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nual Review

of U.S. General Aviation Accidents

occurring in

calendar year 1966

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NATIONAL TRANSPORTATION SAFETY BOARD
Department of Transportation
Washington, D.C. 20591

Annual Review

GENERAL AVIATION ACCIDENT RATE dropped for second year in row, according to preliminary FAA data. Picture for 1966 shows 17,700,000 estimated hours flown and 5518 total accidents, for a rate of 31.2 accidents per 100,000 flight hours. Accidents and fatalities rates rose slightly, however, to 3.3 and 6.3 per 100,000 hours. Data for 1960 through 1966 (1966 data is preliminary) are shown in table.

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1966

FAA LOOK AT GENERAL AVIATION ACCIDENTS

Calendar year	Active aircraft inven.	Aircraft Hr. flown (000)	Total accidents	Rate	Fatal accidents	Rate	Fatalities	Rate
1960	76,549	13,121	4793	36.5	429	3.3	787	6
1961	80,632	13,602	4625	34.0	426	3.1	761	5.6
1962	84,121	14,500	4840	33.2	430	3.0	857	6.7
1963	85,088	15,106	4690	31.05	482	3.19	893	6.4
1964	88,742	15,252	5188	34.0	510	3.3	980	6.4
1965	95,442	16,733	5273	31.5	543	3.2	1023	6.1
1966	99,384	17,700	5518	31.2	554	3.3	1118	6.3

1. Rates based on 100,000 flight hours. 2. Data for 1966 is preliminary. 3. Data source: Management Information Manual for Active Aircraft. 4. Hours flown are estimated; based on annual airworthiness inspections performed on general aviation aircraft.

FAA WORRIES that if rates are not decreased markedly, number of accidents and fatalities will grow to intolerable levels. It says that by 1975, if predictions hold, there'll [redacted] aircraft in the active general aviation inventory. These, it is expected, would [redacted] it would mean over 9000 [redacted]

TWO CESSNA 150's COLLIDED [redacted] North Bade (Miami) [redacted] One was inbound to MIA VORTAC, the other, on high side of chandelle. Wings [redacted] tearing back (but not off) two or three feet of one's wingtip, and less severely damaging other. Without aileron control on one and with little aileron on other, both birds were landed safely at base airport. Both pilots had less than 200 hours experience, saying something both for Cessna and the skill of some of younger generation.

Bd C Aviation Mar 1967

NATIONAL TRANSPORTATION SAFETY BOARD
Department of Transportation
Washington, D.C. 20591

FOREWORD

The Statistical Review of General Aviation Accidents is published annually by the National Transportation Safety Board. This publication contains statistical information compiled from reports of General Aviation accidents that occurred during the calendar year 1966.

In the analysis of accidents a collision between aircraft is treated as one accident in the overall total. However, a complete analysis and coding is made on each aircraft involved in a collision. This produces two aircraft accident records, one for each aircraft. These records contain the same broad categories of coded data. The specific entries, such as type of aircraft, kind of flying, phase of operation, however, may or may not be common to each aircraft. As a result, the number of accidents may differ in the various tables depending upon whether or not collisions are involved and if so, whether or not the selected items of data are common to each aircraft. For example: In a table showing the number of accidents occurring in the various kinds of flying, if both of the colliding aircraft were conducting Pleasure Flying, one accident would appear in the Pleasure Flying column. However, if one aircraft was engaged in Pleasure Flying and the other was conducting Dual Instruction, the accident would appear twice, once in the Pleasure Flying column, and once in the Dual Instruction column.

During 1966 there were 5,712 total accidents in General Aviation including 50 collisions between aircraft. By coding each aircraft involved in the collisions an additional 50 records are produced, bringing the total accident record to 5,762. This figure reflects the true number of pilots and aircraft involved in the 5,712 accidents.

November 1967

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EXPLANATORY NOTES

GENERAL AVIATION

General Aviation refers to the operations 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 non-occupant) receives fatal or serious injury or any aircraft receives substantial damage."

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 32 shows the relationship of first and second accident types. Some examples of types of accidents are as follows:

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

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

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

Engine Failure/Malfunction
: Occurrences of engine failure or malfunction for any reason. Includes engine stoppage, power interruption or power loss.

EXPLANATORY NOTES

PHASE OF OPERATION

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

KIND OF FLYING

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

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

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

3. Commercial Flying
   Commercial flying includes all general aviation flying except instructional flying, normally conducted for direct financial return. It includes air taxi operations, aerial application, fire control, aerial mapping or photography, aerial advertising, power and pipe-line 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 not be present.

COLLISIONS BETWEEN AIRCRAFT

Collisions between aircraft are so classified only when both aircraft are occupied. This includes collisions wherein both aircraft are airborne (mid-air); 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.

SMALL FIXED-WING AIRCRAFT

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

LARGE FIXED-WING AIRCRAFT

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

ROTORCRAFT

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

ABBREVIATIONS

SFW - Small Fixed-Wing
LFW - Large Fixed-Wing
ROTOR - Rotorcraft
SE - Single Engine
ME - Multi Engine

Section I

GENERAL AVIATION ACCIDENTS

ALL CATEGORIES of AIRCRAFT

Section I

GENERAL AVIATION ACCIDENTS

ALL CATEGORIES of AIRCRAFT

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

1965 - 1966

TABLE I

	1965	1966
Total Accidents	5196	5712
Aircraft Involved	5242	5762
Injury Index		
Fatal	538	573
Serious	318	342
Minor	597	615
None	3743	4179
Unknown	0	3
Injuries a/		
Fatal	1029	1151
Serious	564	588
Minor	944	987
None	7552	8542
Unknown	0	3
Total Aboard	10,047	11,221
Aircraft Damage a/		
Destroyed	978	987
Substantial	4221	4738
Minor/None	37	37
Not Reported	6	0
Fire After Impact a/		
Fatal Accidents	159	141
Nonfatal Accidents	107	110
Active Aircraft (Est.) b/	95,442	104,706
Hours Flown (Est.) b/	16,733,000	21,023,000
Accident Rates Per 100,000 Hours Flown		
Total	31.05	27.17
Fatal	3.22	2.73

a/ Includes Military and Air Carrier aircraft when involved in collisions.

b/ Source: FAA

TABLE 2

ACCIDENTS, RATES, ACTIVE AIRCRAFT

ALL OPERATIONS

1966

	FIXED-WING					
	Single-Engine	Multi-Engine	Glider	Balloon	Blimp	Rotorcraft
ACCIDENTS.....	4774	599	31	3	1	309
AIRCRAFT INVOLVED a/	4811	601	32	3	1	311
INJURY INDEX						
Fatal.....	464	76	6	0	0	27
Serious.....	267	21	10	3	0	41
Minor.....	521	27	8	0	0	60
None.....	3519	475	7	0	1	181
Unknown.....	3	0	0	0	0	0
ACTIVE AIRCRAFT (est.) b/	88,659	13,548	841	34	2	1622
AIRCRAFT DAMAGE a/						
Destroyed	793	104	10	1	0	78
Substantial	3991	493	21	0	1	231
Minor/None	27	4	1	2	0	2
Unknown/Not Reported	0	0	0	0	0	0
HOURS FLOWN (est.) b/	16,148,000	4,315,000	68,000 c/d/			492,000
ACCIDENT RATES PER 100,000 HOURS						
Total	29.56	13.88	51.47			62.80
Fatal	2.87	1.76	8.82			5.49

a/ Excludes 1 military and 2 Air Carrier aircraft involved in collisions.

b/ Source: FAA

c/ Includes Gliders, Balloons and Blimps.

d/ Hours flown less than base index.

TABLE 3

TYPES OF AIRCRAFT INVOLVED IN ACCIDENTS
INJURY INDEX, DAMAGE, FIRE AFTER IMPACT
ALL OPERATIONS

1966

	SMALL FIXED-WING			LARGE FIXED-WING a/				
	Single Engine	Multi-Engine	Glider	Single Engine	Multi-Engine	Rotor	Balloons	Blimp
ACCIDENTS.....	4772	554	31	2	45	309	3	1
AIRCRAFT INVOLVED.....	4809	556	32	2	45	311	3	1
INJURY INDEX								
Fatal.....	464	67	6	0	9	27	0	0
Serious.....	267	17	10	0	4	41	3	0
Minor.....	520	23	8	1	4	60	0	0
None.....	3518	447	7	1	28	181	0	1
Unknown/Not Reported...	3	0	0	0	0	0	0	0
AIRCRAFT DAMAGE								
Destroyed.....	792	90	10	1	14	78	1	0
Substantial.....	3990	464	21	1	29	231	0	1
Minor/None.....	27	2	1	0	2	2	2	0
Unknown/Not Reported...	0	0	0	0	0	0	0	0
FIRE AFTER IMPACT								
Fatal Accidents.....	109	21	0	0	5	5	0	0
Nonfatal Accidents.....	80	8	0	1	1	20	0	0

a/ Excludes 1 military and 2 Air Carrier aircraft involved in collisions.

TABLE 4

ACCIDENTS, INJURIES, TOTAL ABOARD BY TYPE OF AIRCRAFT ALL OPERATIONS

1966

	SMALL FIXED-WING			LARGE FIXED-WING a/					
	Single Engine	Multi-Engine	Glider	Single Engine	Multi-Engine	Rotor	Balloon	Blimp	TOTAL
ACCIDENTS.....	4772	554	31	2	45	309	3	1	-
FATALITIES									
Pilot.....	436	61	6	0	6	22	0	0	531
Crew.....	24	13	1	0	3	1	0	0	42
Passenger.....	424	99	1	0	16	27	0	0	567
Other.....	5	0	0	0	2	2	0	0	9
Total.....	889	173	8	0	27	52	0	0	1149
SERIOUS INJURIES									
Pilot.....	247	20	10	0	5	33	3	0	318
Crew.....	18	1	0	0	2	4	0	0	25
Passengers.....	168	26	0	0	13	27	0	0	234
Other.....	9	0	0	0	1	1	0	0	11
Total.....	442	47	10	0	21	65	3	0	588
MINOR INJURIES									
Pilot.....	484	21	8	1	2	60	0	0	576
Crew.....	27	2	1	0	2	9	0	0	41
Passenger.....	297	13	1	0	5	36	0	0	352
Other.....	7	0	0	0	8	3	0	0	18
Total.....	815	36	10	1	17	108	0	0	987
NO INJURIES									
Pilot.....	3639	454	8	1	32	196	0	1	4331
Crew.....	254	87	0	0	42	20	0	1	404
Passenger.....	2825	740	1	0	80	135	0	0	3781
Other.....	8	2	0	0	1	1	0	0	12
Total.....	6726	1283	9	1	155	352	0	2	8528
INJURIES NOT REPORTED									
Pilot.....	3	0	0	0	0	0	0	0	3
Crew.....	0	0	0	0	0	0	0	0	0
Passengers.....	0	0	0	0	0	0	0	0	0
Other.....	0	0	0	0	0	0	0	0	0
Total.....	3	0	0	0	0	0	0	0	3
TOTAL ABOARD.....	8846	1537	37	2	208	570	3	2	11,205

a/ Excludes 1 military and 2 Air Carrier aircraft involved in collisions.

TABLE 5

ACCIDENTS, RATES, INJURY INDEX, DAMAGE BY KIND OF FLYING
ALL OPERATIONS
1966 a/

ACCIDENTS, INJURY INDEX, AIRCRAFT DAMAGE BY KIND OF FLYING	KIND OF FLYING								
		NON-COMMERCIAL				COMMERCIAL			
	INSTRUCTIONAL	PLEASURE	BUSINESS	CORPORATE	ALL OTHER	AERIAL APPLICATION	AIR TAXI	ALL OTHER	MISCELLANEOUS
ACCIDENTS	827	2469	752	98	607	323	217	100	341
HOURS FLOWN (THOUSANDS OF HRS.) b/	5264	6077	5500		NA	1038	1744	NA	NA
ACCIDENT RATES PER 100,000 HRS.									
Total Accidents	15.71	40.63	15.45		NA	31.12	12.44	NA	NA
Fatal Accidents	.68	5.36	1.45		NA	4.24	1.43	NA	NA
ACCIDENT INJURY INDEX									
Fatal	36	326	74	6	16	44	25	12	39
Serious	35	158	29	6	18	38	17	7	35
Minor	79	259	67	4	74	50	27	21	38
None	677	1726	582	82	499	191	148	60	226
Unknown/Not Reported	0	0	0	0	0	0	0	0	3
AIRCRAFT DAMAGE									
Destroyed	83	491	103	12	44	107	44	23	79
Substantial	746	1971	647	86	564	213	172	77	261
Minor	6	5	1	0	0	2	2	0	2
None	4	10	1	0	0	1	0	1	1
Unknown/Not Reported	0	0	0	0	0	0	0	0	0
TOTAL	839	2477	752	98	608	323	218	101	343

a/ Excludes 1 military and 2 Air Carrier aircraft involved in collisions.

b/ Source: FAA

TABLE 6

ACCIDENTS, INJURIES BY KIND OF FLYING
ALL OPERATIONS
1966 a/

		NON-COMMERCIAL				COMMERCIAL				
	INSTRUCTIONAL	PLEASURE	BUSINESS	CORPORATE	ALL OTHER	AERIAL APPLICATION	AIR TAXI	ALL OTHER	MISCELLANEOUS	TOTAL
Accidents	827	2469	752	98	607	323	217	100	341	-
Fatalities										
Pilot.....	34	299	68	4	14	40	24	11	37	531
Crew.....	17	12	5	3	0	0	1	0	4	42
Passenger.....	6	400	69	9	4	0	35	20	24	567
Other.....	0	1	2	0	0	4	0	1	1	9
Total.....	57	712	144	16	18	44	60	32	66	1149
Serious Injuries										
Pilot.....	26	152	27	7	19	36	12	7	32	318
Crew.....	19	3	0	1	0	0	1	1	0	25
Passenger.....	0	147	22	7	4	0	30	9	15	234
Other.....	2	4	0	0	0	2	2	0	1	11
Total.....	47	306	49	15	23	38	45	17	48	588
Minor Injuries										
Pilot.....	79	235	62	3	73	49	23	16	36	576
Crew.....	31	2	0	1	2	0	0	1	4	41
Passenger.....	1	230	40	12	8	1	30	15	15	352
Other.....	0	2	8	0	0	2	1	3	2	18
Total.....	111	469	110	16	83	52	54	35	57	987
No Injuries										
Pilot.....	700	1791	595	84	502	198	159	67	235	4331
Crew.....	278	14	7	24	10	0	23	9	39	404
Passenger.....	53	2316	515	167	75	2	400	59	194	3781
Other.....	2	1	0	1	2	4	1	1	0	12
Total.....	1033	4122	1117	276	589	204	583	136	468	8528
Injuries Unknown										
Pilot.....	0	0	0	0	0	0	0	0	0	0
Crew.....	0	0	0	0	0	0	0	0	0	0
Passenger.....	0	0	0	0	0	0	0	0	0	0
Other.....	0	0	0	0	0	0	0	0	0	0
Total.....	0	0	0	0	0	0	0	0	3	3
Total Aboard.....	1244	5601	1410	322	711	326	738	215	638	11,205

a/ Excludes 1 military and 2 Air Carrier aircraft involved in collisions.

