2 1 3		2 1 3	1 1 7 2 8 3 3	1 1	1 1 7 1 2 8 3 3	1 1 9 2 9 6	ï i	1 9 6 3	
SUBTOTAL	6		6	25	Š	27	31	2	33	
GRAND TOTAL	52	21	73	492	155	647	544	176	7 20	
** MISCELLANEOUS ACTS. CONDITIONS **										

MISCELLANEOUS ACTS, CONDITIONS (CONTINUED)	FATAL ACCIDENTS			NONF A	TAL ACCI	DENTS	ALL ACCIDENTS			
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	
ANTI-ICING/DEICING EQUIP-IMPROPER OPER. OF/FAILED TO USF DISREGARD OF GOOD OPERATING PRACTICE				1 1		1	11		i	
IMPROPER EMERGENCY PROCEDURES NOT ALLIGNED WITH RUNWAY/INTENDED LANDING AREA				1	1 1	2 1	ĩ	i 1	2	
UNWARRANTED LOW FLYING .	1		1	,	•		ĩ	•	į	
POORLY PLANNED APPROACH MISCALCULATED FUEL CONSUMPTION				1 3	1	1	1 3	i	4	
JETTISONED LOAD STOLEN OR UNAUTHORIZED USE OF AIRCRAFT					3 1	3 1		3 1	3 1	
IMPROPERLY SECURED FATIGUE FRACTURE	4		4	3 9		3 9	3 13		3 13	
HYDRAULIC FAILURE WINDSHIELD, DIRTY, FOGGY, ETC-RESTRICTED VISION				1	1	1 2	î	î	ì	
SEPARATION IN FLIGHT		4	4		3	3		7	7	
FIRE IN ENGINE LATERAL IMBALANCE				1 2	1	2	<u>1</u>	5 J	? 4	
CORRODED/CORROSION CONGESTED TRAFFIC-PATTERN	1	1	2	1		1	. 1	1	2	
PILOT FATIGUE FUEL EXHAUSTION				12	⁷ 2	2 12	12	2	. ? 12	
CARBON MONOXIDE POISONING	1		1				ī		ì	
ICE-CARBURETOR IMPROPERLY LOADED AIRCRAFT-WEIGHT-AND/OR CG				1	3	1 6	1 3	3	6	
INTERFERENCE WITH FLIGHT CONTROLS SUNGLARE				2	1	2 1	?	1	? 1	
LACK OF LUBRICATION-SPECIFIC PART, NOT SYSTEM OIL EXHAUSTION-ENGINE LUBRICATION SYSTEM				4		4 1	4 1		4	
SIMULATED CONDITIONS WATER IN FUEL				5	11	16	<u>5</u> 1	11	16	
AIRCRAFT CAME TO REST IN WATER		2	2		13	13	_	15	íş	
FROZEN, MOISTURE MISSING	1		1	1		1	1 1	_	1	
OVERLOAD FAILURE MATERIAL FAILURE	1	1	2 1	2 21	2	2 23	3 22	1 2	4 24	
FUEL STARVATION IMPROPER CLEARANCE-TOLERANCE				9		9	9		9	
ACTION. LACK OF				î		i	î	ĩ	1	
POOR WELD PREVIOUS DAMAGE		1	1 1	2	2	4	2	3	5	
LEAK/LEAKAGE DOWNWIND				2	6	2 6	2	6	2 6	
CARBON DEPOSITS OVER TORQUED				1		1 1	<u>1</u>		1	
GROUND RESONANCE BINDING				2		2	5 5		2	
CHAFFED	,		,	2		2	2		2 3	
DISCONNECTED ELONGATED	1		1	2		1	<u>ī</u>		į	
EXCESSIVE-WEAR/PLAY ERRATIC				1	1	1		1	j	
GROUNDED IMPROPERLY INSTALLED				1		1 2	1		1 2	
JAMMED OBSTRUCTED				1		1	1		į	
OVERHEATED				į		į	į		į	
PRESSURE TOO LOW'SHEARED				5		1	Š		Ş	
STUCK EXCESSIVE TEMPERATURE				1 1		1	<u>1</u> 1		1	
VIBRATION, EXCESSIVE CONGESTED RAMP/TAXIWAY				1 2	1	2	1 2	$\frac{1}{1}$	3	
LOAD NOT JETTISONED				3	ė	11	3	Â	. <u>3</u>	

DIRECT ENTRY CAUSES

PILOT-SETTLED WITH PWR INTO TALL CORN.
ROTORCRAFT - MISC EXTERNAL CARGO SLING.
POWER SETTLING.
PILOT IN COMMAND - ALLOWED CABLE TO STRIKE T/R
PILOT-EXCEEDED PERFORMANCE CAPABILITY OF ACFT.

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

KIND OF FLYING BY INJURY INDEX ROTORCRAFT

National		. 6	٠ ,	مي رو	P 46				
CHAL		4PT.	Stop.	WIL	40,		RECORDS	ACCIDENTS	PERCENT
Maria									
SOLO	<u>INSTRUCTIONAL</u>								
TRAINING	DUAL			1	20		21	21	7.50
TRAINING 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	SOLO				1		1	1	.36
PLEASURE	CHECK				2		2	2	.71
PLEASURE 5 4 6 24 39 39 13.93 PRACTICE 7 1 6 7 7 2.50 PUSINESS 1 1 1 3 10 15 15 5.16 CORPORATE/EXFCUTIVE 1 1 2 4 4 1.42 CORPORATE/EXFCUTIVE 1 1 2 1 2 1 2 1 1 2 1 1 1 1 1 1 1 1 1	TRAINING		1	1	4		6	6	2.14
PRACTICE PUSINESS 1 1 3 3 10 15 5.76 CORPORATE/EXECUTIVE 1 1 3 10 AERIAL SUPVEY 1 1 3 10 COMPANY FLIGHT OTHER OTHER OTHER OTHER OTHER ARIAL APPLICATION 1 2 1 2 1 10 CROP CONTROL RELATED FLIGHT 1 2 1 2 1 10 CROP CONTROL RELATED FLIGHT 1 2 1 1 2 1 10 THER CONTROL RELATED FLIGHT 1 2 1 2 1 10 THER CONTROL RELATED FLIGHT 1 2 1 2 1 10 THER CONTROL RELATED FLIGHT 1 2 1 2 1 10 THER CONTROL PATROL ARIAL APPRING/PHOTOGRAPHY 2 1 1 2 10 ARIAL APPRING/PHOTOGRAPHY 3 2 1 1 2 10 ARIAL APPRING/PHOTOGRAPHY 3 2 1 1 2 10 ARIAL ADVERTISING FUSIONA ARIAL AND PIPELINE PATROL ARIAL ADVERTISING ARIAL ADVERTISING SUPURAL AND PIPELINE PATROL ARIAL ADVERTISING ARIAL ADVERTISING	NONCOMMERCIAL								
PUSINESS	PLEASURE	5	4	6	24		39	39	13.93
COMPORATE/EXECUTIVE 1 1 2 1 2 1 1 2 1 1 2 1 1 2 1 1 1 1 1	PRACTICE			1	6		7	7	2.50
ARRIAL SURVEY 1	BUSINESS	1	1	3	10		15	15	5.36
СОМРАМУ FLIGHT ОТНЕЯ 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	CORPORATE/EXECUTIVE	1		1	2		4	4	1.43
COMMERCIAL	AERIAL SURVEY	1					1	1	.36
COMMERCIAL COM	COMPANY FLIGHT								
AERIAL APPLICATION	OTHER			1			1	1	.36
CROP CONTROL RELATED FLIGHT	COMMERCIAL								
FIRE CONTROL 1 2 1 4 FIRE CONTROL RELATED FLIGHT 1 2 1 4 AERIAL MAPPING/PHOTOGRAPHY 2 1 3 3 AERIAL ADVERTISING POWER AND PIPELINE PATROL AIR TAXI-PASSENGER OPERATIONS 4 2 12 13 3 31 30 11.07 AIR TAXI-CARGO OPERATIONS 2 1 1 1 4 CONSTRUCTION WORK 2 1 1 1 4 SCHEDULED PASSENGER SERVICE SCHEDULED CARGO SERVICE INTRA-STATE CHAPTER PASSG. INTRA-STATE CHAPTER PASSENGER MILITARY CONTRACT-PASSENGER MILITARY CONTRACT-CARGO CHAPTER CARGO-OPMESTIC 1 3 3 3 1.07 AIR TAXI-CARGO OPERATIONS 2 1 1 1 4 AIR TAXI-CARGO OPERATIONS 3 3 1.07 AIR TAXI-CARGO OPERATIONS 4 2 12 13 14 AIR TAXI-CARGO OPERATIONS 5 2 2 2 7.71 AIR TAXI-CARGO OPERATIONS 5 3 3 1.07 AIR TAXI-CARGO OPERATIONS 6 6 6 2.14 AIR TAXI-PASSENGER OPERATIONS 7 1 1 1 1 3.36	AERIAL APPLICATION		8	8	28		44	44	15.71
FIRE CONTROL 1 2 1 4 FIRE CONTROL RFLATED FLIGHT 1 2 1 4 AERIAL MAPPING/PHOTOGRAPHY 2 1 3 3 AERIAL ADVERTISING POWER AND PIPELINE PATROL AIR TAXI-PASSENGER OPERATIONS 4 2 12 13 AIR TAXI-CARGO OPERATIONS 5 2 2 2 71 CONSTRUCTION WORK 5 1 1 4 CONSTRUCTION WORK 5 2 1 1 4 CONSTRUCTION WORK 6 6 6 2.14 AIR TAXI-CARGO OPERATIONS 7 2 1 1 2 AIR TAXI-CARGO OPERATIONS 8 8 2.AG SCHEDULED PASSENGER SERVICE SCHEDULED CARGO SERVICE INTRA-STATE CHARTER PASSG. INTRA-STATE CHARTER CARGO. MILITARY CONTRACT-PASSENGER MILITARY CONTRACT-CARGO CHARTER CARGO-DOMESTIC 1 1 3 3.36	CROP CONTROL RELATED FLIGHT	4		2	14		20	20	7.14
AERIAL MAPPING/PHOTOGRAPHY 2 1 3 6 6 2.14 AERIAL ADVERTISING POWER AND PIPELINE PATROL 1 2 1 2 3 3 1.07 FISH SPOTTING AIR TAXI-PASSENGER OPERATIONS 4 2 12 13 3 31 30 11.07 AIR TAXI-CARGO OPERATIONS 2 1 1 1 4 3 31 30 2.86 CONSTRUCTION WORK 2 1 1 1 4 4 8 8 8 2.86 SCHEDULED PASSENGER SERVICE SCHEDULED CARGO SERVICE INTRA-STATE CHARTER PASSG. INTRA-STATE CHARTER CARGO. MILITARY CONTRACT-PASSENGER MILITARY CONTRACT-CARGO CHARTER CARGO-DOMESTIC 1 1 1 3.36	FIRE CONTROL	1	2		1	1	4	4	1.43
AERIAL ADVERTISING POWER AND PIPELINE PATROL 1 2 3 3 1.07 FISH SPOTTING AIR TAXI-PASSENGER OPERATIONS 4 2 12 13 AIR TAXI-CARGO OPERATIONS 2 1 1 1 4 CONSTRUCTION WORK 2 1 1 1 4 SCHEDULED PASSENGER SERVICE SCHEDULED CARGO SERVICE INTRA-STATE CHARTER PASSG. INTRA-STATE CHARTER CARGO. MILITARY CONTRACT-PASSENGER MILITARY CONTRACT-CARGO CHARTER CARGO-DOMESTIC 1 3 3 1.07 1 2 2 2 7.71 4 4 2 12 13 4 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	FIRE CONTROL RELATED FLIGHT	1	2	1	4		8	8	2.86
POWER AND PIPELINE PATROL 1 2 1 2 1 1 2 3 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 1	AERIAL MAPPING/PHOTOGRAPHY	2		1	3		6	6	2.14
FISH SPOTTING AIR TAXI-PASSENGER OPERATIONS 4 2 12 13 31 30 11.07 AIR TAXI-CARGO OPERATIONS 2 2 2 .71 CONSTRUCTION WORK 2 1 1 1 4 8 8 8 2.86 SCHEDULED PASSENGER SERVICE SCHEDULED CARGO SERVICE INTRA-STATE CHARTER PASSG. INTRA-STATE CHARTER CARGO. MILITARY CONTRACT-PASSENGER MILITARY CONTRACT-CARGO CHARTER CARGO-DOMESTIC 1 1 1 3.36	AERIAL ADVERTISING								
AIR TAXI-PASSENGER OPERATIONS 4 2 12 13 AIR TAXI-CARGO OPERATIONS 2 2 2 .71 CONSTRUCTION WORK 2 1 1 1 4 SCHEDULED PASSENGER SERVICE SCHEDULED CARGO SERVICE INTRA-STATE CHARTER PASSG. INTRA-STATE CHARTER CARGO. MILITARY CONTRACT-PASSENGER MILITARY CONTRACT-CARGO CHARTER CARGO-DOMESTIC 1 1 1 3.36	POWER AND PIPELINE PATROL			1	2		3	3	1.07
AIR TAXI-CARGO OPERATIONS 2	FISH SPOTTING								
CONSTRUCTION WORK 2 1 1 4 4 8 8 2.86 SCHEDULED PASSENGER SERVICE SCHEDULED CARGO SERVICE INTRA-STATE CHARTER PASSG. INTRA-STATE CHARTER CARGO. MILITARY CONTRACT-PASSENGER MILITARY CONTRACT-CARGO CHARTER CARGO-DOMESTIC 1 1 1 3.36	AIR TAXI-PASSENGER OPERATIONS	4	2	12	13		31	30	11.07
SCHEDULED PASSENGER SERVICE SCHEDULED CARGO SERVICE INTRA-STATE CHARTER PASSG. INTRA-STATE CHARTER CARGO. MILITARY CONTRACT-PASSENGER MILITARY CONTRACT-CARGO CHARTER CARGO-DOMESTIC 1 1 .36	AIR TAXI-CARGO OPERATIONS		2				2	2	.71
SCHEDULED CARGO SERVICE INTRA-STATE CHARTER PASSG. INTRA-STATE CHARTER CARGO. MILITARY CONTRACT-PASSENGER MILITARY CONTRACT-CARGO CHARTER CARGO-DOMESTIC 1 1 3.36	CONSTRUCTION WORK	2	1	1	4		8	8	2.86
INTRA-STATE CHARTER PASSG. INTRA-STATE CHARTER CARGO. MILITARY CONTRACT-PASSENGER MILITARY CONTRACT-CARGO CHARTER CARGO-DOMESTIC 1 1 3.36	SCHEDULED PASSENGER SERVICE								
INTRA-STATE CHARTER CARGO. MILITARY CONTRACT-PASSENGER MILITARY CONTRACT-CARGO CHARTER CARGO-DOMESTIC 1 1 36	SCHEDULED CARGO SERVICE								
MILITARY CONTRACT-PASSENGER MILITARY CONTRACT-CARGO CHARTER CARGO-DOMESTIC 1 1 .36	INTRA-STATE CHARTER PASSG.								
MILITARY CONTRACT-CARGO CHARTER CARGO-DOMESTIC 1 1 36	INTRA-STATE CHARTER CARGO.								
CHARTER CARGO-DOMESTIC 1 1 36	MILITARY CONTRACT-PASSENGER								
	MILITARY CONTRACT-CARGO								
	CHARTER CARGO-DOMESTIC				1		1	1	.36
	CHARTER PASSG-DOMESTIC		1	3			4	4	_
CHARTER-CARGO-INTERNATIONAL 1 1 .36	CHARTER-CARGO-INTERNATIONAL	1					1	1	.36
CHARTER-PASSG-INTERNATIONAL 1 1 36				1				1	
OTHER 1 1 3 5 5 1.79	OTHER		1	1	3		5	5	

CIND OF FLYING	44)	Sty	NIN	40	RECORDS	ACCIDENTS	PERCENT
UNKNOWN/NOT REPORTED							
MISCELLANEOUS							
EXPERIMENTATION	, 1				1	1	.36
TEST	1		1	5	7	7	2.50
DEMONSTRATION				2	2	,2	.71
FERRY	1		2	7	10	10	3.57
SEARCH AND RESCUE		1	3	1	5	5	1.79
AIR SHOW/AIR RACING							
PARACHUTE JUMP							
PARACHUTE JUMP-AIR SHOW							
TOWING GLIDERS							
SEEDING CLOUDS					• •		
PUNTING			1		1	1	.36
PCLICE PATROL	5	2	2	4	10	10	3.57
HIGHWAY TRAFFIC ADVISORY							
ALL OTHER PUBLIC FLYING		4		3	7	7	2.50
OTHER				1	1	1	•36
UNKNOWN/NOT REPORTED				1	1	1	.36
ECGRDS	28	32	54	166	280		
CCIDENTS	28	31	54	165		278	
ERCENT	10.0	11.4	19.3	59.3			

INJURIES.ACCIDENTS ROTORCRAFT

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
	PILOT	21	28	41	190			280
	CCPILOT		3		5			8
	DUAL STUDENT			1	19			20
	CHECK PILOT		•		2			2
	FLIGHT ENGINEER							
	NAVIGATOR							
	CABIN ATTENDANT			1				1
	EXTRA CREW	2	2	4	10			18
	PASSENGERS	17	18	49	109			193
	TOTAL	40	51	96	335	,	ABOARD	522
	TOTAL	40	21	40	22.2		ADUARU	322
- 145 -	* CTHER AIRCRAFT CTHER GROUND	3.			1			1 4
	GRAND TOTAL	43	51	96	337			527