TABLE 7

CAUSE/FACTOR TABLE

KIND OF FLYING
INSTRUCTIONAL
U. S. GENERAL AVIATION

1966

INVOLVES 827 TOTAL ACCIDENTS
INVOLVES 36 FATAL ACCIDENTS

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
PILOT	24 66.67	1 2.78	24 66.67	681 86.09	11 1.39	682 86.22	705 85.25	12 1.45	706 85.37
PERSONNEL	6 16.67	1 2.78	6 16.67	67 8.47	6 .76	73 9.23	73 8.83	7 .85	79 9.55
AIRFRAME	2 5.56	.00	2 5.56	1 .13	.00	1 .13	3 .36	.00	3 .36
LANDING GEAR	.00	.00	.00	34 4.29	2 .25	36 4.55	34 4.11	2 .24	36 4.35
POWERPLANT	.00	.00	.00	32 4.04	.00	32 4.04	32 3.86	.00	32 3.86
SYSTEMS	.00	1 2.78	1 2.78	5 .63	.00	5 .63	5 .60	1 .12	6 .72
INSTRUMENTS/EQUIPMENT AND ACCESSORIES	1 2.78	.00	1 2.78	.00	1 .13	1 .13	1 .12	1 .12	2 .24
ROTORCRAFT	.00	.00	.00	4 .51	.00	4 .51	4 .48	.00	4 .48
AIRPORTS/AIRWAYS/FACILITIES	.00	.00	.00	9 1.14	34 4.29	43 5.43	9 1.09	34 4.11	43 5.19
WEATHER	.00	5 13.89	5 13.89	26 3.28	69 8.71	93 11.74	26 3.14	74 8.94	98 11.84
TERRAIN	.00	.00	.00	4 .51	27 3.41	31 3.91	4 .49	27 3.26	31 3.74
MISCELLANEOUS	2 5.56	.00	2 5.56	14 1.77	1 .13	15 1.89	16 1.93	1 .12	17 2.05
UNDETERMINED	3 8.33	.00	3 8.33	.00	.00	.00	3 .36	.00	3 .36

* 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.

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

TABLE 8

CAUSE/FACTOR TABLE

KIND OF FLYING
NONCOMMERCIAL - PLEASURE
U. S. GENERAL AVIATION

1966

INVOLVES 2469 TOTAL ACCIDENTS
INVOLVES 326 FATAL ACCIDENTS

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
PILOT	264 80.98	6 1.84	264 80.98	1740 81.19	60 2.80	1743 81.33	2004 81.17	66 2.67	2007 81.29
PERSONNEL	18 5.52	3 .92	21 6.44	133 6.21	14 .65	148 6.91	151 6.12	17 .69	169 6.84
AIRFRAME	22 6.75	1 .31	23 7.06	5 .23		5 .23	27 1.09	1 .04	28 1.13
LANDING GEAR				136 6.35	44 2.05	178 8.31	136 5.51	44 1.78	178 7.21
POWERPLANT	20 6.13		20 6.13	151 7.05	10 .47	160 7.47	171 6.93	10 .41	180 7.29
SYSTEMS	1 .31		1 .31	25 1.17	13 .61	38 1.77	26 1.05	13 .53	39 1.58
INSTRUMENTS/EQUIPMENT AND ACCESSORIES	1 .31		1 .31	2 .09	2 .09	4 .19	3 .12	2 .08	5 .20
ROTORCRAFT	1 .31		1 .31	2 .09		2 .09	3 .12		3 .12
AIRPORTS/AIRWAYS/FACILITIES				32 1.49	118 5.51	149 6.95	32 1.30	118 4.78	149 6.03
WEATHER	4 1.23	104 31.90	108 33.13	50 2.33	268 12.51	312 14.56	54 2.19	372 15.07	420 17.01
TERRAIN	3 .92	15 4.60	18 5.52	13 .61	141 6.58	154 7.19	16 .65	156 6.32	172 6.97
MISCELLANEOUS	3 .92		3 .92	43 2.01	11 .51	54 2.52	46 1.86	11 .45	57 2.31
UNDETERMINED	26 7.98		26 7.98	5 .23		5 .23	31 1.26		31 1.26

* 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.

THE FIGURES OPPOSITE EACH CAUSAL CATEGORY REPPESENT THE NUMBER AND PERCENT OF ACCIDENTS IN WHICH THE PARTICULAR CAUSAL CATEGORY WAS IDENTIFIED.

TABLE 9

CAUSE/FACTOR TABLE

KIND OF FLYING
NONCOMMERCIAL - BUSINESS
U. S. GENERAL AVIATION

1966

INVOLVES 752 TOTAL ACCIDENTS
INVOLVES 74 FATAL ACCIDENTS

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
PILOT	59 79.73	2 2.70	60 81.08	517 76.25	17 2.51	520 76.70	576 76.60	19 2.53	580 77.13
PERSONNEL	2 2.70		2 2.70	44 6.49	6 .88	49 7.23	46 6.12	6 .80	51 6.78
AIRFRAME	4 5.41	.00	4 5.41	.00	1 .15	1 .15	4 .53	1 .13	5 .66
LANDING GEAR	.00	.00	.00	67 9.88	27 3.98	93 13.72	67 8.91	27 3.59	93 12.37
POWERPLANT	3 4.05	.00	3 4.05	45 6.64	3 .44	48 7.08	48 6.38	3 .40	51 6.78
SYSTEMS	.00	.00	.00	3 .44	6 .88	9 1.33	3 .40	6 .80	9 1.20
INSTRUMENTS/EQUIPMENT AND ACCESSORIES	.00	.00	.00	2 .29	.00	2 .29	2 .27	.00	2 .27
ROTORCRAFT	.00	.00	.00	1 .15	.00	1 .15	1 .13	.00	1 .13
AIRPORTS/AIRWAYS/FACILITIES	.00	1 1.35	1 1.35	10 1.47	45 6.64	54 7.96	10 1.33	46 6.12	55 7.31
WEATHER	2 2.70	33 44.59	35 47.30	20 2.95	91 13.42	111 16.37	22 2.93	124 16.49	146 19.41
TERRAIN	.00	5 6.76	5 6.76	3 .44	44 6.49	48 7.08	3 .40	49 6.52	53 7.05
MISCELLANEOUS	2 2.70	.00	2 2.70	12 1.77	4 .59	16 2.36	14 1.86	4 .53	18 2.39
UNDETERMINED	7 9.46	.00	7 9.46	3 .44	.00	3 .44	10 1.33	.00	10 1.33

* 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.

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

TABLE 10

CAUSE/FACTOR TABLE

KIND OF FLYING
NONCOMMERCIAL - CORPORATE
U. S. GENERAL AVIATION

1966

INVOLVES 98 TOTAL ACCIDENTS
INVOLVES 6 FATAL ACCIDENTS

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
PILOT	2 33.33	.00	2 33.33	50 54.35	2 2.17	50 54.35	52 53.06	2 2.04	52 53.06
PERSONNEL	1 16.67	.00	1 16.67	11 11.96	.00	11 11.96	12 12.24	.00	12 12.24
AIRFRAME	.00	.00	.00	.00	.00	.00	.00	.00	.00
LANDING GEAR	.00	.00	.00	17 18.48	2 2.17	19 20.65	17 17.35	2 2.04	19 19.39
POWERPLANT	2 33.33	.00	2 33.33	11 11.96	1 1.09	12 13.04	13 13.27	1 1.02	14 14.29
SYSTEMS	.00	.00	.00	1 1.09	.00	1 1.09	1 1.02	.00	1 1.02
INSTRUMENTS/EQUIPMENT AND ACCESSORIES	.00	.00	.00	.00	.00	.00	.00	.00	.00
ROTORCRAFT	1 16.67	.00	1 16.67	.00	.00	.00	1 1.02	.00	1 1.02
AIRPORTS/AIRWAYS/FACILITIES	.00	.00	.00	5 5.43	10 10.87	15 16.30	5 5.10	10 10.20	15 15.31
WEATHER	.00	.00	.00	2 2.17	8 8.70	10 10.87	2 2.04	8 8.16	10 10.20
TERRAIN	.00	.00	.00	1 1.09	1 1.09	2 2.17	1 1.02	1 1.02	2 2.04
MISCELLANEOUS	.00	.00	.00	7 7.61	1 1.09	8 8.70	7 7.14	1 1.02	8 8.16
UNDETERMINED	1 16.67	.00	1 16.67	1 1.09	.00	1 1.09	2 2.04	.00	2 2.04

* 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.

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

TABLE 11

CAUSE/FACTOR TABLE

KIND OF FLYING
COMMERCIAL - AERIAL APPLICATION
U. S. GENERAL AVIATION

1966

INVOLVES 323 TOTAL ACCIDENTS
INVOLVES 44 FATAL ACCIDENTS

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
PILOT	40 90.91	1 2.27	40 90.91	207 74.19	6 2.15	207 74.19	247 76.47	7 2.17	247 76.47
PERSONNEL	5 11.36	.00	5 11.36	22 7.89	3 1.08	24 8.60	27 8.36	3 .93	29 8.98
AIRFRAME	.00	.00	.00	1 .36	.00	1 .36	1 .31	.00	1 .31
LANDING GEAR	.00	.00	.00	9 3.23	.00	9 3.23	9 2.79	.00	9 2.79
POWERPLANT	1 2.27	.00	1 2.27	45 16.13	4 1.43	48 17.20	46 14.24	4 1.24	49 15.17
SYSTEMS	.00	.00	.00	.00	.00	.00	.00	.00	.00
INSTRUMENTS/EQUIPMENT AND ACCESSORIES	.00	.00	.00	.00	1 .36	1 .36	.00	1 .31	1 .31
ROTORCRAFT	.00	.00	.00	3 1.08	2 .72	5 1.79	3 .93	2 .62	5 1.55
AIRPORTS/AIRWAYS/FACILITIES	.00	.00	.00	.00	5 1.79	5 1.79	.00	5 1.55	5 1.55
WEATHER	.00	1 2.27	1 2.27	1 .36	21 7.53	22 7.89	1 .31	22 6.81	23 7.12
TERRAIN	.00	1 2.27	1 2.27	3 1.08	48 17.20	51 18.28	3 .93	49 15.17	52 16.10
MISCELLANEOUS	1 2.27	.00	1 2.27	16 5.73	3 1.08	19 6.81	17 5.26	3 .93	20 6.19
UNDETERMINED	2 4.55	.00	2 4.55	.00	.00	.00	2 .62	.00	2 .62

* 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.

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

TABLE 12

CAUSE/FACTOR TABLE

KIND OF FLYING
COMMERCIAL - AIR TAXI
U. S. GENERAL AVIATION

1966

INVOLVES 217 TOTAL ACCIDENTS
INVOLVES 25 FATAL ACCIDENTS

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
PILOT	18 72.00	.00	18 72.00	143 74.48	6 3.13	143 74.48	161 74.19	6 2.76	161 74.1
PERSONNEL	2 8.00	3 12.00	5 20.00	24 12.50	1 .52	25 13.02	26 11.98	4 1.84	30 13.8
AIRFRAME	3 12.00	.00	3 12.00	.00	.00	.00	3 1.38	.00	3 1.3
LANDING GEAR	.00	.00	.00	30 15.63	9 4.69	38 19.79	30 13.82	9 4.15	38 17.5
POWERPLANT	3 12.00	.00	3 12.00	13 6.77	1 .52	14 7.29	16 7.37	1 .46	17 7.8
SYSTEMS	.00	.00	.00	4 2.08	1 .52	5 2.60	4 1.84	1 .46	5 2.3
INSTRUMENTS/EQUIPMENT AND ACCESSORIES	.00	.00	.00	1 .52	.00	1 .52	1 .46	.00	1 .4
ROTORCRAFT	.00	.00	.00	3 1.56	.00	3 1.56	3 1.38	.00	3 1.3
AIRPORTS/AIRWAYS/FACILITIES	.00	.00	.00	3 1.56	14 7.29	17 8.85	3 1.38	14 6.45	17 7.8
WEATHER	2 8.00	10 40.00	12 48.00	3 1.56	28 14.58	31 16.15	5 2.30	38 17.51	43 19.8
TERRAIN	.00	4 16.00	4 16.00	3 1.56	14 7.29	17 8.85	3 1.33	18 8.29	21 9.6
MISCELLANEOUS	.00	.00	.00	5 2.60	2 1.04	7 3.65	5 2.30	2 .92	7 3.2
UNDETERMINED	3 12.00	.00	3 12.00	.00	.00	.00	3 1.38	.00	3 1.3

* 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.

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

TABLE 13

LOCATION OF ACCIDENTS BY STATES

ALL OPERATIONS

1966

LOCATION	NUMBER OF ACCIDENTS INJURY INDEX					AIRCRAFT DAMAGE a/		
	Fatal	Serious	Minor None	Unknown	Total	Dest.	Subst.	Minor/ None
ALABAMA	10	4	54	0	68	14	56	0
ALASKA	19	9	136	0	164	30	134	1
ARIZONA	8	9	109	2	128	19	108	2
ARKANSAS	12	9	62	0	83	18	64	1
CALIFORNIA	77	47	601	0	725	131	597	6
COLORADO	16	5	120	0	141	22	119	0
CONNECTICUT	5	3	40	0	48	7	42	0
DELAWARE	0	0	8	0	8	0	8	0
DISTRICT OF COLUMBIA	0	0	4	0	4	0	4	0
FLORIDA	20	14	184	0	218	30	188	1
GEORGIA	11	12	87	0	110	25	86	0
HAWAII	4	1	17	0	22	4	18	0
IDAHO	10	5	46	0	61	15	45	1
ILLINOIS	20	10	195	0	225	38	193	3
INDIANA	11	8	96	0	115	18	99	0
IOWA	7	8	93	0	108	13	94	1
KANSAS	8	6	116	1	131	19	112	0
KENTUCKY	7	1	23	0	31	9	22	0
LOUISIANA	10	8	86	0	104	24	82	0
MAINE	4	0	29	0	33	5	28	0
MARYLAND	5	4	58	0	67	10	57	1
MASSACHUSETTS	6	3	67	0	76	9	67	0
MICHIGAN	18	8	138	0	164	24	141	1
MINNESOTA	13	8	96	0	117	17	101	1
MISSISSIPPI	6	2	51	0	59	14	45	0
MISSOURI	8	12	131	0	151	23	128	0
MONTANA	7	4	75	0	86	14	71	1
NEBRASKA	8	3	58	0	69	11	58	0
NEVADA	10	6	62	0	78	12	67	1
NEW HAMPSHIRE	2	0	15	0	17	3	14	0
NEW JERSEY	7	3	115	0	125	15	111	1
NEW MEXICO	4	9	84	0	97	15	81	1
NEW YORK	13	11	179	0	203	26	179	1
NORTH CAROLINA	15	1	61	0	77	17	60	0
NORTH DAKOTA	2	3	44	0	49	5	44	0
OHIO	17	7	166	0	190	30	163	1
OKLAHOMA	6	8	85	0	99	13	85	1
OREGON	13	7	99	0	119	29	90	0
PENNSYLVANIA	17	7	136	0	160	27	133	1
RHODE ISLAND	2	2	11	0	15	6	10	0
SOUTH CAROLINA	7	3	46	0	56	10	45	1
SOUTH DAKOTA	4	4	33	0	41	8	33	0
TENNESSEE	12	7	38	0	57	16	40	1
TEXAS	37	25	355	0	417	65	349	4
UTAH	8	3	51	0	62	11	51	0
VERMONT	2	0	7	0	9	2	7	0
VIRGINIA	7	6	72	0	85	18	67	0
WASHINGTON	15	7	117	0	139	23	115	2
WEST VIRGINIA	6	1	17	0	24	8	16	0
WISCONSIN	4	11	72	0	87	16	71	0
WYOMING	1	6	43	0	50	2	48	0
U. S. TERR./POSSESSIONS	1	0	24	0	25	3	22	1
OUTSIDE U. S. A.	17	1	81	0	99	30	68	1
UNKNOWN	14	1	1	0	16	14	2	0
GRAND TOTAL	573	342	4794	3	5712	987	4738	37

a/ Includes other aircraft involved in collisions.