INVOLVES 278 TOTAL ACCIDENTS INVOLVES 28 FATAL ACCIDENTS

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

GENERAL AVIATION ACCIDENTS

GLIDER AIRCRAFT

TYPE OF ACCIDENT BY AIRCRAFT DAMAGE GLIDER

		Ś	TIAL			
	. P.	o ^{tv} s	AM . OR . NE			
	Offs.	SUB	ANIAC HONE	RECORDS	ACCIDENTS	PERCENT
GROUND-WATER LOOP-SWERVE		7		7	7	10.94
DRAGGED WINGTIP POD OR FLOAT						
WHEFLS-UP LANDING						
WHEELS-DOWN LANDING IN WATER						
GEAR COLLAPSED						
GEAR RETRACTED						
HARD LANDING		3		3	3	4.69
NOSE OVER/DOWN		5		2	2	3.13
RCLL OVER						
CVERSHOOT		2		2	2	3.13
UNDERSHOOT		9	1	10	10	15.63
COLLISION BETWEEN AIRCRAFT						
ECTH IN FLIGHT	1	1		2	1	3.13
ONE AIRBORNE			1	1	1	1.56
BOTH ON GROUND						
COLLISION WITH GROUND/WATER						
CONTROLLED	1	4		5	5	7.A1
UNCONTROLLED	1			1	1	1.56
COLLIDED WITH						
WIRFS/POLES		1		1	1	1.56
TREES	1	2		3	3	4.69
RESIDENCE/S						
BUILDING/S						
FENCE: FENCEPOSTS		S		2	2	3.13
ELECTRONIC TOWERS					•	
RUNWAY OR APPROACH LIGHTS						
AIRPORT HAZARD					1	
ANIMALS						
CROP		1		1	1	1.56
FLAGMAN LOADER						
DITCHES		1		1	1	1.56
SNOWBANK			1			
PARKED AIRCRAFT		1		1	1	1.56
AUTOMOBILE						
DIRT BANK		1		1	1	1.56
OBJECT	1	3	1	5	5	7.81

FIRST TYPE OF ACCIDENT	DESTOCATO STORMON ROPE	RECORDS	ACCIDENTS PERCENT
BIRD STRIKE	2 3	5	5 7.81
STALL	2 3	2	
SPIN			
SPIRAL	1 1	. 2	2 3.13
MUSH	2	2	2 3.13
FIRE OR EXPLOSION			
IN FLIGHT			
ON GROUND			
AIRFRAME FAILURE			
IN FLIGHT	2 1	3	3 4.69
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	1	1	1 1.56
HAIL DAMAGE TO AIRCRAFT			
LIGHTNING STRIKE			
EVASIVE MANEUVER			
UNCONTROLLED ALT DEVIATION			
DITCHING			
MISSING ACFT NOT RECOVERED			
	· · · · · · · · · · · · · · · · · · ·		
MISCELLANEOUS/OTHER	1	1	1 1.56
UNDETERMINED			
RECORDS	12 48 3 1	64	
ACCIDENTS	12 48 3 1		62
PERCENT	18.8 75.0 4.7 1.6		

PHASE OF OPERATION BY INJURY INDEX

REFERENCES WIND TO HE

RECORDS ACCIDENTS PERCENT

STATIC									
STARTING ENGINE/S									
IDLING ENGINF/S									
ENGINE RUNUP									
ICLING ROTORS									
PARKED-ENGINES NOT OPERATING									
OTHER			1				1	1	1.56
IXAT									
TO TAKEOFF								•	
FROM LANDING									
CTHER									
GROUND TAXI TO TAKEOFF									
GROUND TAXI FROM LANDING									
GROUND TAXI. OTHER									
AERIAL TAXI TO TAKEOFF									
AERIAL TAXI TO/FROM LANDING									
AERIAL TAXI: OTHER									
TAKFOFF									
RUN				4			4	4	6.25
INITIAL CLIMR	1	1	1	1			4	4	6.25
VERTICAL									
RUNNING									
ABORTED .									
ABORTED									
ABORTED									
OTHER									
INFLIGHT									
CLIMB TO CRUISE				5			2	1	3.13
NORMAL CRUISE	1	1					2	2	3.13
DESCENDING									
HCLDING									
HCVFRING									
POWER-ON DESCENT									
AUTOROTATIVE DESCENT									
ACROBATICS									
BUZZING									

FIRST OPERATIONAL PHASE	, A ¹	L EBI	OUS NA	40HE				
UN CONTROLLED DECCENT		7	•	`			ACCIDENTS .	1.56
UNCONTROLLED DESCENT	1					1	1.	1.56
EMERGENCY DESCENT						_		
LOW PASS				1		1	1	1.56
OTHER	2			1		3	3	4.69
EN ROUTE TO TREAT CROP								
EN ROUTE TO PELOADING AREA								
SURVEY FIELD/AREA								
STARTING SWATH RUN								
SWATH RUN								
FLAREOUT FCP SWATH RUN								
PULLUP FROM SWATH RUN								
PROCEDURE TURNAROUND								
CLEANUP SWATH								
MANEUVER TO AVOID OBSTRUCTION								
RETURN TO STRIP								
LANDING								
TRAFFIC PATTERN-CIRCLING		3		1		4	4	6.25
FINAL APPROACH	1	4	3	10		18	18	28.13
INITIAL APPROACH								
FINAL APPROACH								
LEVEL OFF/TOUCHDOWN		3	1	9		13	13	20.31
RCLL		1	5	8		11	10	17.19
RCLL-ON/RUN-ON								
PCWER-ON LANDING								
PCWER-OFF AUTOPOTATIVE LDG								
GC-AROUND								
MISSED APPROACH								
OTHER .								
UNKNOWN/NOT REPORTED								
RECCRDS	6	13	Я	37		64		
ACCIDENTS	6	13	7	36			62	
PERCENT	9.4 2	20.3	12.5	57.8				

GLIDERS-1973

INVOLVES 62 TOTAL ACCIDENTS 6 FATAL ACCIDENTS

ACCIDENTS WITH ASSIGNED CAUSES DNLY

	FAT	AL ACCID	ENTS	NONFA	TAL ACCI	DENTS	ALL ACCIDENTS		
HROAD CAUSE/FACTOR	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL *
PILOT	4 66 . 67	2 33.33	4 66.67	52 92.86	10 17.86	52 92.86	56 90.32	12 19.35	,56 90.32
PERSONNEL	.00	.00	.00	6 10.71	4 7.14	9 16.07	6 9.68	4 6.45	9 14.52
AIRFRAME	1 16.67	.00	1 16.67	2 3.57	.00	2 3•57	3 4.84	.00	3 4.84
LANDING GEAR	•00	.00	.00	.00	.00	.00	.00	•00	• Ó O
POWERPLANT	• 00	.00	.00	.00	.00	.00	.00	.00	.00
SYSTEMS	.00	1 16.67	1 16.67	.00	.00	.00	.00	ī 1.61	ī 1.61
INSTRUMENTS/EQUIPMENT AND ACCESSORIES	•00	1 16.67	1 16.67	1 1.79	1 1.79	2 3.57	ĩ 1.61	2 3.23	3 4.84
ROTORCRAFT	.00	. 00	.00	.00	.00	•00	.00	.00	. Ó O
AIRPORTS/AIRWAYS/FACILITIES	.00	.00	.00	2 3.57	5 8.93	7 12.50	? 3.23	5 8.06	11.29
WEATHER	.00	.00	.00	2 3 . 57	7 12.50	9 16.07	? 3 . 23	7 11.29	9 14.52
TERRAIN	.00	1 16.67	1 16.67	4 7.14	16 28.57	20 35.71	4 6.45	17 27.42	2 <u>1</u> 33.87
MISCELLANEOUS	1 16.67	.00	1 16.67	4 7.14	.00	4 7.14	5 8.06	.00	P.06
UNDETERMINED .	1 16.67	.00	1 16.67	• 0 0	.00	•00	1.61	.00	î 1.61

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

GLIDERS-1973

INVOLVES 62 TOTAL ACCIDENTS INVOLVES 6 FATAL ACCIDENTS

ACCIDENTS WITH ASSIGNED CAUSES ONLY

	FAT	AL ACCIO	ENTS		TAL ACCI		ALL ACCIDENTS		
DETAILED CAUSE/FACTOR	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
00 PILOT 00									
PILOT IN COMMAND ATTEMPTED OPERATION BEYOND EXPERIENCE/ABILITY LEVEL DIVERTED ATTEMPTON FROM OPERATION OF AIRCRAFT EXCECDED DESIGN STRESS LIMITS OF AIRCRAFT FAILED TO SEE AND AVOID OTHER AIRCRAFT FAILED TO SEE AND AVOID OBJECTS OR OBSTRUCTIONS FAILED TO OBTAIN/MAINTAIN FLYING SPEED MISJUDGEO. SPEED, ALTITUDE OR CLEARANCE FAILED TO USE OR INCORRECTLY USED MISC EQUIPMENT FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES ETC IMPROPER OPERATION OF FLIGHT CONTROLS IMPROPER LEVEL OFF IMPROPER COMPENSATION FOR WIND CONDITIONS IMPROPER COMPENSATION FOR WIND CONDITIONS IMPROPER COMPENSATION FOR WIND CONDITIONS IMPROPER TO SEPELIGHT DECISIONS OR PLANNING LACK OF FAMILIABITY WITH AIRCRAFT EXERCISED POOR JUDGMENT OPERATED CAPELESSLY SELECTED UNSUITABLE TERRAIN INITIATED FLIGHT IN ADVERSE WEATHER CONDITIONS MISJUDGED DISTANCE AND SPEED MISJUDGED DISTANCE AND SPEED MISJUDGED DISTANCE AND SPEED MISJUDGED DISTANCE AND ALTITUDE MISJUDGED DISTANCE AND ALTITUDE MISJUDGED DISTANCE AND ALTITUDE	1 3	. 1	3	1 1 2 1 8 1 2 10 3 13 13 14 5 5 2 1 6 1 1 2	1 1 1 5	1 4 4 2 1 8 8 1 1 1 2 2 1 1 6 1 1 2 2 1 2 2 1 2 3 3	111111111111111111111111111111111111111	i 4	251221111220001111112000111111111111111
MISJLOGED CLEARANCE IMPROPER PECOVERY FROM BOUNCED LANDING INCAPACITATION FAILED TO MAINTAIN DIRECTIONAL CONTROL	1		1	2 1 7		2 1 7	. <u>1</u> . <u>1</u> 7		7
SUBTOTAL	6	2	8	. 91	11	102	97	13	110
DUAL STUDENT CONTROL INTERFERENCE					1	1		ĩ	i
SUBTOTAL					1	1		1	i
** PERSONNEL **									
FLIGHT INSTRUCTOR INADEQUATE TRAINING OF STUDENT MAINTENANCE, SERVICING, INSPECTION IMPROPER MAINTENANCE (OWNER PERSONNEL) OPERATIONAL SUPERVISORY PERSONNEL INADEQUATE FLIGHT TRAINING-PROCEDURES WEATHER PERSONNEL TRAFFIC CONTROL PERSONNEL				1	1	1 1 1	ĩ ĩ	1	i 1 1
AIRPORT SUPERVISORY PERSONNEL AIRWAYS FACILITIES PERSONNEL PRODUCTION-DESIGN-PFRSONNEL POOR/INADEQUATF DESIGN OTHER MISCELLANEOUS-PERSONNEL PILOT OF OTHER AIRCRAFT THIRD PILOT FLIGHT ENGINEER DISPATCHING				1	1 1 1	2 1 5	1	i i	? 1 5
SUBTOTAL				7	4	11	ź	. 4	ïī
** AIRFRAME **									
WINGS SPARS	1		1				ī		ì

AIRFRAME (CONTINUED)	5.17		- LITC			251.75	ALL ACCIDENTS			
	FATAL ACCIDENTS			NONE A	TAL ACCI	DENIS	ALL ACCIDENTS.			
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	
FUSELAGE LANDING GFAR FLIGHT CONTROL SURFACES SPOILERS AND SLOTS-LEADING EDGE FLAPS. SPEED BRAKES OTHER				1 1		1 1	11		1	
SUBTOTAL	1		. 1	2		2	3		3	
** SYSTEMS **										
ELECTRICAL SYSTEM HYDRAULIC SYSTEM FLIGHT CONTROL SYSTEMS ANTI-ICING, DE-ICING SYSTEMS AIR CONDITION, HEATING AND PRESSURIZATION AUTO PILOT FIRE WARNING SYSTEM FIRE EXTINGUISHER SYSTEM										
OXYGEN SYSTEM CREW SYSTEM		,	,					,	ī	
OTHER SYSTEMS		1	1					1	1	
SUBTOTAL		1	1					1	1	
** INSTRUMENTS/FQUIPMENT AND ACCESSORIES **										
FLIGHT AND NAVIGATION INSTRUMENTS OTHER COMMUNICATIONS AND NAVIGATION EQUIPMENT MISCELLANEOUS EQUIPMENT GLIDER LAUNCH/TOW EQUIPMENT		1	1	1	1	1	ĩ	1	Ĩ 2	
SUBTOTAL		1	1	1	1	2	ĩ	2	3	
** AIRPORTS/AIRWAYS/FACILITIES **		_	-	_	-	_				
AIRPORT FACILITIES AIRPORT CONDITIONS SOFT SHOULDERS (RUNWAY) HIGH VEGETATION OTHER AIRWAYS FACILITIES				2	1 1 3	1 1 5	?	ī 1 3	1	
SUBTOTAL				2	5	7	2	5	7	
** WEATHER **				2		•		,	,	
UNFAVORABLE WIND CONDITIONS SUDDEN WINDSHIFT TURBULENCE IN FLIGHT, CLEAR AIR TURBULENCE ASSOCIATED WITH CLOUDS AND/OR THUNDERSTORMS DOWNDRAFTS, UPDRAFTS LOCAL WHIPLUIND HIGH TEMPERATURF THUNDERSTORM ACTIVITY OTHER				1	3 1 1 1 2 1 1 1 1 2	4 1 1 2 2 1 1 2	ĩ	1 1 2 1 1 1 2 2	1 2 2 1 2 2 1 2 2 2 2 2 2 2 2 2 2 2 2 2	
SUBTOTAL				2	13	15	ż	13	15	
** TERRAIN **										
WET. SOFT GROUND HIGH VEGETATION ROUGH/JUNEVEN HIGH OBSTRUCTIONS OTHER		1	1	2	1 1 3 9 2	1 1 5 11 2	5 5	1 1 3 10 2	1 1 5 12 2	
SUBTOTAL		1	1	4	16	20	4	17	ĩs	
** MISCELLANEOUS **										
EVASIVE MANEUVER TO AVOID COLLISION				4		4	4		4	

MISCELLANEOUS (CONTINUED)	FATAL ACCIDENTS			NONFA	TAL ACCI	DENTS	ALL ACCIDENTS.			
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	
UNDETERMINED DIRECT ENTRIES	1		1				1		ĩ 1	
SUBTOTAL	. 2		2	4		4	6		۴	
GRAND TOTAL	9	5	14	113	51	164	122	56	Ĩ78	
** MISCELLANEOUS ACTS: CONDITIONS **										
CHECKLIST-FAILED TO USE INSTRUCTIONS-MISINTERPRETED NOT ALLIGNED WITH RUNWAY/INTENDED LANDING AREA FLEW INTO BLIND CANYON	1		1	1	1	1 1 1	Ī	1]] 1 1	
PREMATURE FLAP RETRACTION POORLY PLANNED APPROACH	•		•		1 3	1 3		3 2	î 3	
SEPARATION IN FLIGHT HYPOXIA OVERLOAD FAILURE	1 2	2	2 1 2	1		1	. 1	•	1 3	
MATFRIAL FAILURE DOWNWIND ERRATIC FLUTTER		1	1	1	1	1 1 1	i	2 1	2	
INTENTIONAL GROUND-WATER LOOP-SWERVE				1		i	1		í	

DIRECT ENTRY CAUSES

MISC-TCW ROPE FAILED TO RELEASE FOR UNDTRMD REASON

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

KIND OF FLYING BY INJURY INDEX

RECORDS ACCIDENTS PERCENT

1

46

2

9.38 7.81

1.56

73.44 3.13

				GLID	ER		
	4A1	SERI	MIN	OR OHE			
INSTRUCTIONAL							
DUAL			1	5			
SOLO		1		4			
CHECK							
TRAINING		1					
NONCOMMERCIAL							
PLEASURE	6	10	6	25			
PRACTICE		1	1				
BUSINESS							
CORPORATE/EXECUTIVE							
AERIAL SURVEY							
COMPANY FLIGHT							
CTHER							
COMMERCIAL							
AERIAL APPLICATION							
CROP CONTROL RELATED FLIGHT							
FIRE CONTROL							
FIRE CONTROL RELATED FLIGHT							
AERIAL MAPPING/PHOTOGRAPHY							
AERIAL ADVERTISING							
PCWER AND PIPELINE PATROL							
FISH SPOTTING							
AIR TAXI-PASSENGER OPERATIONS							
AIR TAXI-CARGO OPERATIONS							
CONSTRUCTION WORK							
SCHEDULED PASSENGER SERVICE							
SCHEDULED CARGO SERVICE							
INTRA-STATE CHARTER PASSG.							
INTRA-STATE CHARTER CARGO.							
MILITARY CONTRACT-PASSENGER							
MILITARY CONTRACT-CARGO							
CHARTER CARGO-DOMESTIC							