SELECTED ACCIDENT DATA a/

ALL OPERATIONS

1966

TABLE 14

PILOT AGE	ACCIDENTS TOTAL	FATAL	NONFATAL
Under 20 years	146	9	137
20-24	593	55	538
25-29	833	72	761
30-34	857	79	778
35-39	883	75	808
40-44	968	104	864
45-49	709	91	618
50-59	604	64	540
60-64	61	4	57
65-70	31	4	27
Over 70	9	1	8
Unknown/not reported	68	26	42
Total	5762	584	5178

TABLE 15

PILOT CERTIFICATE	ACCIDENTS TOTAL	FATAL	NONFATAL
Student	1151	70	1081
Private	2380	262	2118
Commercial	1945	199	1746
Airline Transport	189	22	167
Other	10	1	9
None	35	8	27
Unknown/not reported	52	22	30
Total	5762	584	5178

TABLE 16

TOTAL PILOT TIME	ACCIDENTS TOTAL	FATAL	NONFATAL
1- 25 Hours	411	11	400
26- 50 Hours	412	19	393
51- 100 Hours	588	51	537
101- 300 Hours	1047	124	923
301- 500 Hours	484	54	430
501- 1000 Hours	638	67	571
1001- 3000 Hours	974	95	879
3001- 5000 Hours	392	35	357
Over- 5000 Hours	300	36	264
Over- 8000 Hours	134	14	120
Over-10,000 Hours	254	28	226
Unknown/not reported	128	50	78
Total	5762	584	5178

TABLE 17

PILOT TIME IN TYPE AIRCRAFT	ACCIDENTS TOTAL	FATAL	NONFATAL
5- or less Hours	363	27	336
6- 25 Hours	1296	84	1212
26- 50 Hours	831	59	772
51- 100 Hours	778	92	686
101- 300 Hours	1029	91	938
301- 500 Hours	385	28	357
501- 1000 Hours	362	25	337
1001- 2000 Hours	233	21	212
2001- 3000 Hours	82	6	76
Over- 3000 Hours	100	6	94
Unknown/not reported	303	145	158
Total	5762	584	5178

a/ Includes the records of pilots of other aircraft involved in collisions.

SELECTED ACCIDENT DATA

ALL OPERATIONS

1966

TABLE 18

MONTH OF OCCURRENCE	ACCIDENTS TOTAL	FATAL	NONFATAL
January	318	30	288
February	402	39	363
March	460	40	420
April	444	47	397
May	589	60	529
June	528	38	490
July	708	77	631
August	584	63	521
September	481	60	421
October	466	48	418
November	388	37	351
December	344	34	310
TOTAL	5712	573	5139

TABLE 19

TIME OF OCCURRENCE	ACCIDENTS TOTAL	FATAL	NONFATAL
0100-0159	15	4	11
0200-0159	16	5	11
0300-0359	16	3	13
0400-0459	14	4	10
0500-0559	36	12	24
0600-0659	80	18	62
0700-0759	168	15	153
0800-0859	241	25	216
0900-0959	282	20	262
1000-1059	422	37	385
1100-1159	497	29	468
1200-1259	411	37	374
1300-1359	427	36	391
1400-1459	502	34	468
1500-1559	531	33	498
1600-1659	552	44	508
1700-1759	485	34	451
1800-1859	413	43	370
1900-1959	231	33	198
2000-2059	138	26	112
2100-2159	65	11	54
2200-2259	58	12	46
2300-2359	36	10	26
0000-0059	37	16	21
Unknown/Not Reported	39	32	7
TOTAL	5712	573	5139

TABLE 20

CONDITIONS OF LIGHT	ACCIDENTS TOTAL	FATAL	NONFATAL
Dawn	32	5	27
Daylight	4919	413	4506
Dusk (twilight)	196	18	178
Night (dark)	500	121	379
Night (moonlight-bright)	30	6	24
Unknown/Not Reported	35	10	25
TOTAL	5712	573	5139

SELECTED ACCIDENT DATA

ALL OPERATIONS

1966

TABLE 21

TYPE OF WEATHER CONDITIONS	ACCIDENTS TOTAL	FATAL	NONFATAL
VFR	5350	394	4956
IFR	280	150	130
Below Minimums	13	3	10
Unknown/Not Reported	69	26	43
TOTAL	5712	573	5139

TABLE 22

AIRPORT PROXIMITY	ACCIDENTS TOTAL	FATAL	NONFATAL
On Airport	3392	49	3343
On Seaplane Base	22	0	22
On Heliport	12	2	10
On Barge, Ship/Platform (rotor only)	7	1	6
In Traffic Pattern	240	43	197
Within 1/4 Mile	178	23	155
Within 1/2 Mile	76	22	54
Within 3/4 Mile	20	6	14
Within 1 Mile	72	20	52
Within 2 Miles	143	50	93
Within 3 Miles	106	23	83
Within 4 Miles	94	27	67
Within 5 Miles	28	9	19
Beyond 5 Miles	1268	276	992
Unknown/Not Reported	54	22	32
TOTAL	5712	573	5139

COLLISIONS BETWEEN AIRCRAFT
U. S. GENERAL AVIATION
1966

TABLE 23

Total Collisions

By Type of Aircraft	Injury Index Fatal	Serious	Minor	None	Total Collisions
SFW - SE vs. SFE - SE.....	9	5	5	18	37
SFW - SE vs. SFW - ME.....	0	0	1	4	5
SFW - ME vs. SFW - ME.....	0	0	1	1	2
SFW - ME vs. Air Carrier....	1	0	0	1	2
SFW - SE vs. Military.....	0	0	0	1	1
Glider vs. Glider.....	0	1	0	0	1
Rotor vs. Rotor.....	1	1	0	0	2
Total.....	11	7	7	25	50

TABLE 24

Total Aircraft Involved	Aircraft Damage Destroyed	Substantial	Minor	None	Total Aircraft
Single Engine - SFW.....	25	47	8	0	80
Multi-Engine - SFW.....	1	9	1	0	11
Glider.....	0	2	0	0	2
Rotorcraft.....	3	1	0	0	4
Military.....	0	1	0	0	1
Air Carrier.....	1	0	1	0	2
Total.....	30	60	10	0	100

TABLE 25

Conditions of light	Injury Index Fatal	Serious	Minor	None	Total
Dawn.....	0	0	0	0	0
Daylight.....	11	6	7	22	46
Dusk.....	0	1	0	2	3
Night.....	0	0	0	1	1

TABLE 26

Type of Weather Conditions	Injury Index Fatal	Serious	Minor	None	Total
VFR.....	10	7	7	25	49
IFR.....	1	0	0	0	1

TABLE 27

Airport Proximity	Injury Index Fatal	Serious	Minor	None	Total
On Airport.....	0	5	7	19	31
Traffic Pattern.....	3	1	0	4	8
Within 3/4 mile.....	1	0	0	0	1
Within 1 mile.....	2	0	0	0	2
Within 2 miles.....	0	1	0	0	1
Within 5 miles.....	1	0	0	0	1
Beyond 5 miles.....	4	0	0	2	6

TABLE 28

COLLISIONS BETWEEN AIRCRAFT
U. S. GENERAL AVIATION
1966

Time of Occurrence	Injury Index				
	Fatal	Serious	Minor	None	Total
(Local Standard Time)					
0100-0159	0	0	0	0	0
0200-0259	0	0	0	0	0
0300-0359	0	0	0	0	0
0400-0459	0	0	0	0	0
0500-0559	0	0	0	0	0
0600-0659	0	0	1	1	2
0700-0759	0	1	0	2	3
0800-0859	1	0	0	0	1
0900-0959	0	1	0	0	1
1000-1059	1	0	1	6	8
1100-1159	0	1	1	2	4
1200-1259	2	0	0	4	6
1300-1359	2	0	0	0	2
1400-1459	0	1	0	2	3
1500-1559	1	1	0	2	4
1600-1659	3	0	3	1	7
1700-1759	0	1	0	1	2
1800-1859	1	0	1	2	4
1900-1959	0	1	0	0	1
2000-2059	0	0	0	1	1
2100-2159	0	0	0	0	0
2200-2259	0	0	0	1	1
2300-2359	0	0	0	0	0
0000-0059	0	0	0	0	0
TOTAL	11	7	7	25	50

TABLE 29

COLLISIONS BETWEEN AIRCRAFT
U. S. GENERAL AVIATION
1966

LOCATION	TOTAL	INJURIES				AIRCRAFT DAMAGE			
		Fatal	Serious	Minor	None	Dest.	Subst.	Minor	None
State									
Alabama.....	2	0	0	3	2	2	2	0	0
Alaska.....	1	2	0	0	2	1	1	0	0
Arizona.....	1	0	0	0	11	0	1	1	0
California.....	9	12	1	1	23	5	12	1	0
Connecticut.....	1	2	0	0	1	1	1	0	0
Florida.....	1	0	0	0	6	0	1	1	0
Georgia.....	1	0	1	0	2	1	1	0	0
Illinois.....	9	5	1	3	27	4	12	2	0
Indiana.....	2	3	0	0	3	2	2	0	0
Louisiana.....	2	2	3	0	12	3	1	0	0
Maryland.....	1	0	1	1	0	2	0	0	0
Michigan.....	2	0	1	2	3	2	2	0	0
Minnesota.....	2	0	0	2	3	0	3	1	0
Nevada.....	2	0	1	0	8	0	4	0	0
New Jersey.....	2	0	0	0	8	0	3	1	0
New York.....	3	3	0	0	8	2	3	1	0
Ohio.....	4	1	1	0	16	3	4	1	0
Pennsylvania.....	1	0	0	0	3	0	2	0	0
Rhode Island.....	1	3	0	0	0	2	0	0	0
Texas.....	1	0	0	0	5	0	2	0	0
Washington.....	1	0	0	1	3	0	2	0	0
St. Croix, Virgin Islands	1	0	0	1	8	0	1	1	0
TOTAL.....	50	33	10	14	154	30	60	10	0

TABLE 30

COLLISIONS BETWEEN AIRCRAFT

U. S. GENERAL AVIATION

1966

	Collisions Between Aircraft		
	Both in Flight	One Airborne	Both on Ground
ACCIDENTS			
Total	27	8	15
Fatal	11	0	0
AIRCRAFT INVOLVED	54	16	30
Fatalities			
Pilot	18	0	0
Crew	2	0	0
Passengers	13	0	0
Other	0	0	0
Total	33	0	0
Serious Injuries			
Pilot	4	2	0
Crew	0	0	1
Passengers	3	0	0
Other	0	0	0
Total	7	2	1
Minor Injuries			
Pilot	7	1	2
Crew	2	1	1
Passengers	0	0	0
Other	0	0	0
Total	9	2	3
No Injuries			
Pilot	25	13	28
Crew	15	3	15
Passengers	24	6	25
Other	0	0	0
Total	64	22	68

TABLE 31

TYPE OF ACCIDENT VS INJURY INDEX AND AIRCRAFT DAMAGE

ALL OPERATIONS

1966

TYPE OF ACCIDENT	INJURY INDEX						AIRCRAFT DAMAGE				
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN/ NOT REPORTED	TOTAL	DESTROYED	SUBSTANTIAL	MINOR	NONE	UNKNOWN/ NOT REPORTED
Ground/waterloop/swerve	2	7	48	830	0	887	22	865	0	0	0
Dragged wingtip, pod, or float	0	0	1	5	0	6	0	6	0	0	0
Wheels-up landing	0	0	1	422	0	423	1	422	0	0	0
Wheels-down landing in water	0	0	0	2	0	2	0	2	0	0	0
Gear collapsed	0	0	11	222	1	234	0	234	0	0	0
Gear retracted	1	0	0	168	0	169	1	168	0	0	0
Hard landing	2	4	24	412	0	442	13	429	0	0	0
Nose over/down	0	4	10	179	0	193	5	188	0	0	0
Roll over	1	2	2	4	0	9	1	8	0	0	0
Overshoot	6	10	38	275	1	330	22	308	0	0	0
Undershoot	10	11	33	144	0	198	24	174	0	0	0
Collision with aircraft a/											
Both in flight	21	8	5	18	0	52	24	24	4	0	0
One airborne	0	4	4	8	0	16	2	13	1	0	0
Both on ground	0	2	4	23	0	29	3	21	5	0	0
Collision with ground/water											
Controlled	55	23	31	38	0	147	85	62	0	0	0
Uncontrolled	94	13	9	6	0	122	108	14	0	0	0
Collided with											
Wires/poles	34	25	38	97	0	194	63	131	0	0	0
Trees	48	19	13	62	0	142	72	70	0	0	0
Residence (s)	0	2	0	0	0	2	1	1	0	0	0
Other buildings	1	0	1	21	0	23	2	21	0	0	0
Fence fenceposts	0	0	6	69	0	75	6	69	0	0	0
Electronic towers	1	0	0	1	0	2	1	1	0	0	0
Runway or approach lights	0	0	0	7	0	7	0	7	0	0	0
Airport hazard	0	0	1	8	0	9	0	9	0	0	0
Animals	0	0	1	9	0	10	0	10	0	0	0
Crop	1	2	1	17	0	21	6	15	0	0	0
Flagman, loader	3	1	0	0	0	4	0	1	2	1	0
Ditches	0	2	5	53	1	61	1	60	0	0	0
Snowbank	0	0	0	23	0	23	0	23	0	0	0
Parked aircraft (unattended, engines not running)	0	0	1	49	0	50	0	49	0	1	0
Automobile	0	1	3	19	0	23	0	23	0	0	0
Dirt bank	0	0	2	24	0	26	0	26	0	0	0
Other	2	5	15	127	0	149	6	142	1	0	0
Bird strike (collision with birds)	1	0	0	13	0	14	1	13	0	0	0
Stall	58	9	8	10	0	85	65	20	0	0	0
Spin	68	31	7	5	0	111	87	23	1	0	0
Spiral	8	9	5	8	0	30	18	12	0	0	0
Mush	8	25	62	173	0	268	61	207	0	0	0
Fire or explosion											
In flight	6	1	5	9	0	21	11	10	0	0	0
On ground	0	0	0	5	0	5	1	4	0	0	0
Airframe failure											
In flight	46	2	2	7	0	57	47	9	1	0	0
On ground	0	0	0	2	0	2	0	2	0	0	0
Engine tearaway	1	0	0	1	0	2	1	1	0	0	0
Engine failure or malfunction	59	102	205	548	0	914	172	742	0	0	0
Propeller/rotor failure	0	0	0	1	0	1	0	1	0	0	0
Propeller	2	1	3	17	0	23	6	17	0	0	0
Tail rotor	2	1	3	14	0	20	3	17	0	0	0
Main rotor	2	0	1	1	0	4	2	2	0	0	0
Propeller/rotor accident to person	7	12	0	0	0	19	0	0	4	15	0
Jet intake/exhaust acc. to person	0	0	0	0	0	0	0	0	0	0	0
Propeller/jet/rotor blast	0	0	0	5	0	5	0	5	0	0	0
Turbulence	2	4	5	3	0	14	5	9	0	0	0
Hail damage to aircraft	0	0	0	1	0	1	0	1	0	0	0
Lightning strike	0	0	0	0	0	0	0	0	0	0	0
Evasive maneuver	0	0	0	1	0	1	0	1	0	0	0
Uncontrolled altitude deviations	0	0	0	0	0	0	0	0	0	0	0
Ditching	0	0	1	0	0	1	1	0	0	0	0
Missing aircraft, not recovered	18	0	0	1	0	19	18	1	0	0	0
Other/Miscellaneous	3	6	7	34	0	50	8	41	0	1	0
Undetermined	11	1	0	3	0	15	11	4	0	0	0

a/ Includes both aircraft involved in collisions.