CHARTER PASSG-DOMESTIC

CHARTER-CARGO-INTERNATIONAL

CHARTER-PASSG-INTERNATIONAL

OTHER

KIND OF FLYING	KATA	SERIO	WINC	HOHE			RECORDS	ACCIDENTS	PERCENT
UNKNOWN/NOT REPORTED									
MISCELLANEOUS									
EXPERIMENTATION				1			1	1	1.56
TEST									
DEMONSTRATION									
FERRY									
SEARCH AND RESCUE									
AIR SHOW/AIR RACING				2			2	1	3.13
PARACHUTE JUMP									
PARACHUTE JUMP-AIR SHOW,									
TOWING GLIDERS									
SEEDING CLOUDS									
FUNTING									
PCLICE PATROL									
HIGHWAY TRAFFIC ADVISORY									
ALL OTHER PURLIC FLYING									
CTHER									
UNKNOWN/NOT REPORTED									
RECORDS	6	13	8	37			64		·
ACCIDENTS	6	13	7	36				62	

. 9.4 20.3 12.5 57.8

PERCENT

INJURIES, ACCIDENTS GLIDER

INJURIES

					,			
		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
	PILOT	. 6	12	5	41			64
	CCPILOT DUAL STUDENT CHECK PILOT FLIGHT ENGINEER NAVIGATOR CABIN ATTENDANT			1	5			6
	EXTRA CREW PASSENGERS		2	3	5			10
	TOTAL	6	14	9	51		ABOARD	80
i H					:	•		
157 -	* OTHER AIRCRAFT OTHER GROUND				5			. 5
	GRAND TOTAL	6	14	9	56			85

INVOLVES 62 TOTAL ACCIDENTS INVOLVES 6 FATAL ACCIDENTS

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

COLLISIONS BETWEEN AIRCRAFT

-3

TYPE OF COLLISION(1ST) VS INJURY INDEX

	4P	SERI	WINC	404	RECORDS AC	CIDENTS	PERCENT
ecth in flight	24	6	2	16	48	24	49.48
ONE AIRBORNE			3	1	4	3	4.12
BCTH ON GROUND	2	2	4	37	45	23	46.35
RECCRDS	26	8	9	54	97		
ACCIDENTS	13	4	5	28		50	
PERCENT	26.8	8.2	9.3	55.7			

ANALYTIC TABLE

TYPE OF COLLISION (2ND) VS INJURY INDEX

	CALOS CALONINOS ONE	RECURDS	ACCIDENTS	PERCENT
BCTH IN FLIGHT				
ONE AIRBORNE	1			
BCTH ON GROUND		1	1	50.00
	. 1	1	1	50.00
RECORDS	1 1			
ACCIDENTS	1 1	2		
PERCENT	.0 .0 50.0 50.0		2	

PHASES OF OPERATION(1ST) VS INJURY INDEX COLLISIONS

	isto jet hud to the		
	to see the to	RECORDS	ACCIDENTS PERCENT
STATIC			
STARTING ENGINE/S	1	1	1 1.01
IDLING ENGINE/S	1 4	5	5 5.05
ENGINE RUNUP	3	3	2 3.03
IDLING ROTORS .	2 1	3	2 3.03
PARKED-ENGINES NOT OPERATING	1	1	1 1.01
OTHER	2	2	2 2.02
TAXI			
TO TAKENEE	6	6	5 6.06
FROM LANDING	1 7	8	7 8.08
OTHER	1	1	1 1.01
GROUND TAXI TO TAKENFF	1	1	1 1.01
GROUND TAX! FROM LANDING			
GROUND TAXI, OTHER			
AERIAL TAXI TO TAKENEE			
AERIAL TAXI TO/FROM LANDING			
AERIAL TAXI, OTHER			
TAKENFF			
RUN	1 1	2	2 2.02
INITIAL CLIMB	1 2 1 1	. 5	4 5.05
VERTICAL			
RUNNING			
ABORTED			
ABORTED			
ABORTED			
NTHER			
INFLIGHT			
CLIMB TO CRUISE	2	2	1 2.02
NORMAL CRUISE	3 4	7	5 7.07
DESCENDING	1	1	1 1.01
HOLDING			
HOVERING			
POWER-ON DESCENT			
AUTOROTATIVE DESCENT			
ACROBATICS			
BUZZING			
DOEC 1,411			

		P .	o ⁰ _(AOHE De ME					
	· 4k	Set	WIL	40			RECORDS	ACCIDENTS	PERCENT
UNCONTROLLED DESCENT							-	. ".	
EMERGENCY DESCENT							·. :		
LOW PASS						,			
OTHER	10						1.0	6	10.10
EN ROUTE TO TREAT CROP									
EN ROUTE TO RELOADING AREA							1 4		
SURVEY FIELD/AREA						•			
STARTING SWATH RUN									
SWATH RUN	1						, 1	(T	1.01
FLAREDUT FOR SWATH RUN							•		•.
PULLUP FROM SWATH RUN									
PROCEDURE TURNAROUND									
CLEANUP SWATH									
MANEUVER TO AVOID OBSTRUCTION									
RETURN TO STRIP									
LANDING									
TRAFFIC PATTERN-CIRCLING	2			1			3	3	3.03
FINAL APPROACH	5	3		2			10	7	10.10
INITIAL APPROACH									
FINAL APPROACH									
LEVEL OFF/TOUCHDOWN			2	6			8	5	8.08
ROLL	1		3	12			16	11	16.16
ROLL-ON/RUN-ON									
POWER-ON LANDING									
POWER-OFF AUTOROTATIVE LDG									
GO-AROUND	1	1	1				3	3	3.03
MISSED APPROACH									
OTHER									
UNKNOWN/NOT REPORTED									
RECORDS	26	8	10	55			99		
ACCIDENTS	13	4	5	28				50	
PERCENT	26.3	8.1	10.1	55.6					

INVOLVES 50 TOTAL ACCIDENTS
INVOLVES 13 FATAL ACCIDENTS

	FATA	L ACCIDI	ENTS	NONFAT	AL ACCI	DENTS	ALL ACCIDENTS			
BROAD CAUSE/FACTOR	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	
PILOT .	13 100.00	3 23.08	13 100.00	37 100.00	8 21.62	37 100•00	50 100•00	11 22•00	50 100.00	
PERSONNEL	. 12 92.31	3 23.08	12 92•31	36 97.30	2 5•41	37 100.00	48 96.00	5 10•00	49 98•00	
AIRFRAME	•00	1 7.69	1 7.69	•00	•00	•00	• 00	1 2.00	1 2.00	
LANDING GEAR	• 00	1 7•69	1 7.69	•00	•00	•00	-00	1 2•00	1 2.00	
POWERPLANT	•00	•00	•00	•00	•00	•00	•00	.00	-00	
SYSTEMS	•00	•00	•00	1 2.70	•00	1 2.70	1 2.00	00	1 2.00	
INSTRUMENTS/EQUIPMENT AND ACCESSORIES	.00	-00	•00	•00	1 2.70	1 2.70	•00	1 2•00	1 2.00	
ROTORCRAFT	•00	-00	•00	•00	•00	•00	•00	•00	•00	
AIRPORTS/AIRWAYS/FACILITIES	•00	.00	.00	1 2.70	4 10.81	5 13.51	1 2•00	4 8• 0.0	5 10•00	
WEATHER	•00	2 15•38	2 15•38	•00	1 2.70	1 2.70	•00	3 6.00	3 6.00	
TERRAIN	•00	-00	•00	•00	1 2•70	1 2.70	•00	1 2.00	1 2.00	
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

162 •

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

CAUSE/FACTOR TABLE COLLISIONS

INVOLVES 50 TOTAL ACCIDENTS INVOLVES 13 FATAL ACCIDENTS

ELECTRICAL SYSTEM

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
DETAILED CAUSE/FACTOR		FACTOR			FACTOR			FACTOR	TOTAL
** PILOT **									
PILOT IN COMMAND DELAYED IN INITIATING GO-AROUND DIVERTED ATTENTION FROM OPERATION OF AIRCRAFT FAILED TO SEE AND AVOID OTHER AIRCRAFT FAILED TO OSTAIN/MAINTAIN FLYING SPEED MISJUDGED, SPEED, ALTITUDE DR CLEARANCE FAILED TO USE OR INCORRECTLY USED MISC EQUIPMENT FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES ETC IMPROPER OPERATION OF FLIGHT CONTROLS INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING INADEQUATE SUPERVISION OF FLIGHT EXERCISED PUOR JUDGMENT TAXIED/PARKED WITHOUT PROPER ASSISTANCE MISJUDGED CLEARANCE MISJUDGED CLEARANCE MISJUDGED CLEARANCE MISJUDGED TO MAINTAIN DIRECTIONAL CONTROL SELECTED WOOR RUNMAY RELATIVE TO EXISTING WIND	19 1 1 1 1	3	1 20 1 4 1 1	1 34 1 4 1 2 2 1 1 1 1 5	5 1 2 3	1 5 34 1 1 6 1 3 2 2 1 1 1 5 3	1 53 1 1 5 2 3 3 1 1 1 1 5 1 1 5	6 1 1 5 3	1 54 1 1 10 2 3 3 1 1 1 1 2
SUBTUTAL	25	5	30	57	11	68	82	16	98
DUAL STUDENT DIVERTED ATTENTION FROM OPERATION OF AIRCRAFT FAILED TO SEE OTHER AIRCRAFT	1	1	2	<u>1</u> 2		1 2	1 3	1	1.
SUBFOTAL	1	1	2	3		3	4	1	5
** PERSONNEL **									
FLIGHT INSTRUCTOR INADEQUATE TRAINING OF STUDENT MAINTENANCE, SERVICING, INSPECTION OPERATIONAL SUPERVISORY PERSONNEL WEATHER PERSONNEL TRAFFIC CONTRUL PERSONNEL INADEQUATE SPACING OF AIRCRAFT OTHER		2 4	2	. 2	2	2	2	2 2 4	2 4 4
AIRPORT SUPERVISORY PERSUNNEL OTHER AIRWAYS FACILITIES PERSONNEL PRODUCTION—DESIGN—PERSONNEL					ı	1		1	1
MISCELLANEOUS-PERSONNEL PILOT OF OTHER AIRCRAFT THIRD PILOT FLIGHT ENGINEER DISPATCHING	19	1	20	47		47	66	. 1	67
SUBTOTAL	19	7	26	49	3	52	68	10	78
** AIRFRAME **									
WINGS FUSELAGE LANDING GEAR SMITCHES, LEVERS, CRANKING MECHANISM, ETC FLIGHT CONTRUL SURFACES VERTICAL STABILIZER, ATTACHMENTS		1	1					1	1
SUBTOTAL		2	2					2	2
** SYSTEMS **									

CAUSE/FACTOR TABLE

SYSTEMS (CONTINUED)	FAT	FATAL ACCIDENTS			TAL ACCI	DENTS	ALL ACCIDENTS			
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FAC TOR	TOTAL	
REGULATOR HYDRAULIC SYSTEM FLIGHT CONTROL SYSTEMS ANTI-ICING, DE-ICING SYSTEMS AIR CUNDITION, HEATING AND PRESSURIZATION AUTO PILOT FIRE MARNING SYSTEM FIRE EXTINGUISHER SYSTEM OXYGEN SYSTEM OTHER SYSTEMS				1		1			1	
SUBTUTAL				1		1	1		. 1	
** INSTRUMENTS/EQUIPMENT AND ACCESSORIES **										
FLIGHT AND NAVIGATION INSTRUMENTS AIRSPEED COMMUNICATIONS AND NAVIGATION EQUIPMENT MISCELLANEOUS EQUIPMENT					1	1		1	1	
SUBTOTAL					1	1		1	1	
** AIRPORTS/AIRWAYS/FACILITIES **										
AIRPORT FACILITIES OTHER AIRPORT CONDITIONS OTHER AIRWAYS FACILITIES				2	2	4 . 5	2	2	4 5	
SUBTUTAL				2	7	9	2	7	9	
** WEATHER **										
UNFAVORABLE WIND CONDITIONS OBSTRUCTIONS TO VISION OTHER		2 2	2 2		1	1		1 2 2	1 2 2	
SUBTOTAL		4	4		1	1		5	5	
** TERRAIN **										
HIGH OBSTRUCTIONS					2	2		2	2	
SUBTOTAL					2	2		2	2	
GRAND TOTAL	45	19	64	112	25	137	157	44	201	
** MISCELLANEOUS ACTS, CONDITIONS **										
DISREGARD OF GOOD OPERATING PRACTICE IMPROPER EMERGENCY PROCEDURES POORLY PLANNED APPROACH ELECTRICAL FAILURE WINDSHIELD, DIRTY, FOGGY, ETC-RESTRICTED VISION SEPARATION IN FLIGHT CONGESTED TRAFFIC-PATTERN ICE-WINDSHIELD SUNGLARE TOUCH AND GO LANDING DOWNWIND ERRATIC		2 2 2 1	2 2 2 1	. 1	2 1 1 2 2 1 3 1 2 1	2 1 1 2 2 1 3 1 2		2 1 1 2 2 4 1 5 2 2 1	2 1 1 2 2 4 1 5 2 2	
CONGESTED RAMP/TAXIWAY				2	3	5	2	3	5	

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

KIND OF FLYING BY INJURY INDEX COLLISIONS

	. •	(P)	روا	OUS	404'	ı				
	4	•	Α,	4.	~			RECORD	S ACCIDENTS	PERCENT
INSTRUCTIONAL										
DUAL	3	3	1	1	7			1	2 12	12.12
SOLO	1	1	1	1	2				5 5	5.05
CHECK	•									
TRAINING	2	2	1		1				4 4	4.04
NONCOMMERCIAL	. ,									
PLEASURE	1:	1	1	8	23			4	3 32	43.43
PRACTICE	1	ı			4				5 5	5.05
BUSINESS					3				3 3	3.03
CORPORATE/EXECUTIVE	1	l							1 1	1.01
AERIAL SURVEY										
COMPANY FLIGHT										
OTHER										
COMMERCIAL									←	
AERIAL APPLICATION										
CROP CONTROL RELATED FLIGHT	:	1							1 1	1.01
FIRE CONTROL		2							2 1	2.02
FIRE CONTROL RELATED FLIGHT										
AERIAL MAPPING/PHOTOGRAPHY										
AERIAL ADVERTISING										
POWER AND PIPELINE PATROL										
FISH SPOTTING										
AIR TAXI-PASSENGER OPERATIONS		1	2						3 2	3.03
AIR TAXI-CARGO OPERATIONS		1			2				3 2	3.03
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					3				3 2	3.03

KIND	OF FLYING		KP1	PSER	NIN	0404	ķ	RECORDS	ACCIDENTS	PERCENT
	UNKNOWN/NOT REPORTED									
	MISCELLANEOUS									
	EXPERIMENTATION									
	TEST					2		2	2	2.02
	DEMONSTRATION									
	FERRY					2		2	2	2.02
	SEARCH AND RESCUE									
	AIR SHOW/AIR RACING					2		2	1	2.02
	PARACHUTE JUMP					2		2	2	2.02
	PARACHUTE JUMP-AIR SHOW									
	TOWING GLIDERS					2		2	2	2.02
	SEEDING CLOUDS									
	HUNTING			2				2	1	2.02
	POLICE PATROL									
	HIGHWAY TRAFFIC ADVISORY									
	ALL OTHER PUBLIC FLYING		2					. 2	1	2.02
	OTHER									
	UNKNOWN/NOT REPORTED									
RE	ECORDS	÷	26	8	10	55		99		
AC	CCIDENTS		13	4	5	28			. 50	
PF	RCENT		26.3	8.1	10.1	55.6				

KIND OF FLYING BY AIRCRAFT DAMAGE COLLISIONS

	DESTR	SUBST	ANINO	HOHE			RECORDS	ACCIDENTS	PERCENT
INSTRUCTIONAL									
DUAL	4	7		1 .			12	12	12.12
SOLO	1	4					5	5	5.05
CHECK									
TRAINING	2	2					4	4	4.04
NONCOMMERCIAL									
PLEASURE	10	25	8				43	32	43.43
PRACTICE	1	2	2				5	5	5.05
BUSINESS		3					3	. 3	3.03
CORPORATE/EXECUTIVE	1						1	1	1.01
AERIAL SURVEY									
COMPANY FLIGHT									
OTHER									
COMMERCIAL									
AERIAL APPLICATION									
CROP CONTROL RELATED FLIGHT			1	1			. 1	1	1.01
FIRE CONTROL	1	1					2	1	2.02
FIRE CONTROL RELATED FLIGHT									
AERIAL MAPPING/PHOTOGRAPHY									
AERIAL ADVERTISING									
POWER AND PIPELINE PATROL									
FISH SPOTTING									
AIR TAXI-PASSENGER OPERATIONS	1	2					3	2	3.03
AIR TAXI-CARGO OPERATIONS	1	1	.1				3	2	3.03
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		3					3	2	3.03

KIND OF FLYING	OF FRO EUR STRING NOW	RECORDS	ACCIDENTS PERCE	NT
UNKNOWN/NOT REPORTED				
MI SCELL ANEOUS				
EXPERIMENTATION				
TEST	2	2	2 2.	02
DEMONSTRATION				
FERRY	2	2	2 2.	02
SEARCH AND RESCUE				
AIR SHOW/AIR RACING	1 1	2	1 2.	02
PARACHUTE JUMP	2	. 2	2 2.	02
PARACHUTE JUMP-AIR SHOW				
TOWING GLIDERS	1 1	. 2	2 2.	.02
SEEDING CLOUDS		•		
HUNTING	2	2	1 2.	02
POLICE PATROL				
HIGHWAY TRAFFIC ADVISORY				
ALL OTHER PUBLIC FLYING	1 1	2	1 2.	.02
OTHER				
UNKNOWN/NOT REPORTED				
RECORDS	24 60 14 1	99		
ACCIDENTS	19 41 14 1		50	
PERCENT	24.2 60.6 14.1 1.0			