Table 32

FIRST ACCIDENT TYPE vs. SECOND

U.S. GENERAL AVIATION – ALL OP

1966

SE

FIRST TYPE OF ACCIDENT	TOTAL FIRST TYPES	Ground/water loop/swerve	Dragged wingtip, pod, or float	Wheels-up landing	Wheels-down landing in water	Gear collapsed	Gear retracted	Hard landing	Nose over/down	Roll over	Overshoot	Undershoot	Collision with aircraft: Both in flight	Collision with aircraft: One airborne	Collision with aircraft: Both on ground	Collision with ground/water: Controlled	Collision with ground/water: Uncontrolled	Collided wit: Wires/poles	Collided wit: Trees	Collided wit: Residence(s)	Collided wit: Other buildings	Collided wit: Fence, fenceposts	Collided wit: Electronic towers	Collided wit: Runway or approach lights	Collided wit: Airport hazard	Collided wit: Animals	Collided wit: Crop	Collided wit: Flagman, loader	Collided wit: Ditches	Collided wit: Snow
Ground/water loop/swerve	887					283			180	1					1	2	1	3	26		8	38		16			5		79	70
Dragged wingtip, pod, or float	6								1	1									1											
Wheels-up landing	423								1																					
Wheels-down landing in water	2								2																					
Gear collapsed	234								42	1																				
Gear retracted	169			1		1			3																					
Hard landing	442	26				261	4		19	5							1		3			1								
Nose over/down	193																													1
Roll over	9																													
Overshoot	330	18				59			32									5	20		4	48					2		71	5
Undershoot	198	1				50		8	10		1					2		22	16			16		2	1		2		14	12
Collision with aircraft a/																														
Both in flight	52			1					2								3													
One airborne	16																													
Both on ground	29																													
Collision with ground/water																														
Controlled	147					6		1	5								1	1												
Uncontrolled	122									1																				
Collided with																														
Wires/poles	194	1		1		1		2	1											1		1							1	
Trees	142	1		1		2		1		1							3	1												
Residence(s)	2																													
Other buildings	23																													
Fence, fenceposts	75					4		1	6									1				1								
Electronic towers	2				1																									
Runway or approach lights	7								1																					
Airport hazard	9					3			1																					
Animals	10																													
Crop	21					1			8									1												
Flagman, loader	4					1																								
Ditches	61					21			3																					
Snowbank	23					6			5	1																				
Parked aircraft (unattended, engines not running)	50																													
Automobile	23					3																								
Dirt bank	26					5			2													1								
Other	149	3		1		45			17	2							1													
Bird strike (collision with birds)	14							1	1							1			1			1							3	
Stall	85			1												2														
Spin	111								1							1	2		1											
Spiral	30																													
Mush	268			1		2		3	1							1	1	1	5	1		1								
Fire or explosion																														
In flight	21			2				1								1	2		1	1									1	
On ground	5																													
Airframe failure																														
In flight	57					1										1	47													
On ground	2																													
Engine tearaway	2			1													1													
Engine failure or malfunction	914	11		67		166	1	82	121	8	9	9	2			15	8	38	132	1	2	45					1		42	2
Propeller/rotor failure																														
Propeller	23			4		2			5													1								
Tail rotor	20					1		5		1							3	1		1		1					2		1	
Main rotor	4																3													
Propeller/rotor acc. to person	19																													
Jet intake/exhaust acc. to person	0																													
Propeller/jet/rotor blast	5					1			1																					
Turbulence	14							2									8										1		1	
Hail damage to aircraft	1																													
Lightning strike	0																													
Evasive maneuver	1																		1											
Uncontrolled altitude deviations	0																													
Ditching	1																													
Missing aircraft, not recovered	19																													
Other/miscellaneous	50	1		3		1		2	3	1							9	1	1			1								
Undetermined	15																													
TOTAL SECOND ACCIDENT TYPE	2993	62	0	84	0	926	6	109	474	23	10	9	2	0	1	26	94	75	208	5	14	155	0	18	1	0	13	0	213	90	2
TOTAL FIRST ACCIDENT TYPE	5762	887	6	423	2	234	169	442	193	9	330	198	52	16	29	147	122	194	142	2	23	75	2	7	9	10	21	4	61	23	5
TOTAL TYPES	8755	949	6	507	2	1160	175	551	667	32	340	207	54	16	30	173	216	269	350	7	37	230	2	25	10	10	34	4	274	113	7

a/ Includes both aircraft involved in collisions.

… VS. SECOND ACCIDENT TYPE

…ATION – ALL OPERATIONS

… 1966

Row	Collided with: Airport hazard	Collided with: Animals	Crop	Flagman, loader	Ditches	Snowbank	Parked aircraft (unattended, engines not running)	Automobile	Dirt bank	Other	Bird strike (collision with birds)	Stall	Spin	Spiral	Mush	Fire or explosion: In flight	Fire or explosion: On ground	Airframe failure: In flight	Airframe failure: On ground	Engine tearaway	Engine failure or malfunction	Propeller/rotor failure	Propeller	Tail rotor	Main rotor	Propeller/rotor acc. to person	Jet intake/exhaust acc. to person	Propeller/jet/rotor blast	Turbulence	Hail damage to aircraft	Lightning strike	Evasive maneuver	Uncontrolled altitude deviations	Ditching	Missing aircraft, not recovered	Other/miscellaneous	Undetermined
1			5		79	70	16		33	24		1			5																						
2																																					
3										1																											
4																																					
5									1																												
6													1																							1	
7						1	2		1	2		1		1	1									1													
8							1																														
9							1																			1											
10			2		71	5	1	1	29	16		3	1		10						1																
11	[illegible]		2		14	12	1	4	20	4		1		1	7																						
12																																					
13																							1														
14																																					
15																																					
16																																					
17																																		1			
18																																					
19																																					
20					1		1			1																										1	
21																																					
22																																					
23										1																											
24										1					1																						
25																																					
26									1																												
27																																					
28																																					
29															1																						
30																																					
31																																					
32							1																														
33																																					
34																																					
35																																					
36					3				1										1																		
37																																					
38																																					
39																																					
40																																					
41										1																								1			
42																																					
43					1												1	1			1													2			
44																																					
45																																					
46												1	1																								
47																																					
48																																					
49			1		42	2		6	14	24		23	17	3	29	3	1		1				1					1						25		2	1
50																																					
51			2		1							1	1							2														1			
52																																					
53													1																								
54																																					
55																																					
56																																					
57			1		1																																
58																																					
59																																					
60																																					
61																																					
62																																					
63																																					
64																		1																			
65																																					
Total 1		0	13	0	213	90	24	11	100	75	0	31	22	5	54	3	2	1	3	2	2	0	2	1	0	1	0	1	0	0	0	0	0	30	0	4	1
Total 2		10	21	4	61	23	50	23	26	149	14	85	111	30	268	21	5	57	2	2	914	1	23	20	4	19	0	5	14	1	0	1	0	1	19	50	15
Total 3		10	34	4	274	113	74	34	126	224	14	116	133	35	322	24	7	58	5	4	916	1	25	21	4	20	0	6	14	1	0	1	0	31	19	54	16

GPO 928-196

TABLE 33

CAUSE/FACTOR TABLE

U. S. GENERAL AVIATION
ALL OPERATIONS

1966

INVOLVES 5712 TOTAL ACCIDENTS
INVOLVES 573 FATAL ACCIDENTS

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
PILOT	458 79.93	13 2.27	459 80.10	4115 80.07	120 2.34	4122 80.21	4573 80.06	133 2.33	4581 80.20
PERSONNEL	40 6.98	8 1.40	47 8.20	373 7.26	39 .76	411 8.00	413 7.23	47 .82	458 8.02
AIRFRAME	37 6.47	1 .17	38 6.63	7 .14	1 .02	8 .16	44 .77	2 .04	46 .81
LANDING GEAR	 .00	 .00	 .00	341 6.64	94 1.83	430 8.37	341 5.97	94 1.65	430 7.53
POWERPLANT	33 5.76	1 .17	34 5.93	366 7.12	23 .45	387 7.53	399 6.99	24 .42	421 7.37
SYSTEMS	2 .35	2 .35	4 .70	44 .86	22 .43	66 1.28	46 .81	24 .42	70 1.23
INSTRUMENTS/EQUIPMENT AND ACCESSORIES	2 .35	 .00	2 .35	9 .18	8 .16	17 .33	11 .19	8 .14	19 .33
ROTORCRAFT	4 .70	 .00	4 .70	22 .43	4 .08	26 .51	26 .46	4 .07	30 .53
AIRPORTS/AIRWAYS/FACILITIES	 .00	1 .17	1 .17	62 1.21	267 5.20	327 6.36	62 1.09	268 4.69	328 5.74
WEATHER	9 1.57	165 28.80	174 30.37	133 2.59	586 11.40	706 13.74	142 2.49	751 13.15	880 15.41
TERRAIN	4 .70	27 4.71	31 5.41	35 .68	353 6.87	389 7.57	39 .68	380 6.65	420 7.35
MISCELLANEOUS	8 1.40	 .00	8 1.40	129 2.51	26 .51	155 3.02	137 2.40	26 .46	163 2.85
UNDETERMINED	45 7.85	 .00	45 7.85	18 .35	 .00	18 .35	63 1.10	 .00	63 1.10

* 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.

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

TABLE 33 (CONT'D)

CAUSE/FACTOR TABLE

U. S. GENERAL AVIATION
ALL OPERATIONS

1966

INVOLVES 5712 TOTAL ACCIDENTS
INVOLVES 573 FATAL ACCIDENTS

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
PILOT									
PILOT IN COMMAND	3		3	23	2	25	26	2	28
ATTEMPTED OPERATION W/KNOWN DEFICIENCIES IN EQUIPMENT	11		11	26	9	35	37	9	46
ATTEMPTED OPERATION BEYOND EXPERIENCE/ABILITY LEVEL	8	2	10	46	4	50	54	6	60
BECAME LOST/DISORIENTED	139		139	106	4	110	245	4	249
CONTINUED VFR FLIGHT INTO ADVERSE WEATHER CONDITIONS	3		3	4		4	7		7
CONTINUED INTO KNOWN AREA OF SEVERE TURBULENCE				43	1	44	43	1	44
DELAYED ACTION IN ABORTING TAKEOFF	3		3	49	1	50	52	1	53
DELAYED IN INITIATING GO-AROUND	13	1	14	46	10	56	59	11	70
DIVERTED ATTENTION FROM OPERATION OF AIRCRAFT	10		10	6		6	16		16
EXCEEDED DESIGN STRESS LIMITS OF AIRCRAFT				212		212	212		212
FAILED TO EXTEND LANDING GEAR	1		1	20		20	21		21
RETRACTED GEAR PREMATURELY				103		103	103		103
INADVERTENTLY RETRACTED GEAR	16		16	41	1	42	57	1	58
FAILED TO SEE AND AVOID OTHER AIRCRAFT	22		22	161		161	183		183
FAILED TO SEE AND AVOID OBJECTS OR OBSTRUCTIONS	142	1	143	334	1	335	476	2	478
FAILED TO OBTAIN/MAINTAIN FLYING SPEED	1		1	2		2	3		3
MISJUDGED DISTANCE SPEED ALTITUDE OR CLEARANCE	2		2	39	1	40	41	1	42
FAILED TO MAINTAIN ADEQUATE ROTOR RPM	3		3	12	4	16	15	4	19
FAILED TO USE OR INCORRECTLY USED MISC EQUIPMENT	2	1	3	15	2	17	17	3	20
FAILED TO FOLLOW APPROVED PROCEDURES DIRECTIVES ETC	8	1	9	128	3	131	136	4	140
IMPROPER OPERATION OF POWERPLANT + POWERPLANT CONTROLS				426	1	427	426	1	427
IMPROPER OPERATION OF BRAKES AND/OR FLIGHT CONTROLS	18		18	62		62	80		80
IMPROPER OPERATION OF FLIGHT CONTROLS				48	1	49	48	1	49
PREMATURE LIFT OFF	2		2	318		318	320		320
IMPROPER LEVEL OFF	3		3	6		6	9		9
IMPROPER IFR OPERATION	11		11	48	2	50	59	2	61
IMPROPER IN-FLIGHT DECISIONS OR PLANNING				45		45	45		45
IMPROPER COMPENSATION FOR WIND CONDITIONS	37	3	40	284	19	303	321	22	343
INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING	4		4	153		153	157		157
INADEQUATE SUPERVISION OF FLIGHT	1		1	19	15	34	20	15	35
LACK OF FAMILIARITY WITH AIRCRAFT	12		12	147		147	159		159
MISMANAGEMENT OF FUEL SYSTEM	25	2	27	125	1	126	150	3	153
EXERCISED POOR JUDGEMENT	1		1	7	1	8	8	1	9
OPERATED CARELESSLY	2		2	314	5	319	316	5	321
SELECTED UNSUITABLE TERRAIN	1		1	5		5	6		6
IMPROPER STARTING PROCEDURES				40		40	40		40
STARTED ENGINE WITHOUT PROPER ASSISTANCE/EQUIPMENT				22	1	23	22	1	23
TAXIED/PARKED WITHOUT PROPER ASSISTANCE				124		124	124		124
FAILED TO ASSURE THE GEAR WAS DOWN AND LOCKED				1		1	1		1
CONTROL INTERFERENCE	1		1	14	3	17	15	3	18
SPONTANEOUS-IMPROPER ACTION	6		6	25		25	31		31
MISJUDGED DISTANCE SPEED AND ALTITUDE	1		1	256		256	257		257
MISJUDGED DISTANCE AND SPEED	1		1	15		15	16		16
MISJUDGED DISTANCE	2		2	133		133	135		135
MISJUDGED DISTANCE AND ALTITUDE	2		2	12	2	14	14	2	16
MISJUDGED SPEED AND ALTITUDE	1		1	6		6	7		7
MISJUDGED SPEED	1		1	2		2	3		3
MISJUDGED SPEED AND CLEARANCE	9		9	13		13	22		22
MISJUDGED ALTITUDE AND CLEARANCE	8		8	32	1	33	40	1	41
MISJUDGED ALTITUDE	12		12	90		90	102		102
MISJUDGED CLEARANCE				1		1	1		1
INADEQUATE TRAINING OF STUDENT				2		2	2		2
MISUNDERSTANDING OF ORDERS OR INSTRUCTIONS	1		1	131	3	134	132	3	135
IMPROPER RECOVERY FROM BOUNCED LANDING	5		5	2		2	7		7
INCAPACITATION	32	2	34	6	1	7	38	3	41
PHYSICAL IMPAIRMENT	80		80	7	1	8	87	1	88
SPATIAL DISORIENTATION				1	2	3	1	2	3
PSYCHOLOGICAL CONDITION		2	2	14	10	24	14	12	26
MISUSED OR FAILED TO USE FLAPS				4		4	4		4
LEFT AIRCRAFT UNATTENDED ENGINE RUNNING	1		1	243	1	244	244	1	245
FAILED TO MAINTAIN DIRECTIONAL CONTROL	1		1	61	12	73	62	12	74
SELECTED WRONG RUNWAY RELATIVE TO EXISTING WIND									

TABLE 33 (CONTINUED) CAUSE/FACTOR TABLE

PILOT IN COMMAND (CONTINUED)

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
FAILED TO ABORT TAKEOFF	3		3	22		22	25		25
FAILED TO INITIATE GO-AROUND				42	6	48	42	6	48
DIRECT ENTRIES	11		11	26		26	37		37
SUBTOTAL	682	15	697	4770	131	4901	5452	146	5598
COPILOT									
INADVERTENTLY RETRACTED GEAR				3		3	3		3
FAILED TO FOLLOW APPROVED PROCEDURES DIRECTIVES ETC				1		1	1		1
IMPROPER OPERATION OF BRAKES AND/OR FLIGHT CONTROLS	1		1				1		1
IMPROPER LEVEL OFF				1		1	1		1
MISJUDGED DISTANCE AND ALTITUDE				1		1	1		1
FAILED TO MAINTAIN DIRECTIONAL CONTROL				1		1	1		1
SUBTOTAL	1		1	7		7	8		8
DUAL STUDENT									
DELAYED IN INITIATING GO-AROUND				1		1	1		1
DIVERTED ATTENTION FROM OPERATION OF AIRCRAFT				2		2	2		2
FAILED TO EXTEND LANDING GEAR				7		7	7		7
FAILED TO RETRACT LANDING GEAR				1		1	1		1
RETRACTED GEAR PREMATURELY				1		1	1		1
INADVERTENTLY RETRACTED GEAR				9		9	9		9
FAILED TO SEE OTHER AIRCRAFT				4		4	4		4
FAILED TO SEE AND AVOID OBJECTS AND OBSTRUCTIONS				6		6	6		6
FAILED TO OBTAIN/MAINTAIN FLYING SPEED	2		2	16		16	18		18
FAILED TO MAINTAIN ADEQUATE ROTOR RPM				4		4	4		4
IMPROPER OPERATION OF POWERPLANT + POWERPLANT CONTROLS				6		6	6		6
IMPROPER OPERATION OF BRAKES AND/OR FLIGHT CONTROLS				26		26	26		26
IMPROPER OPERATION OF FLIGHT CONTROLS				9		9	9		9
PREMATURE LIFT-OFF				2		2	2		2
IMPROPER LEVEL OFF				24		24	24		24
IMPROPER COMPENSATION FOR WIND CONDITIONS				1		1	1		1
INADEQUATE SUPERVISION OF FLIGHT				2		2	2		2
LACK OF FAMILIARITY WITH AIRCRAFT				2	1	3	2	1	3
MISMANAGEMENT OF FUEL SYSTEM				3		3	3		3
SELECTED UNSUITABLE TERRAIN				1		1	1		1
FAILED TO ASSURE THE GEAR WAS DOWN AND LOCKED				1		1	1		1
FAILURE TO RELINQUISH CONTROL				3	1	4	3	1	4
CONTROL INTERFERENCE				2		2	2		2
SPONTANEOUS-IMPROPER ACTION				11		11	11		11
MISJUDGED DISTANCE SPEED AND ALTITUDE				1		1	1		1
MISJUDGED DISTANCE AND SPEED				6		6	6		6
MISJUDGED DISTANCE AND ALTITUDE	1		1	19		19	20		20
MISJUDGED ALTITUDE				1		1	1		1
MISUNDERSTANDING OF ORDERS OR INSTRUCTIONS				2		2	2		2
IMPROPER RECOVERY FROM BOUNCED LANDING				1		1	1		1
SPATIAL DISORIENTATION	1		1	1		1	2		2
MISUSED OR FAILED TO USE FLAPS				1		1	1		1
FAILED TO MAINTAIN DIRECTIONAL CONTROL				7		7	7		7
FAILED TO INITIATE GO-AROUND				1		1	1		1
SUBTOTAL	4		4	184	2	186	188	2	190
CHECK PILOT									
FAILED TO SEE AND AVOID OBJECTS OR OBSTRUCTIONS				1		1	1		1
INADEQUATE SUPERVISION OF FLIGHT				3		3	3		3
SUBTOTAL				4		4	4		4
PERSONNEL									
FLIGHT INSTRUCTOR									
INADEQUATE SUPERVISION OF FLIGHT	1		1	7	1	8	8	1	9
INADEQUATE TRAINING OF STUDENT				9	5	14	9	5	14
DIRECT ENTRIES				2		2	2		2
MAINTENANCE SERVICING INSPECTION									

TABLE 33 CONTINUED)

CAUSE/FACTOR TABLE

PERSONNEL (CONTINUED)	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
IMPROPER MAINTENANCE(MAINTENANCE PERSONNEL)		1	1	23	1	24	23	2	25
IMPROPER MAINTENANCE(OWNER PERSONNEL)				14		14	14		14
IMPROPERLY SERVICED AIRCRAFT(GROUND CREW)				5	1	6	5	1	6
IMPROPERLY SERVICED AIRCRAFT(OWNER-PILOT)				6	1	7	6	1	7
INADEQUATE INSPECTION OF AIRCRAFT(MAINTENANCE PERSONNEL)	1	1	2	8	1	9	9	2	11
INADEQUATE INSPECTION OF AIRCRAFT(OWNER-PILOT PERSONNEL				5		5	5		5
INADEQUATE MAINTENANCE AND INSPECTION	11	2	13	179	12	191	190	14	204
OTHER				1		1	1		1
UNKNOWN/NOT REPORTED					1	1		1	1
OPERATIONAL SUPERVISORY PERSONNEL									
INADEQUATE SUPERVISION/TRAINING OF RAMP CREWS				1		1	1		1
FAILURE TO PROVIDE ADEQ DIRECTIVES MANUALS EQUIPMENT				1	1	2	1	1	2
DEFICIENCY COMPANY MAINTAINED EQMPT SERVICES REGULATION				1		1	1		1
WEATHER PERSONNEL									
INCORRECT WEATHER FORECAST	4	1	5		4	4	4	5	9
INCOMPLETE WEATHER REPORT	1		1				1		1
INADEQUATE/INCORRECT WEATHER BRIEFING				1		1	1		1
TRAFFIC CONTROL PERSONNEL									
FAILURE TO ADVISE OF UNSAFE WEATHER CONDITION		1	1					1	1
FAILURE TO ADVISE OF OTHER TRAFFIC		2	2					2	2
ISSUED IMPROPER OR CONFLICTING INSTRUCTIONS		1	1	1		1	1	1	2
INADEQUATE SPACING OF AIRCRAFT		2	2					2	2
AIRPORT SUPERVISORY PERSONNEL									
IMPROPER MAINTENANCE-AIRPORT FACILITIES				5	1	6	5	1	6
FAILURE TO NOTIFY OF UNSAFE CONDITION		1	1	14	1	15	14	2	16
IMPROPER/INADEQUATE SNOW REMOVAL				7	1	8	7	1	8
IMPROPER INSPECTION OF FACILITIES				2	1	3	2	1	3
OTHER				1		1	1		1
AIRWAYS FACILITIES PERSONNEL									
PRODUCTION-DESIGN									
SUBSTANDARD QUALITY CONTROL	3		3	1		1	4		4
INCORRECT FACTORY INSTALLATION				4		4	4		4
POOR/INADEQUATE DESIGN				3		3	3		3
MISCELLANEOUS-PERSONNEL									
PILOT OF OTHER AIRCRAFT	19		19	54	2	56	73	2	75
GROUND SIGNALMAN	3		3	5		5	8		8
SPECTATOR	1		1	2		2	3		3
GROUND CREWMAN	1		1	4	1	5	5	1	6
PASSENGER	3		3	7	1	8	10	1	11
DRIVER OF VEHICLE		1	1	16	3	19	16	4	20
OTHER				2	1	3	2	1	3
DIRECT ENTRIES	1		1	4		4	5		5
THIRD PILOT									
FLIGHT ENGINEER									
DISPATCHING									
SUBTOTAL	49	13	62	395	40	435	444	53	497
AIRFRAME									
WINGS									
SPARS	17		17				17		17
RIBS STRINGERS CAP STRIPS				1		1	1		1
BRACING WIRES STRUTS	3		3	1		1	4		4
SKIN AND ATTACHMENTS	4		4	1		1	5		5
WINGTIPS	3		3				3		3
WHEEL WELL DOORS				1		1	1		1
OTHER	3		3		1	1	3	1	4
FUSELAGE									
LONGERUNS	1		1				1		1

TABLE 33 (CONTINUED)

CAUSE/FACTOR TABLE

AIRFRAME (CONTINUED)

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
WINDSHIELDS WINDOWS CANOPIES				1		1	1		1
WHEEL WELL DOORS				1		1	1		1
LANDING GEAR									
MAIN GEAR-SHOCK ABSORBING ASSY STRUTS ATTACHMENTS ETC				34		34	34		34
NORMAL RETRACTION/EXTENSION ASSEMBLY				81	7	88	81	7	88
EMERGENCY/EXTENSION ASSEMBLY				19		19	19		19
TAILWHEEL ASSEMBLIES				11	5	16	11	5	16
NOSEWHEEL ASSEMBLIES				78	2	80	78	2	80
WHEELS TIRES AXLES				25	2	27	25	2	27
SKI ASSEMBLIES				2		2	2		2
FLOAT ASSEMBLIES					3	3		3	3
BRAKING SYSTEM				54	7	61	54	7	61
BRAKING SYSTEM				2		2	2		2
LANDING GEAR WARNING AND INDICATING COMPONENTS				3	59	61	3	58	61
GEAR LOCKING MECHANISM				47	2	49	47	2	49
SWITCHES LEVERS CRANKING MECHANISM ETC				7	6	13	7	6	13
NOSEWHEEL STEERING				8	2	10	8	2	10
OTHER					1	1		1	1
DIRECT ENTRIES				20		20	20		20
FLIGHT CONTROL SURFACES									
RUDDER SURFACES ATTACHMENTS	3		3	2		2	5		5
AILERON SURFACES ATTACHMENTS	2		2				2		2
HORIZONTAL STABILIZER ATTACHMENTS	6	1	7				6	1	7
VERTICAL STABILIZER ATTACHMENTS	5		5				5		5
OTHER	4		4				4		4
SUBTOTAL	51	1	52	399	96	495	450	97	547
POWERPLANT									
ENGINE STRUCTURE									
CRANKCASE	2		2	1		1	3		3
CRANKSHAFT				8	1	9	8	1	9
MASTER AND CONNECTING RODS	1		1	13		13	14		14
CYLINDER ASSEMBLY				12		12	12		12
PISTON PISTON RINGS	1		1	16		16	17		17
VALVE ASSEMBLIES				21		21	21		21
BLOWER IMPELLER ASSEMBLY				3		3	3		3
MOUNT AND VIBRATION ISOLATORS	1		1	1	1	2	2	1	3
OTHER	1		1	7		7	8		8
IGNITION SYSTEM									
MAGNETOES	1		1	11		11	12		12
SPARK PLUG	2		2	13	1	14	15	1	16
LOW TENSION WIRING				2		2	2		2
HIGH TENSION WIRING				1		1	1		1
IGNITION HARNESS SHIELDING					1	1		1	1
SWITCHES				1	1	2	1	1	2
FUEL SYSTEM									
TANKS				3	1	4	3	1	4
LINES AND FITTINGS	1		1	12		12	13		13
SELECTOR VALVES	1		1	3		3	4		4
FILTERS STRAINERS SCREENS				2	1	3	2	1	3
PRIMING SYSTEM				1		1	1		1
CARBURETOR	2		2	26		26	28		28
PUMPS	1		1	10		10	11		11
FUEL INJECTION SYSTEM	1		1	4		4	5		5
VENTS DRAINS TANK CAPS				7	2	9	7	2	9
RAM AIR ASSEMBLY				3		3	3		3
OTHER				3		3	3		3
LUBRICATING SYSTEM									
LINES HOSES FITTINGS				5	1	6	5	1	6
FILTERS SCREENS				2		2	2		2
PUMP-PRESSURE				2		2	2		2
OIL COOLERS				1		1	1		1
SEALS AND GASKETS				3		3	3		3
OTHER				2	1	3	2	1	3

TABLE 33 (CONTINUED)

CAUSE/FACTOR TABLE

POWERPLANT (CONTINUED)

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
COOLING SYSTEM				1		1	1		1
OTHER									
PROPELLER AND ACCESSORIES				12		12	12		12
BLADES				5		5	5		5
HUBS				2		2	2		2
HYDRAULIC PITCH CONTROL MECHANISM				2	1	3	2	1	3
SPINNERS DOMES	1		1				1		1
GOVERNORS	1		1	1		1	2		2
OTHER									
EXHAUST SYSTEM				4		4	4		4
MANIFOLDS	1		1	5		5	6		6
MUFFLERS	1		1	2		2	3		3
GASKETS				2		2	2		2
CLAMPS	1		1	2		2	3		3
STACKS				1		1	1		1
BAFFLES				4		4	4		4
EXTERNAL SUPERCHARGER									
ENGINE ACCESSORIES				1		1	1		1
GENERATORS				1		1	1		1
STARTERS									
ENGINE CONTROLS-COCKPIT				10		10	10		10
THROTTLE-POWER LEVER ASSEMBLIES				1		1	1		1
MIXTURE CONTROL ASSEMBLIES				1		1	1		1
INDUCTION AIR PREHEAT CONTROLS				1		1	1		1
OTHER									
POWERPLANT-INSTRUMENTS		1	1	1	9	10	1	10	11
FUEL PRESSURE GAUGE					1	1		1	1
OTHER									
MISCELLANEOUS	13		13	110	1	111	123	1	124
POWERPLANT FAILURE FOR UNDETERMINED REASONS				2		2	2		2
DETONATION	3		3	18		18	21		21
DIRECT ENTRIES									
REDUCTION GEAR ASSEMBLY				1		1	1		1
GEARS ACCESSORY DRIVE				1		1	1		1
OTHER									
COMPRESSOR ASSEMBLY									
COMBUSTION ASSEMBLY									
TURBINE ASSEMBLY									
ACCESSORY DRIVE ASSEMBLY									
LUBRICATING SYSTEM									
FUEL SYSTEM									
SAFETY SYSTEM									
IGNITION SYSTEM									
TORQUEMETER									
AIR BLEED									
EXHAUST SYSTEM									
THRUST REVERSER									
PROPELLER SYSTEM									
CONSTANT SPEED DRIVE									
POWER LEVER									

TABLE 33 (CONTINUED)

POWERPLANT (CONTINUED)

CAUSE/FACTOR TABLE

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
PROPELLER LEVER									
REVERSE THRUST LEVER									
ENGINE INDICATING EQUIPMENT									
ENGINE INSTALLATION									
SUBTOTAL	36	1	37	390	23	413	426	24	450
SYSTEMS									
ELECTRICAL SYSTEM									
BATTERIES				2	4	6	2	4	6
GENERATORS/ALTERNATORS				2	5	7	2	5	7
RELAYS AND WIRING					1	1		1	1
MOTORS				2	4	6	2	4	6
SWITCHES					2	2		2	2
HYDRAULIC SYSTEM									
HYDRAULIC PUMPS				2		2	2		2
RESERVOIR LINES FITTINGS				5	1	6	5	1	6
SEALS				10	1	11	10	1	11
RELIEF VALVE				2		2	2		2
BY-PASS VALVE				1		1	1		1
FLIGHT CONTROL SYSTEMS									
AILERON AND AILERON TAB CONTROL SYSTEM	1		1	5		5	6		6
ELEVATOR AND ELEVATOR TAB CONTROL SYSTEM	1	1	2	4		4	5	1	6
RUDDER AND RUDDER TAB CONTROL SYSTEM				5		5	5		5
WING FLAP CONTROL SYSTEM HYDRAULIC				1		1	1		1
WING FLAP CONTROL SYSTEM MECHANICAL					1	1		1	1
FLIGHT CONTROL BOOST SYSTEMS					1	1		1	1
ANTI-ICING DE-ICING SYSTEMS									
CARBURETOR DE-ICING SYSTEM				2		2	2		2
AIR CONDITION HEATING AND PRESSURIZATION									
AUTO PILOT									
GYROS					1	1		1	1
FIRE WARNING SYSTEM									
FIRE EXTINGUISHER SYSTEM									
PORTABLE				1		1	1		1
OXYGEN SYSTEM									
OTHER SYSTEMS									
PITOT SYSTEM					2	2		2	2
OTHER		1	1					1	1
DIRECT ENTRIES				2		2	2		2
SUBTOTAL	2	2	4	46	23	69	48	25	73
INSTRUMENTS/EQUIPMENT AND ACCESSORIES									
FLIGHT AND NAVAGATION INSTRUMENTS									
ALTIMETERS				2	1	3	2	1	3
AIRSPEED	1		1	1	4	5	2	4	6
COURSE INDICATOR					1	1		1	1
COMMUNICATIONS AND NAVIGATION EQUIPMENT									
TRANSMITTERS AND/OR RECEIVERS					1	1		1	1
VOR RECEIVERS				1	1	2	1	1	2
COMPASS RECEIVERS					1	1		1	1
OTHER				1		1	1		1
MISCELLANEOUS EQUIPMENT									