SEGMENTS OF AVIATION BY INJURY INDEX COLLISIONS

	4	AP SE	FIOUS	40°	H ^E	3		RECORDS	ACCIDENTS	PERCENT
SML US GEN AVN-COLLISION SAME	22	. 8	10) 54				94	47	94.95
SML US GEN AVN-LRG US GEN AVN	4							4	2	4.04
SML US GEN AVN-US AIR CARRIER										
SML US GEN AVN-US MILITARY										
SML US GEN AVN-FOREIGN GEN AV										
SML US GEN AVN-FOREIGN ACR				1				1	1	1.01
SML US GEN AVN-FOREIGN MIL										
LRG US GEN AVN-COLLISION SAME										
LRG US GEN AVN-US AIR CARRIER										
LRG US GEN AVN-US MILITARY										
LRG US GEN AVN-FOREIGN GEN AV										
LRG US GEN AVN-FOREIGN ACR					•					
LRG US GEN AVN-FOREIGN MIL										
US AIR CARRIER-US AIR CARRIER										
U.S.AIR CARRIER-U.S.MILITARY										
US ACR-FOREIGN GEN AVIATION										
US AIR CARRIER-FOREIGN ACR										
US AIR CARRIER-FORFIGN MIL										
RECORDS	26	. 8	10	55				99		
ACCIDENTS	13	4	. 5	2.8					50	
PERCENT	26.3	8.1	10.1	. 55.6						
				NAL VT	IC TABLE					
			A	NALYI	IC TABLE					
	CONTROLL	ED/UN	CONTR	OLLED	AIRPORT V	S INJURY	INDEX			

CONTROLLED/UNCONTROLLED AIRPORT VS INJURY INDEX COLLISIONS

	ENTESEPIONS AND ADHE	RECORDS ACCIDENTS PERCENT
CONTROLLED AIRPORT	8 2 15	25 13 31.65
UNCONTROLLED AIRPORT	8 8 6 32	54 27 68.35
	·	
RECCRDS	16 8 8 47	¹ 79
ACCIDENTS	8 4 4 24	40
PERCENT	20.3 10.1 10.1 59.5	

CONTROL ZONE VS INJURY INDEX

CCNTROL ZGNE/AREA	¿P1	A SERI	WIN	HOH,	RECORDS	ACCIDENTS	PERCENT
YES	6	2	2	13	23	12	28.40
NO	16	4	4	31	. 55	28	67.90
UNKN CVN				3	3	2	3.70
REOCRDS	22	6	6	47	. 81		
ACCIDENTS	11	3	3	25		42	
PERCENT	27.2	7.4	7.4	58.0			

ANALYTIC TABLE

AIRPORT PROXIMITY VS INJURY INDEX COLLISIONS

	٦	ام دون	PIOUS	40°	.	R ECOR DS	ACCIDENTS	PERCENT
	`	•	,					
ON AIRPORT	6	6	8	46		66	34	66.67
ON SEAPLANE BASE								
ON HELIPORT								
ON BARGE/SHIP/PLATFORM								
IN TRAFFIC PATTERN	3	2		2		7	4	7.07
WITHIN 1/4 MILE				1		1	1	1.01
WITHIN 1/2 MILE	2				•	2	1	2.02
WITHIN 3/4 MILE	2					2	. 1	2.02
WITHIN 1 MILE								
WITHIN 2 MILES	1					1	1	1.01
WITHIN 3 MILES								
WITHIN 4 MILES	2					2	1	2.02
WITHIN 5 MILES								
BEYOND 5 MILES	10		2	4		16	8	16.16
UNKNOWN/NOT REPORTED				2	•	. 2	1	2.02
RECORDS	26	8	10	55		99		
	13	4		28		,,	50	
ACCIDENTS							50	
PERCENT	26.3	0 • I	10.1	22.0				

TYPE OF FLIGHT PLAN VS INJURY INDEX COLLISIONS

	۷,	AR' SE	\$100's	404	4046			RECORDS	ACCIDENT	S PERCENT
NONE	2	3 8	3 1	0	53			94	. 49	94.95
VFR		2			2			4	3	4.04
IFR		1						1	1	1.01
CONTROLLED VFR										
IFR										
TOWER EN ROUTE CONTROL SERVIC										
DVFR										
VFR FLIGHT FOLLOWING SERVICE										
SPECIAL VFR										
OTHER										
UNKNOWN/NOT REPORTED .							٠.			
RECORDS	2	5 8	B 1	0	55			99		
ACCIDENTS	1	3 4	4	5	28				50	•
PERCENT	` 26.	8.1	10.	1 55	• 6					

ANALYTIC TABLE

TYPE OF WEATHER VS INJURY INDEX COLLISIONS

	" PIR'SEA WIND ONE	RECORDS	ACCIDENTS PERCENT
VFR	26 8 10 55	99	50 00.00
IFR			
BELOW MINIMUMS			
UNKNOWN/NOT REPORTED			
RECORDS	26 8 10 55	. 99	
ACCIDENTS	13 4 5 28		50
PERCENT	26.3 8.1 10.1 55.6		

PAGE - 171 -

TYPE AIRCRAFT VS AIRCRAFT DAMAGE COLLISIONS

	DESKOTED STANIAGE MORE	RECORDS	ACCIDENTS	PERCENT
FIXED-WING	22 53 13 1	89	46	89.90
RCTORCRAFT	1 4	5	3	5.05
GLIDER	1 3 1	. 5	3	5.05
BALLOON				
BLIMP				
CIRIGIBLE				
RCCKET				
CCNVERTIPLANE				
GYROPLANE				
CTHER				
RECORDS	24 60 14 1	99		
ACCIDENTS	19 41 14 1		50	
PERCENT	24.2 60.6 14.1 1.0			

ANALYTIC TABLE

CONDITIONS OF LIGHT VS INJURY INDEX

	KP1	SER	MIN	08	OME	RECORDS	ACCIDENTS	PERCENT
CAWN								
CAYLIGHT	24	8	8	` ;	50	90	45	90.91
DUSK								
NIGHT	2		2	:	4	8	4	8.08
NIGHT					1	1	1	1.01
UNKNOWN/NOT REPORTED								
REGCRDS	26	8	10	,	55	99		
ACCIDENTS	13	4	5		28		50	
PERCENT	26.3	8.1	10.1	55	٠,			

PILOT CERTIFICATE VS INJURY INDEX COLLISIONS

	40	A SER	NIE	04 04	RECORDS	ACCIDENTS	PERCENT
STUDENT	2	2	1	8	13	13	13.13
PRIVATE	10	1	3	19	. 33	26	33.33
CCMMERCIAL	4	4	4	15	. 27	22	27.27
AIRLINE TRANSPORT			1	1	2	2	2.02
PRIVATE W/FLIGHT INSTRUCTOR							
OCML WITH FLT INSTRUCTOR	7	1	1	. 8	17	15	17.17
ATR W/FLIGHT INSTRUCTOR	3			4	. 7	6	7.07
OTHER		,					
NCNE							
UNKNOWN/NCT REPORTED							
RECCRDS	26	8	10	55	99		
ACCIDENTS	13	4	5	28		50	
PERCENT	26.3	8.1	10.1	55.6			

STATE OF OCCURRENCE VS INJURY INDEX

	481	a ^l stalo	WIHOR	POPE			RECORDS	ACCIDENTS	PERCENT
ALABAMA									
ALASKA	2	2		2			. 6	3	6.06
AR I Z NNA									
ARKANSAS				2			2	1	2.02
CALIFORNIA	10			13			23	12	23.23
COLORADO									
CONNECTICUT				2			2	1	2.02
DELAWARE									
FLORIDA				2			2	1	2.02
GEORGIA									
HAWAII									
IDAHO									
ILLINOIS	2						2	, 1	2.02
INDIANA	2						2	1	2.02
IUA⊄									
KANSAS				2			2	1	2.02
KENTUCKY				4			4	2	4.04
LOUISIANA									
MAINE									
MARYLAND		2		4			6	3	6.06
MASSACHUSETTS									
MICHIGAN									
MINNESOTA				2			2	1	2.02
MISSISSIPPI									
MISSOURI									
ΜΟΝΤΔΝΔ									
NEBRASKA				2			2	1	2.02
NEVADA									
NEW HAMPSHIRE			2	2			4	2	4.04
NEW JERSEY			2	2			4	2	4.04
NEW MEXICO									
NEW YORK	2	2		2			6	3	6.06
NORTH CAROLINA	4						4	2	4.04
NORTH DAKOTA			2				2	1	2.02
оніо				4			4	2	4.04
OKLAHOMA	2			4			6	3.	6.06