TABLE 33 (CONTINUED) CAUSE/FACTOR TABLE

INSTRUMENTS/EQUIPMENT AND ACCESSORIES (CONTINUED)	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTA
SPRAY DUSTING EQUIPMENT				2	1	3	2	1	
SIGN TOWING EQUIPMENT				1		1	1		
GLIDER LAUNCH/TOW EQUIPMENT				1		1	1		
DIRECT ENTRIES	1		1				1		
SUBTOTAL	2		2	9	10	19	11	10	
ROTORCRAFT									
ROTOR ASSEMBLIES	1		1	2		2	3		
MAINROTOR BLADES	1		1	7		7	8		
TAIL ROTOR BLADES				1		1	1		
BEARINGS				2		2	2		
OTHER									
TRANSMISSION ROTOR DRIVE SYSTEM				1		1	1		
TAIL ROTOR DRIVE SHAFT ASSEMBLY	1		1	1		1	2		
TAIL ROTOR GEAR BOX				3	1	4	3	1	
CLUTCH ASSEMBLY									
FLIGHT CONTROL SYSTEMS				2	2	4	2	2	
CYCLIC PITCH CONTROL SYSTEM					1	1		1	
COLLECTIVE PITCH CONTROL SYSTEM				3		3	3		
TAIL ROTOR PITCH CONTROL SYSTEM				1		1	1		
STABILIZING SURFACES-DAMPERS	1		1				1		
OTHER									
MISCELLANEOUS UNITS AND ASSEMBLIES									
SUBTOTAL	4		4	23	4	27	27	4	
AIRPORTS/AIRWAYS/FACILITIES									
AIRPORT FACILITIES					2	2		2	
RUNWAY LIGHTING				3	1	4	3	1	
TAXIWAY LIGHTING AND MARKING					2	2		2	
OTHER									
AIRPORT CONDITIONS				4	61	65	4	61	
WET RUNWAY				3	38	41	3	38	
ICE/SLUSH ON RUNWAY				10	40	50	10	40	
SNOW ON RUNWAY				4	6	10	4	6	
SNOW WINDROWS				3	7	10	3	7	
UNMARKED OBSTRUCTIONS					29	29		29	
SOFT SHOULDERS					4	4		4	
ROUGH WATER		1	1		16	16		17	
HIGH VEGETATION				18	11	29	18	11	
HIDDEN HAZARD				12	16	28	12	16	
POORLY MAINTAINED RUNWAY SURFACE				7	24	31	7	24	
SOFT RUNWAY				2	1	3	2	1	
ICE/SLUSH ON RAMP/TAXIWAY					3	3		3	
SNOW ON RAMP/TAXIWAY					4	4		4	
SOFT SHOULDERS				3	30	33	3	30	
OTHER									
AIRWAYS FACILITIES									
SUBTOTAL		1	1	69	295	364	69	296	
WEATHER		123	123		77	77		200	
LOW CEILING		45	45		27	27		72	
RAIN		63	63	1	64	65	1	127	
FOG		19	19		23	23		42	
SNOW					1	1		1	
HAIL	1	5	6	2	13	15	3	18	
ICING CONDITIONS-INCLUDES SLEET FREEZING RAIN ETC		8	8	3	31	34	3	39	
CONDITIONS CONDUCIVE TO CARB/INTRODUCTION SYSTEM ICING		3	3	89	235	324	89	238	
UNFAVORABLE WIND CONDITIONS				16	12	28	16	12	
SUDDEN WINDSHIFT									

TABLE 33 (CONTINUED)

WEATHER (CONTINUED)

CAUSE/FACTOR TABLE

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
TURBULENCE IN FLIGHT CLEAR AIR				1	2	3	1	2	3
TURBULENCE ASSOCIATED W/CLOUDS THUNDERSTORMS	5	16	21	2	4	6	7	20	27
DOWNDRAFTS UPDRAFTS	1	5	6	13	61	74	14	66	80
LOCAL WHIRLWIND				7		7	7		7
LINE SQUALL		1	1		1	1		2	2
HIGH TEMPERATURE					26	26		26	26
OBSTRUCTIONS TO VISION		4	4	1	17	18	1	21	22
HIGH DENSITY ALTITUDE	1	11	12	4	95	99	5	96	101
THUNDERSTORM ACTIVITY	3	8	11		32	32	3	40	43
OTHER		1	1					1	1
SUBTOTAL	11	312	323	139	711	850	150	1023	1173
TERRAIN									
WET SOFT GROUND				6	96	102	6	96	102
SNOW-COVERED				1	19	20	1	19	20
ICY					2	2		2	2
HIGH VEGETATION		1	1	4	48	52	4	49	53
HIDDEN OBSTRUCTIONS	1		1	5	10	15	6	10	16
ROUGH/UNEVEN		2	2	8	95	103	8	97	105
ROUGH WATER		2	2	1	9	10	1	11	12
GLASSY WATER	1	2	3	1	6	7	2	8	10
HIGH OBSTRUCTIONS	2	20	22	6	53	59	8	73	81
LOOSE GRAVEL					5	5		5	5
SANDY					4	4		4	4
OTHER		1	1	5	24	29	5	25	30
SUBTOTAL	4	28	32	37	371	408	41	399	440
MISCELLANEOUS									
BIRD COLLISION	1		1	14		14	15		15
VORTEX TURBULENCE	2		2	17	2	19	19	2	21
PROP/JET BLAST				5		5	5		5
STATIC DISCHARGE					1	1		1	1
EVASIVE MANEUVER TO AVOID COLLISION				10	5	15	10	5	15
UNQUALIFIED PERSON OPERATED AIRCRAFT				4	7	11	4	7	11
FOREIGN OBJECT DAMAGE				6	3	9	6	3	9
SMOKE IN COCKPIT	1		1				1		1
FOREIGN MATERIAL AFFECTING NORMAL OPERATIONS	1		1	37	8	45	38	8	46
UNDETERMINED	45		45	18		18	63		63
DIRECT ENTRIES	3		3	36		36	39		39
SUBTOTAL	53		53	147	26	173	200	26	226
GRAND TOTAL	899	373	1272	6619	1732	8351	7518	2105	9623
MISCELLANEOUS ACFS CONDITIONS									
ALTIMETER SETTING-INCORRECT				1		1	1		1
IMPROPER OPEN/FAILED TO USE CARB HEAT/DEICING EQUIP		1	1	85	3	88	85	4	89
CHECKLIST-FAILED TO USE	1		1	6	121	127	7	121	128
COWL FLAPS-IMPROPERLY POSITIONED				1		1	1		1
CREW COORDINATION-POOR	1		1	1	4	5	2	4	6
DISREGARD OF GOOD OPERATING PRACTICE				10	7	17	10	7	17
IMPROPER EMERGENCY PROCEDURES	5		5	14	9	23	19	9	28
FEATHERED WRONG ENGINE				1		1	1		1
GUST LOCKS ENGAGED	1		1	6	1	7	7	1	8
INSTRUCTIONS-MISINTERPRETED				2	2	4	2	2	4
INSTRUMENTS-MISREAD OR FAILED TO READ	1		1	2	3	5	3	3	6
SEAT BELT NOT FASTENED		1	1		1	1		2	2
NOT ALLIGNED WITH RUNWAY/INTENDED LANDING AREA				29	10	39	29	10	39
UNWARRENTED LOW FLYING	36	4	40	23	10	33	59	14	73
FAILED TO EXTEND THE LANDING FLAPS					3	3		3	3
FAILED TO USE ALL AVAILABLE RUNWAY		1	1	2	5	7	2	5	8
LANDED AT WRONG AIRPORT					3	3		3	3
INATTENTIVE TO FUEL SUPPLY	5	1	6	37	10	47	42	11	53
FLEW INTO BLIND CANYON	7	3	10	6	2	8	13	5	18
PREMATURE FLAP RETRACTION				2	2	4	2	2	4

TABLE 33 (CONTINUED)

CAUSE/FACTOR TABLE

MISCELLANEOUS ACTS CONDITIONS (CONTINUED)

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
POORLY PLANNED APPROACH	1	1	2	15	23	38	16	24	40
MISCALCULATED FUEL CONSUMPTION	1		1	15	7	22	16	7	23
JETTISONED LOAD					9	9		9	9
STOLEN OR UNAUTHORIZED USE OF AIRCRAFT		3	3		16	16		19	19
LANDED ON FOAMED RUNWAY					14	14		14	14
IMPROPERLY SECURED				11	4	15	11	4	15
BOGUS PART					1	1		1	1
ELECTRICAL FAILURE				4	16	20	4	16	20
ENGINE LOADED UP	2		2	18	11	29	20	11	31
FATIGUE FRACTURE	4	1	5	61	5	66	65	6	71
FUEL GRADE-IMPROPER				1		1	1		1
HYDRAULIC FAILURE				4	1	5	4	1	5
IMPROPER GRADE OIL-LUBRICATING SYSTEM				2		2	2		2
RPM-UNCONTROLLABLE-OVERSPEED	1		1	1	1	2	2	1	3
WINDSHIELD DIRTY FOGGY ETC-RESTRICTED VISION				1	5	6	1	5	6
WRONG PART		1	1		2	2		3	3
IMPROPER ALIGNMENT/ADJUSTMENT				19	5	24	19	5	24
FAILURE OF TWO OR MORE ENGINES	1	4	5	3	21	24	4	25	29
SEPARATION IN FLIGHT	3	36	39	1	34	35	4	70	74
FIRE IN CABIN COCKPIT BAGGAGE COMPARTMENT	1	1	2		1	1	1	2	3
FIRE IN ENGINE	1	1	2	3	8	11	4	9	13
LATERAL IMBALANCE				4	1	5	4	1	5
CORRODED/CORROSION				6	2	8	6	2	8
INCORRECT TRIM SETTING	1	1	2		3	3	1	4	5
CONGESTED TRAFFIC-PATTERN OR RAMP					7	7		7	7
PILOT FATIGUE					9	9		9	9
FUEL EXHAUSTION	4		4	170	1	171	174	1	175
FUEL CONTAMINATION-EXCLUSIVE OF WATER IN FUEL				18		18	18		18
PILOT SUFFERED HEART ATTACK	5		5	1		1	6		6
ALCOHOLIC IMPAIRMENT OF EFFICIENCY AND JUDGEMENT	37	2	39	5		5	42	2	44
HYPOXIA					1	1		1	1
CARBON MONOXIDE POISONING	3		3				3		3
ICE-ENGINE				1		1	1		1
ICE-CARBURETOR	2	1	3	49	5	54	51	6	57
AIRFRAME ICE	4	2	6	6	13	19	10	15	25
ICE-WINDSHIELD					4	4		4	4
IMPROPERLY LOADED AIRCRAFT-WEIGHT-AND/OR CG	1	9	10	11	11	22	12	20	32
INTERFERENCE WITH FLIGHT CONTROLS				10	1	11	10	1	11
WHITEOUT				2	1	3	2	1	3
SUNGLARE		11	11	2	35	37	2	46	48
LACK OF LUBRICATION-SPECIFIC PART NOT SYSTEM				14	8	22	14	8	22
OIL EXHAUSTION-ENGINE LUBRICATION SYSTEM	1		1	11	1	12	12	1	13
OIL CONTAMINATION				1		1	1		1
SIMULATED CONDITIONS	2	4	6	17	49	66	19	53	72
WATER IN FUEL	3		3	44	2	46	47	2	49
AIRCRAFT CAME TO REST IN WATER		49	49		87	87		135	13[illegible]
FROZEN				4	1	5	4	1	[illegible]
MISSING	1	1	2	10	3	13	11	4	1[illegible]
HYDROPLANING ON WET RUNWAY				2	2	4	2	2	[illegible]
OVERLOAD FAILURE	26	12	38	16	958	974	42	970	101[illegible]
MATERIAL FAILURE	13	1	14	266	25	291	279	26	30[illegible]
FUEL STARVATION	15	1	16	187		187	202	1	20[illegible]
OIL STARVATION	1		1	9	2	11	10	2	1[illegible]
IMPROPER CLEARANCE-TOLERANCE	1		1	9	1	10	10	1	1[illegible]
FUEL SELECTOR POSITIONED BETWEEN TANKS	1		1	5	4	9	6	4	1[illegible]
TIEDOWN LINES SNAPPED				1	2	3	1	2	
FIRE OR UNDETERMINED ORIGIN	2		2	2		2	4		
UNAPPROVED MODIFICATION	1	1	2	3	1	4	4	2	
IMPROPER/INADEQUATE VENTING				2	1	3	2	1	
ACTION LACK OF				2		2	2		
POOR WELD	1	1	2	4	1	5	5	2	
PREVIOUS DAMAGE		1	1	26	43	69	26	44	[illegible]
LEAK/LEAKAGE	1		1	19	14	33	20	14	[illegible]
LOW FLUID LEVEL				6	5	11	6	5	[illegible]
CIRCUIT BREAKER POPPED				1	24	25	1	24	[illegible]
LOW COMPRESSION				2		2	2		
RUNWAY CLOSED				1	13	14	1	13	
DOWNWIND		4	4	2	113	115	2	117	[illegible]
CARBON DEPOSITS	1		1	7	1	8	8	1	
LANDED IN CONSTRUCTION AREA				2	10	12	2	10	
OVER TORQUED					2	2		2	
LOOSE PART/FITTING	1	1	2	8	4	12	9	5	

TABLE 33 (CONTINUED)

MISCELLANEOUS ACTS CONDITIONS (CONTINUED)

CAUSE/FACTOR TABLE

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
GROUND RESONANCE				4		4	4		4
BENT				4		4	4		4
BINDING	2		2	4	1	5	6	1	7
BRITTLE		1	1					1	1
BUCKLED	1		1				1		1
BURNED	1		1	2	2	4	3	2	5
COLLAPSED				1		1	1		1
CROSSED				3		3	3		3
DETERIORATED	1		1	1	1	2	2	1	3
DISCONNECTED		2	2	4	4	8	4	6	10
EXCESSIVE				4	1	5	4	1	5
ERRATIC					3	3		3	3
FLUTTER		1	1					1	1
FRICTION EXCESSIVE				1		1	1		1
GROUNDED				2		2	2		2
IMPROPERLY INSTALLED	1	2	3	19	3	22	20	5	25
JAMMED	1		1	24	3	27	25	3	28
NICKED				1		1	1		1
OBSTRUCTED				2		2	2		2
OPEN				1	2	3	1	2	3
OUT OF BALANCE				2	1	3	2	1	3
OVERHEATED				1	1	2	1	1	2
PRESSURE TOO LOW				3	1	4	3	1	4
PRESSURE NONE				4	1	5	4	1	5
SCORED	1		1				1		1
SHEARED				3		3	3		3
STICKING				1		1	1		1
STRIPPED					2	2		2	2
STUCK	1		1	3	1	4	4	1	5
EXCESSIVE TEMPERATURE				2		2	2		2
VIBRATION EXCESSIVE				7	3	10	7	3	10
WARPED				1		1	1		1
MALFUNCTION FOR UNDETERMINED REASON				3		3	3		3

DIRECT ENTRY CAUSES

PILOT-INADEQUATE VISUAL CONTACT TO AVOID COLLISION
PILOT-INADEQUATE VISUAL CONTACT TO AVOID COLLISION
MISC-CLOGGED SPRAY TANK EQUALIZER TUBE
PILOT-IMPROPERLY EXECUTED AUTOROTATIVE LANDING.
MISC-RIGHT LANDING SKID FROZEN IN SNOW AT LIFTOFF
PILOT-FAILED TO ASSURE CART WAS CLEAR OF AIRCRAFT.
PILOT-ATTEMPTED DOWNWIND TAKEOFF OFF AIRPORT
PILOT-LIMITED EXPERIENCE
MISC-CHUTIST TOO NEAR NEXT MAN,RIPCORD SNAGED EQUIP
FLT INSTR-INADEQUATE INSTRUCTION.
PWR PLT-FUEL STRAVATION FOR AN UNDETERMINED REASON
PERSONNEL-INADEQUATE OPERATIONAL INSTRUCTIONS.
PILOT-IMPROPERLY EXECUTED PRECISION MANEUVER.
PILOT-FAILED TO LOCATE REPORTED CONFLICTING TRAFFIC

PILOT-FAILED TO ADEQUATELY CLEAR AREA BEFOR TAKOF
PILOT-IMPROPER HELICOPTER DEPLAING PROCEDURES
MISC-BALLOON BAG TORE FROM ACCENT AIR EXPASIN
PWR PLT-PARTIAL PWR LOSS FROM ENGINE CAUSE UNKNOW
PILOT-MISIDENTIFIED LDG AREA IN UNFAVOR AIRPT COND
LDG GR-NOSE OR STRUT DID NOT EXTND REASON UNDETRMD
MISC-GROUND RESONANCE FOR AN UNDETERMINED CAUSE
PILOT-IMPROPER DEPLAYING PROEDURES
PILOT-FAILED TO OBTAIN SUFF ALT.BEFORE ENTERNG MTS
PILOT FAILED TO OBTAIN ADEQ.ALT. BEFORE ENTERNG MTS
PWR PLT-FUEL FED ENG.NACELLE FIRE.CAUSE-UNDETERMIN
PWR PLT-INFLIGHT FUEL FIRE NO.2 ENG-CAUSE UNKNOWN
PWR PLT-TURBO SUPERCHARGER WASTE GATE VALVE.
PWR PLT-BOTH MAIN FUEL CAPS LOOSE,FUEL SYPHONING.
PILOT-ATTEMPT LDG PASS IN CONDITNS PREVENT GOAROND
PWR PLT-FUEL FED ENGINE FIRE FOR UNDETERMINED CAUS
PILOT-IMPROPER PASSENGER DEPLANING PROCEDURES
P PILOT-IMPROPERLY EXECUTED AUTOROTATIVE LANDING.

TABLE 33 (CONTINUED)

DIRECT ENTRY CAUSES (CONTINUED)

PILOT-MADE DOWNWIND TAKEOFF FROM CONFINED AREA.
PILOT-FAILED TO ALLOW ADEQUATE T.O.INTERVAL
PILOT-IMPROPERLY EXECUTED EMERGENCY LANDING.
FLT INSTR-POORLY PLANNED FORCED LANDING
PILOT-IMPROPERLY EXECUTED AUTOROTATIVE LANDING.
ROTORCFT-HEEL OF LEFT SKID SNAGGED ON TRAILER.
PILOT-MISIDENTIFICATION OF RUNWAY.
PILOT-RELEASED UNSECURED COLLECTIVE PITCH CONTROL.
PILOT-MISCALCULATED LANDING RUNWAY REQUIREMENTS.
EQUIP-GYRO INST FAILURE FOR UNDETERMINED REASON.
PILOT-IMPROPERLY EXECUTED GO-AROUND.
PILOT-LOSS OF CONTROL FOR UNDETERMINED REASON.
PWR PLT-UNWANTED FEATHER NO 1 PROP UNDET REASON.
ROTORCFT-TAIL ROTOR ASSEMBLY.
ROTOCFT-LFT SKID STRUCK EARTH HUMMOCK AFTER TOOWN.
PILOT-FAILED TO OBTAIN TRANSLATIONAL LIFT.
PILOT-SPRAY POISONING-(TEPP)-(DI SYSTOX).
ROTORCFT-INADVERTENT CLUTCH DISENGAGEMENT.
PERSONNEL-PASSENGER WALKED INTO TAIL ROTOR.
ROTORCFT-CLUTCH SLIPPAGE FOR UNDETERMINED CAUSE.
PERSONNEL-GRND CREW DID NOT PROPRLY CLEAR LDG AREA
PILOT-INADVERTENT DOWNWIND LANDING.
ROTORCFT-TAIL ROTOR QUILL SHAFT BEARING,PN 9505K.
PWR PLT-ALTITUDE COMPENSATOR MALFUNCTIONED.
PILOT-LOSS OF CONTROL FOR UNDETERMINED CAUSE.
PWR PLT-TURBINE WHEEL RUBBED AGAINST CASE HOUSING.
ROTORCFT-CLUTCH SLIPPAGE.
ROTORCFT-LOSS OF LIFT DUE TO ICE ACCRETION.
PWR PLT-ENGINES WOULDNT AIRSTART.REASON IS UNKNOWN
ROTORCFT-HEAD FORK ASSEMBLY STRAP P/N-60.
ROTORCFT-T/R HUB RETENTION BOLT PN 47-641-052-3.
ROTORCFT-TRANSMISSION MOUNTING BRACKETS.
PILOT-FAILED TO REMOVE ALL TIE DOWN LINES.
PILOT-LOSS OF CONTROL FOR AN UNDETERMINED REASON.
ROTORCFT-SLIPPAGE CAUSED BY GLAZED FRICTION SHOES.
PILOT-DEPLANED,WALKED INTO ROTATING PROPELLER.
PWR PLT-RIGHT ENG. AIR FILTER BOX BLOCKED BY SNOW.
LDG GR-BRAKES LOCKED BY FROZEN MOISTURE
LDG GR-RETRACTED FOR UNDETERMINED REASON
MISC-DESCENT WAS TOO STEEP PRECLUDING FUEL FLOW
LDG GR-RETRACTED FOR UNDETERMINED REASON
LDG GR-RETRACTED FOR UNDETERMINED REASON
LDG GR-NOSE GEAR RETRACTED FOR UNDETERMINED REASON
PWR PLT-CAMSHAFT DRIVE GEAR BOLTS FAILED.
MISC-ELECTRICAL FAILURE FOR UNDETERMINED REASON
MISC-SLUSH FROZE IN BRAKES
LDG GR-NOSE GEAR RETRACTED FOR UNDETERMINED REASON
MISC-PASSENGER INADVERTENTLY RELEASED ESCAPE HATCH
MISC-ANTELOPE RAN ONTO RUNWAY.
LDG GR-RETRACTED FOR UNDETERMINED REASON.
PWR PLT-NO GASKET,NO.3 CYLINDER ROCKER BOX COVER.
LDG GR-NOSE GEAR FAILURE FOR UNDETERMINED CAUSE.
PWR PLT-SEPARATION IN FLIGHT-CAUSE UNDETERMINED.
PILOT-IMPROPER LANDING TECHNIQUE.
MISC-WATER CONTAMINATED FUEL SOURCE
PILOT-IMPROPERLY EXECUTED TAKEOFF.
PILOT-EXCEEDED AIRCRAFT CROSSWIND CAPABILITY.
MISC-4 DEER RAN ONTO RUNWAY IN FRONT OF AIRCRAFT.
PERSONNEL-CARELESS OPERATION BY MOBILE OPERATOR.
MISC-SULPHUR DUST IGNITED AS HOPPER WAS CLOSED.
PILOT-NOT ALIGNED WITH RUNWAY.
MISC-DOGS CHASED DEER ACROSS RUNWAY.
PWR PLT-EXCESSIVE FUEL CONSUMPTION,CAUSE UNDETERMN
LDG GR-BEARING CAM FOLLOWER PART NO.CR-10-1 MISSNG
MISC-PILOTS FOOT STUCK BETWEEN BRAKE-RUDDER PEDALS
PILOT-POSITIONED MIXTURE CONTROL TO IDLE-CUT-OFF.
LDG GR-MALFUNCTION FOR UNDETERMINED REASON.
MISC-DEER CROSSED RUNWAY WHEN PILOT LANDED.
PWR PLT-INTAKE MANIFOLD CRACKED.
MISC-PILOTS FOOT WEDGED AGAINST LEFT RUDDER PEDAL.
PWR PLT-DETONATION IN ALL CYLINDERS.
LDG GR-BRAKES FAILED FOR UNDETERMINED CAUSE.

DIRECT ENTRY CAUSES (CONTINUED)

LDG GR-NOSE GEAR RETRACTED FOR UNDETERMINED REASON
MISC-BANNER TOW CABLE FOULED ON TAIL WHEEL.
LDG GR-NOSE GEAR FAILED FOR UNDETERMINED REASON.
MISC-COWS RAN ONTO RUNWAY.
PWR PLT-FUEL STARVATION FOR UNDETERMINED CAUSE.
LDG GR-FAILED TO EXTEND FOR UNDETERMINED REASON.
MISC-ENCOUNTERED TURBULENCE FROM PREVIOUS TURN.
SYSTEMS-CONTROL YOKE FAILED FOR UNDETERMINED CAUSE
MISC-DEER RAN ONTO RUNWAY.
PERSONNEL-NO FLAGMAN.
MISC-GROUNDED AIRCRAFT WAS DISPATCHED IN ERROR.
LDG GR-LEFT BRAKE BINDING FOR UNDETERMINED CAUSE.
MISC-AIRCRAFT STRUCK WILD DEER.
SYSTEMS-CONTROL STICK TORQUE TUBE WELD.
LDG GR-RETRACTED FOR UNDETERMINED CAUSE.
LDG GR-RETRACTED FOR UNDETERMINED CAUSE.
PILOT-MISREAD ALTIMETER AND DESCENDED INTO TREES.
PWR PLT-OIL FILLER CAP MISSING.
MISC-HORSE RAN INTO ROLLOUT PATH OF AIRCRAFT.
LDG GR-NORMAL GR.EXT.SYSTEM FAILED.CAUSE UNKNOWN.
LDG GR-LFT GR.RETRACT ROD BENT-CAUSE UNDETERMINED.
PWR PLT-FUEL STARVATION FOR UNDETERMINED CAUSE.

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

Section II

GENERAL AVIATION ACCIDENTS

SMALL FIXED-WING AIRCRAFT

Section II

GENERAL AVIATION ACCIDENTS

SMALL FIXED-WING AIRCRAFT

TABLE 34

ACCIDENTS, INJURY INDEX, AIRCRAFT DAMAGE BY KIND OF FLYING

SMALL FIXED-WING AIRCRAFT

1966

	KIND OF FLYING																							
	INSTRUCTIONAL				NON-COMMERCIAL					COMMERCIAL							MISCELLANEOUS							
	DUAL	SOLO	OTHER	TOTAL	PLEASURE	BUSINESS	CORPORATE	OTHER	TOTAL	AERIAL APPLICATION	FIRE CONTROL	POWER PIPELINE PATROL	AIR TAXI PASSENGER	AIR TAXI CARGO	OTHER	TOTAL	TEST	DEMONSTRATION	FERRY	TOWING GLIDER	HUNTING	OTHER	TOTAL	GRAND TOTAL
ACCIDENTS	300	444	53	797	2410	727	73	571	3781	271	4	8	157	32	19	491	36	37	109	2	21	75	280	-
INJURY INDEX																								
Fatal.....	18	5	12	35	315	69	2	15	401	42	0	0	18	6	3	69	3	3	7	1	6	11	31	536
Serious.....	19	9	3	31	146	26	2	12	186	30	0	1	8	4	1	44	7	1	6	0	4	7	25	286
Minor.....	33	32	4	69	250	65	2	67	384	39	0	1	18	2	3	63	2	1	18	0	2	8	31	547
None	230	398	34	662	1699	567	67	477	2810	160	4	6	113	20	12	315	24	32	78	1	9	46	190	3977
Unknown.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3
AIRCRAFT DAMAGE																								
Destroyed	35	22	16	73	469	100	4	38	611	94	0	1	28	10	5	138	9	3	17	0	8	23	60	882
Substantial....	264	420	36	720	1935	626	69	533	3163	174	4	7	128	22	15	350	27	34	92	2	13	53	221	4454
Minor.....	4	2	0	6	4	1	0	0	5	2	0	0	1	0	0	3	0	0	0	0	0	0	0	14
None.....	2	1	1	4	10	0	0	0	10	1	0	0	0	0	0	1	0	0	0	0	0	0	0	15
Unknown.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total.....	305	445	53	803	2418	727	73	571	3789	271	4	8	157	32	20	492	36	37	109	2	21	76	281	5365