	KATAL	Stalo.	WINO	4046			RECORDS	ACCIDENTS	PERCENT
PENNSYLVANIA	2		2				4	. 2	4.04
RHODE ISLAND	<i>e</i> -		-						7.04
SOUTH CAROLINA									,
SOUTH DAKOTA									
TENNESSEE									
TEXAS				4			4	. 2	4.04
UŤAH									
VERMONT				2			2	1	2.02
VIRGINIA									
WASHINGTON									
WEST VIRGINIA									
WISCONSIN			2				ä	1	2.02
WYOMING									
DISTRICT OF COLUMBIA									
UNKNOWN/NOT REPORTED									
PUERTO RICO									
VIRGIN ISLANDS									
SAMNA									
OTHER (U.S. TERRITORIES)									
CANADA									
MEXICO									
CENTRAL AMERICA									
SOUTH AMERICA									
EUROPE									
ASIA									
AFRICA									
AUSTRALIA									
ICELAND									
GREENLAND									
OTHER (FOREIGN COUNTRIES)									
PACIFIC OCEAN NORTH LATITUDES									
PACIFIC OCEAN SOUTH LATITUDES									
ATLANTIC OCEAN NORTH LAT.									
ATLANTIC OCEAN SOUTH LAT.									
OTHER (INTERNATIONAL WATERS)		2						2 1	2.02
RECORDS	26	8	10	55			91		
ACC IDENTS	13	4	5	28			9.	50	
								30	

- 175 -

26.3 8.1 10.1 55.6

PERCENT

INJURIES, ACCIDENTS COLLISIONS (BOTH AIRBORNE)

INJURIES

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT COPILOT	15	3	3	27			48
DUAL STUDENT CHECK PILOT	1	1		5			7
FLIGHT ENGINEER NAVIGATOR CABIN ATTENDANT				1			1
EXTRA CREW	1			1			2
PASSENGERS	12	2	1	10			25
TOTAL	29	6	4	44		ABOARD	83
OTHER AIRCRAFT OTHER GROUND			1	1			2
GRAND TOTAL	29	6	5	45			85

INVOLVES 24 TOTAL ACCIDENTS INVOLVES 12 FATAL ACCIDENTS

T/6

INJURIES, ACCIDENTS COLLISIONS (ONE AIRBORNE)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
	FILOT COPILOT DLAL STUDENT GHECK PILCT FLIGHT ENGINEER NAVIGATOR			1	4			5 1 1
	CABIN ATTENDANT EXTRA CREW PASSENGERS				3			3
	TOTAL			2	8		ABOARD	10
- 177 -	* CTHER AIRCRAFT CTHER GROUND				76			76
	GRAND TOTAL			2	. 84			86

INVCLVES 3 TOTAL ACCIDENTS
INVCLVES FATAL ACCIDENTS

INJURIES CARRIED CPFOSITE 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 COLLISIONS (BOTH ON GROUND)

INJURIES

		FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL	
	FILOT CCPILOT DUAL STUDENT CHECK PILOT FLIGHT ENGINEER NAVIGATOR CABIN ATTENDANT	2	1	3	40 1 5			46 1 5	
	EXTRA CREW PASSENGERS		1	1	24			26	
ı	TCTAL	2	2	4	70		ABOARD	78	
178 -	CTHER AIRCRAFT CTHER GROUND								
	GRANC TOTAL	2	2	4	70			78	

INVCLVES 23 TOTAL ACCIDENTS INVCLVES 1 FATAL ACCIDENTS

YEARLY ACCIDENT RECORD

ACCIDENTS, FATALITIES, RATES U. S. GENERAL AVIATION

1964 - 1973

							Accident Rates				
		Accidents		He		Aircraft-	Per 100,000 Aircraft- Hours Flown		Per Million Aircraft- Miles Flown		
	Year	Total	Fatal F	atalities	(000)**	(000)**	Total	Fatal	Total	Fatal	
- 179 -	1964	5,069	526	1,083	15,738	2,180,818	32.2	3.34	2.32	0.241	
	1965	5,196	538	1,029	16,733	2,562,380	31.1	3.22	2.03	0.210	
	1966	5,712	573	1,149##	21,023	3,336,138	27.2	2.73	1.71	0.172	
	1967	6,115	603	1,229##	22,153	3,439,964	27.6	2.72	1.78	0.175	
	1968	4,968#	692#	1,399	24,053	3,700,864	20.6	2.86	1.34	0.186	
	1969	4,767	647	1,413##	25,351	3,926,461	18.8	2.55	1.21	0.164	
	1970	4,712	641	1,310	26,030	3,207,127	18.1	2.46	1.47	0.200	
	1971	4,648	661	1,355	25,512	3,143,181	18.2	2.59	1.48	0.211	
	1972	4,256#	695#	1,421##	26,974	3,317,100	15.8	2.57	1.28	0.209	
	1973	4,255#	723#	1,412	30,048	3,728,500	14.2	2.40	1.14	0.193	

[#] Suicide/sabotage accidents included in all computations except rates (1968-3, 1970-1, 1972-3, 1973-2).
Excludes air carrier fatalities (1966-2, 1967-104, 1969-82, 1972-5) when in collision with general aviation aircraft.

^{**} Source: FAA





GENERAL AVIATION

General Aviation refers to the operation of U. S. Civil Aircraft owned and operated by persons, corporations, etc., other than those engaged in air carrier operations authorized by a certificate of public convenience and necessity, issued by the Civil Aeronautics Board.

AIRCRAFT ACCIDENT

The accidents included herein are the occurrences incident to flight in which, "as a result of the operation of an aircraft, any person (occupant or nonoccupant) receives fatal or serious injury or any aircraft receives substantial damage." The total number of accidents shown in this publication should not be compared with the total number of accidents for any year prior to 1968. This is because of the effect of an amendment to Section 430.2 of Part 430 of the National Transportation Safety Board's Regulations, effective January 1, 1968. The change which influenced the decrease in the number of total accidents was to "substantial damage" to aircraft of 12,500 pounds maximum certificated takeoff weight or less, as follows:

Prior to January 1, 1968, the definition of substantial damage was:

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

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

(1) Except as provided in subparagraph (2) of this paragraph, substantial damage means damage or structural failure which adversely affects the structural strength, performance, or flight

AIRCRAFT ACCIDENT (con't)

characteristics of the aircraft, and which would normally require major repair or replacement of the affected component.

(2) Engine failure, damage limited to an engine, bent fairings or 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. Table 36 shows the relationship of first and second accident types. Some examples of types of accidents are as follows:

Gear Collapsed

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

Gear Retracted

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

Airframe Failure

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

Engine Failure/Malfunction

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

PHASE OF OPERATION

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

KIND OF FLYING

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

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

2. Noncommercial Flying

Refers to the use of an aircraft for purposes of pleasure,
personal transportation or in connection with a private

business, in corporate/executive operations, and in other operations, wherein there is no direct monetary fee charged. It includes the following categories:

Pleasure

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

Business

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

Corporate/Executive Operations

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

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).

CAUSE AND RELATED FACTORS

In determining the probable cause of an accident, all facts, conditions and circumstances are considered. For statistical purposes, where two or more causes exist in an accident, each is recorded and no attempt is made to establish a primary cause. Therefore, in the Cause and Related Factor Table, the figures shown in the columns dealing with Cause will exceed the total number of accidents. The term Factor is used, in general, to reflect those elements of an accident which further explain or supplement the probable cause(s). This provision was incorporated in the coding system to increase its flexibility and to provide a means for collecting essential items of information which could not be readily categorized elsewhere in the system. The number of total accidents and fatal accidents shown in the different Cause/Factor Tables may not agree with the number of total accidents or fatal accidents in other tables covering the same basic aircraft category or operational segment of General Aviation. This is due to the fact that certain numbers of these accidents are still under investigation and no cause determination could be made by the Safety Board. They were not, therefore, included in the Cause/Factor Tables.

SMALL FIXED-WING AIRCRAFT

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

LARGE FIXED-WING ATRCRAFT

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

ROTORCRAFT

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

ABBREVIATIONS

AIRCRAFT

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

ENGINES

SE - Single Engine ME - Multiengine

AIRCRAFT DAMAGE

DEST - Destroyed SUBST - Substantial

WEATHER CONDITIONS AND/OR TYPE OF FLIGHT PLAN

VFR - Visual Flight Rules IFR - Instrument Flight Rules

DVFR - Defense Visual Flight Rules

MISCELLANEOUS

EST - Estimated

FAA - Federal Aviation Administration

FAR - Federal Aviation Regulations

NA - Not Available

PASSG - Passenger

UNK - Unknown

3 1745 00070 9728

NATIONAL TRANSPORTA SAFETY BOARD WASHINGTON, D.C. 20594

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, \$300

POSTAGE AND FEES PAID NATIONAL TRANSPORTATION SAFETY BOARD