TABLE 35

TYPE OF ACCIDENT VS KIND OF FLYING
SMALL FIXED-WING AIRCRAFT
1966

TYPE OF ACCIDENT	KIND OF FLYING: INSTRUCTIONAL				NON-COMMERCIAL					COMMERCIAL							MISCELLANEOUS							
	DUAL	SOLO	OTHER	TOTAL	PLEASURE	BUSINESS	CORPORATE	OTHER	TOTAL	AERIAL APPLICATION	FIRE CONTROL	PIPELINE PATROL	AIR TAXI PASSENGER	AIR TAXI CARGO	OTHER	TOTAL	TEST	DEMONSTRATION	FERRY	TOWING GLIDER	HUNTING	OTHER	TOTAL	GRAND TOTAL
Ground/waterloop/swerve	41	208	6	255	301	68	10	169	548	20	2	0	14	4	2	42	1	6	14	0	2	13	36	881
Dragged wingtip, pod, or float	0	1	0	1	2	1	1	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Wheels-up landing	18	1	1	20	186	118	14	38	356	0	0	0	23	2	1	26	6	7	4	0	0	2	19	421
Wheels-down landing in water	1	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Gear collapsed	15	7	8	30	104	51	5	14	174	4	0	0	10	2	0	16	2	2	2	1	0	3	10	230
Gear retracted	12	0	2	14	71	41	8	3	123	1	1	0	15	3	1	21	1	0	7	0	0	1	9	167
Hard landing	31	77	6	114	173	37	0	69	279	2	0	0	9	0	0	11	0	2	4	0	0	4	10	414
Noseover/down	10	14	2	26	78	38	1	25	142	4	0	2	3	0	0	9	2	1	8	0	1	4	16	193
Roll over	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Overshoot	11	34	0	45	180	44	6	27	257	4	1	0	6	2	1	14	0	2	5	0	0	4	11	327
Undershoot	24	15	1	40	87	17	0	33	137	0	0	0	3	1	0	4	1	3	0	0	0	3	7	188
Collision with aircraft a/																								
Both in flight	12	7	1	20	15	1	1	1	18	0	0	0	1	0	2	3	0	0	0	0	1	2	3	44
One airborne	5	4	1	10	4	1	0	1	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
Both on ground	8	0	1	9	10	3	0	2	15	0	0	0	3	0	0	3	0	0	0	0	0	1	1	28
Collision with ground/water																								
Controlled	6	0	2	8	52	16	1	11	80	10	0	0	5	5	0	20	1	0	3	0	1	6	11	119
Uncontrolled	1	1	3	5	63	24	0	3	90	2	0	0	3	1	1	7	2	1	0	0	0	1	4	106
Collided with																								
Wires/poles	7	5	0	12	66	18	0	10	94	42	0	0	1	0	2	45	0	2	2	0	0	1	5	156
Trees	2	2	3	7	70	17	0	8	95	12	0	0	7	1	2	22	1	0	0	0	0	4	5	129
Residence (s)	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
Other buildings	1	2	0	3	11	1	0	2	14	3	0	0	0	0	0	3	0	0	0	0	0	0	0	20
Fence, fenceposts	3	1	1	5	44	10	0	5	59	4	0	1	2	0	0	7	0	0	2	0	0	0	2	73
Electronic towers	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Runway or approach lights	0	0	0	0	5	2	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
Airport hazard	0	0	0	0	5	3	0	0	8	0	0	0	1	0	0	1	0	0	0	0	0	0	0	9
Animals	1	0	0	1	3	2	2	0	7	1	0	0	0	0	0	1	0	0	0	0	0	0	0	9
Crop	0	0	1	1	3	0	0	2	5	13	0	0	0	0	0	13	0	0	0	0	0	0	0	19
Flagman, loader	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	4	0	0	0	0	0	0	0	4
Ditches	1	4	1	6	33	6	0	2	41	4	0	1	0	1	0	6	1	1	1	0	0	2	5	58
Snowbank	3	2	0	5	7	3	2	3	15	0	0	0	0	0	0	0	0	0	0	0	1	0	1	21
Parked aircraft (unattended, eng.not running)	2	1	1	4	25	7	1	8	41	1	0	0	0	0	0	1	0	0	2	0	0	1	3	49
Automobile	0	6	0	6	3	0	1	4	8	3	0	0	2	0	0	5	1	1	1	0	0	0	3	22
Dirt bank	2	4	0	6	8	6	0	0	14	3	0	0	1	0	0	4	0	0	0	0	0	0	0	24
Other	5	3	1	9	63	21	3	12	99	7	0	0	9	0	1	17	0	1	3	0	3	2	9	134
Bird strike (collision with birds)	0	0	0	0	3	1	3	3	10	3	0	0	0	0	0	3	0	1	0	0	0	0	1	14
Stall	2	1	2	5	39	9	0	2	50	15	0	0	1	0	0	16	1	0	0	1	6	0	8	79
Spin	5	2	4	11	55	5	0	9	69	9	0	0	1	0	0	10	0	2	1	0	3	3	9	99
Spiral	3	0	0	3	15	2	0	6	23	2	0	0	0	0	0	2	0	1	0	0	0	0	1	29
Mush	18	9	0	27	128	23	2	20	173	25	0	1	6	0	2	34	3	1	3	0	2	5	14	248
Fire or explosion																								
In flight	2	0	0	2	8	3	0	2	13	1	0	0	1	0	0	2	0	0	1	0	0	0	1	18
On ground	0	0	0	0	1	1	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Airframe failure																								
In flight	2	0	0	2	30	10	0	0	40	0	0	0	3	1	0	4	1	0	4	0	0	1	6	52
On ground	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Engine tearaway	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	2
Engine failure or malfunction	41	31	3	75	407	102	7	73	589	62	0	3	24	7	4	100	12	2	38	0	0	8	60	824
Propeller/rotor failure	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Propeller	2	1	0	3	9	2	0	0	11	6	0	0	1	0	0	7	0	0	0	0	0	1	1	22
Tail rotor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Main rotor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Propeller/rotor acc. to person	1	1	1	3	13	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
Jet intake/exhaust acc. to person	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Propeller/jet rotor blast	2	0	0	2	1	1	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Turbulence	3	0	0	3	1	1	0	1	3	3	0	0	0	0	0	3	0	0	0	0	0	0	0	9
Hail damage to aircraft	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Lightning strike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Evasive maneuver	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
Uncontrolled altitude deviations	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ditching	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Missing aircraft, not recovered	0	1	0	1	11	3	0	0	14	0	0	0	0	1	0	1	0	0	1	0	0	1	2	18
Other/miscellaneous	2	0	1	3	10	5	3	2	20	1	0	0	1	1	1	4	0	0	1	0	0	2	3	30
Undetermined	0	0	0	0	11	1	0	0	12	0	0	0	0	0	0	0	0	0	1	0	0	1	2	14
TOTAL	305	445	53	803	2418	727	73	571	3789	271	4	8	157	32	20	492	36	37	109	2	21	76	281	5365

a/ Includes all small fixed-wing aircraft involved in collisions.

TABLE 36

TYPE OF ACCIDENT VS PHASE OF OPERATION
SMALL FIXED-WING AIRCRAFT
1966

TYPE OF ACCIDENT	PHASE OF OPERATION: STATIC				TAXI			TAKEOFF				IN-FLIGHT						LANDING									
	STARTING ENG. (s)	IDLING ENG. (s)	ENGINE RUNUP	OTHER	TO TAKEOFF	FROM LANDING	OTHER	GROUND RUN	INITIAL CLIMB	ABORTED	OTHER	CLIMB TO CRUISE	NORMAL CRUISE	DESCENDING	HOLDING (IFR)	ACROBATICS	BUZZING	OTHER	IN TRAFFIC PATTERN	FINAL APPROACH (VFR)	APPROACH (IFR)	LEVEL OFF/TOUCH DOWN	ROLLOUT	GO-AROUND (VFR)	MISSED APPROACH (IFR)	OTHER	UNKNOWN	TOTAL
Ground/waterloop/swerve	0	0	0	0	16	11	2	151	2	16	0	0	0	0	0	0	0	0	0	0	0	34	642	6	0	1	0	881
Dragged wingtip, pod or float	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	0	0	0	5
Wheels-up landing	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	412	5	0	0	0	0	421
Wheels-down landing in water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2
Gear collapsed	0	0	0	0	7	21	2	17	1	8	0	0	0	0	0	0	0	0	0	0	0	28	144	1	0	0	1	230
Gear Retracted	0	1	0	1	5	7	0	27	2	0	0	0	0	0	0	0	0	0	0	0	0	12	110	2	0	0	0	167
Hard landing	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	407	2	1	0	0	0	414
Nose/over down	0	3	1	0	33	48	4	10	0	10	0	0	0	0	0	0	0	0	0	0	0	4	80	0	0	0	0	193
Roll over	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Overshoot	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	24	0	93	209	0	0	0	0	327
Undershoot	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	162	1	24	0	1	0	0	0	188
Collision with aircraft a/																												
Both in flight	0	0	0	0	0	0	0	0	3	0	1	0	14	0	0	0	0	2	5	10	0	7	0	1	0	1	0	44
One airborne	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	6	6	1	0	0	0	16
Both on ground	0	1	2	0	8	6	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7	0	0	0	0	28
Collision with ground/water																												
Controlled	0	0	0	0	0	0	0	0	12	0	0	1	42	5	0	8	3	27	2	5	4	3	0	7	0	0	0	119
Uncontrolled	0	0	0	0	0	0	0	0	9	0	0	1	2	1	0	0	0	92	0	0	1	0	0	0	0	0	0	106
Collided with Wires/poles	0	0	0	0	2	8	3	2	17	0	0	0	9	0	0	1	3	66	1	33	2	1	5	3	0	0	0	156
Trees	0	0	0	0	3	1	2	4	17	4	0	0	30	2	0	2	3	25	3	7	4	3	9	9	0	1	0	129
Residence (s)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2
Other buildings	0	0	0	0	3	5	9	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	20
Fence, fenceposts	0	1	0	0	8	6	1	9	18	10	0	0	0	0	0	0	1	1	0	2	0	1	8	7	0	0	0	73
Electronic towers	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Runway or approach lights	0	0	0	0	1	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	7
Airport hazard	0	0	0	0	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	9
Animals	0	0	0	0	0	0	0	2	3	1	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	9
Crop	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	13	0	0	0	1	2	0	0	0	0	19
Flagman, loader	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	4
Ditches	0	0	0	0	2	5	1	8	0	15	0	0	0	0	0	0	0	0	0	0	0	0	24	2	0	0	1	58
Snowbank	0	0	0	0	1	1	0	4	2	1	0	0	0	0	0	0	0	0	0	3	0	1	8	0	0	0	0	21
Parked aircraft (Unattended, engines not running)																												
Automobile	5	3	0	0	13	5	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	49
Dirt bank	1	0	0	0	4	7	0	2	0	0	0	0	0	0	0	0	1	1	0	1	0	2	3	0	0	0	0	22
Other	0	0	0	0	2	0	1	5	1	2	0	0	0	0	0	0	0	1	0	1	0	1	7	3	0	0	0	24
Bird strike (collision with birds)	0	0	0	0	18	25	4	17	5	5	0	0	0	0	0	0	0	2	0	3	0	5	46	3	0	0	1	134
Stall	0	0	0	0	0	0	0	0	4	0	0	1	2	1	0	0	0	4	1	1	0	0	0	0	0	0	0	14
Spin	0	0	0	0	0	0	0	0	16	0	0	1	16	0	0	3	2	31	5	3	0	0	0	1	0	0	1	79
Spiral	0	0	0	0	0	0	0	0	16	0	0	2	28	0	0	14	3	20	2	2	1	0	0	4	0	0	0	99
Mush	0	0	0	0	0	0	0	0	8	0	0	0	5	1	0	0	0	5	2	5	0	0	0	3	0	0	0	29
Fire or Explosion																												
In flight	0	0	0	0	0	0	0	0	158	2	0	0	7	0	0	1	0	27	2	30	0	1	0	20	0	0	0	248
On ground	2	0	0	0	1	0	0	0	1	0	0	4	10	1	0	0	0	1	0	1	0	0	0	0	0	0	0	18
Airframe failure																												
In flight	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
On ground	0	0	0	0	0	0	0	0	1	0	0	1	33	2	0	5	0	8	0	0	1	0	0	0	0	0	1	52
Engine tearaway	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Engine failure or malfunction	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Propeller/rotor failure	0	0	0	0	0	0	0	7	203	0	0	26	344	40	1	4	2	63	45	63	3	1	0	22	0	0	0	824
Propeller	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Tail rotor	0	0	0	0	0	0	0	1	6	0	0	1	6	1	0	0	0	6	0	0	0	0	0	0	0	0	1	22
Main rotor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Propeller/rotor accident to person	7	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
Jet intake/exhause accident to person	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Propeller/jet/rotor blast	0	1	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	5
Turbulence	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	9
Hail damage to aircraft	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Lightning strike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Evasive maneuver	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Uncontrolled altitude deviation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ditching	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Missing aircraft, not recovered	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Other/miscellaneous	1	0	0	0	1	0	0	2	9	0	0	0	7	1	0	1	0	1	1	3	0	0	2	0	0	1	0	30
Undetermined	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	14
TOTAL	16	19	3	1	136	162	51	275	521	82	1	40	561	55	1	39	18	405	76	364	17	1055	1329	99	0	4	35	5365

a/ Includes all small fixed-wing aircraft involved in collisions.

TABLE 37

CAUSE/FACTOR TABLE

SMALL FIXED-WING AIRCRAFT
U. S. GENERAL AVIATION

1966

INVOLVES 5321 TOTAL ACCIDENTS
INVOLVES 531 FATAL ACCIDENTS

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
PILOT	432 81.36	11 2.07	433 81.54	3857 80.52	110 2.30	3864 80.67	4289 80.61	121 2.27	4297 80.76
PERSONNEL	33 6.21	7 1.32	39 7.34	337 7.04	35 .73	372 7.77	370 6.95	42 .79	411 7.72
AIRFRAME	35 6.59	1 .19	36 6.78	7 .15	1 .02	8 .17	42 .79	2 .04	44 .83
LANDING GEAR	.00	.00	.00	336 7.01	92 1.92	423 8.83	336 6.31	92 1.73	423 7.95
POWERPLANT	28 5.27	1 .19	29 5.46	323 6.74	20 .42	341 7.12	351 6.60	21 .39	370 6.95
SYSTEMS	2 .38	2 .38	4 .75	42 .88	21 .44	63 1.32	44 .83	23 .43	67 1.26
INSTRUMENTS/EQUIPMENT AND ACCESSORIES	2 .38	.00	2 .38	7 .15	7 .15	14 .29	9 .17	7 .13	16 .30
ROTORCRAFT	.00	.00	.00	.00	.00	.00	.00	.00	.00
AIRPORTS/AIRWAYS/FACILITIES	.00	1 .19	1 .19	61 1.27	259 5.41	318 6.64	61 1.15	260 4.89	319 6.00
WEATHER	8 1.51	164 30.89	172 32.39	118 2.46	530 11.06	639 13.34	126 2.37	694 13.04	811 15.24
TERRAIN	4 .75	26 4.90	30 5.65	26 .54	318 6.64	345 7.20	30 .56	344 6.46	375 7.05
MISCELLANEOUS	6 1.13	.00	6 1.13	107 2.23	23 .48	130 2.71	113 2.12	23 .43	136 2.56
UNDETERMINED	44 8.29	.00	44 8.29	17 .35	.00	17 .35	61 1.15	.00	61 1.15

* 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.

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

TABLE 37 (CONTINUED)

CAUSE/FACTOR TABLE

SMALL FIXED-WING AIRCRAFT
U. S. GENERAL AVIATION

1966

INVOLVES 5321 TOTAL ACCIDENTS
INVOLVES 531 FATAL ACCIDENTS

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
PILOT									
PILOT IN COMMAND									
ATTEMPTED OPERATION W/KNOWN DEFICIENCIES IN EQUIPMENT	3		3	21	1	22	24	1	25
ATTEMPTED OPERATION BEYOND EXPERIENCE/ABILITY LEVEL	11		11	25	8	33	36	8	44
BECAME LOST/DISORIENTED	8	2	10	46	4	50	54	6	60
CONTINUED VFR FLIGHT INTO ADVERSE WEATHER CONDITIONS	139		139	103	4	107	242	4	246
CONTINUED INTO KNOWN AREA OF SEVERE TURBULENCE	3		3	3		3	6		6
DELAYED ACTION IN ABORTING TAKEOFF				41		41	41		41
DELAYED IN INITIATING GO-AROUND	3		3	49	1	50	52	1	53
DIVERTED ATTENTION FROM OPERATION OF AIRCRAFT	12	1	13	43	10	53	55	11	66
EXCEEDED DESIGN STRESS LIMITS OF AIRCRAFT	9		9	6		6	15		15
FAILED TO EXTEND LANDING GEAR				210		210	210		210
RETRACTED GEAR PREMATURELY	1		1	19		19	20		20
INADVERTENTLY RETRACTED GEAR				102		102	102		102
FAILED TO SEE AND AVOID OTHER AIRCRAFT	14		14	38	1	39	52	1	53
FAILED TO SEE AND AVOID OBJECTS OR OBSTRUCTIONS	18		18	130		130	148		148
FAILED TO OBTAIN/MAINTAIN FLYING SPEED	135	1	136	311	1	312	446	2	448
MISJUDGED DISTANCE SPEED ALTITUDE OR CLEARANCE	1		1	2		2	3		3
FAILED TO USE OR INCORRECTLY USED MISC EQUIPMENT	3		3	10	3	13	13	3	16
FAILED TO FOLLOW APPROVED PROCEDURES DIRECTIVES ETC	1	1	2	13	2	15	14	3	17
IMPROPER OPERATION OF POWERPLANT + POWERPLANT CONTROLS	5	1	6	114	3	117	119	4	123
IMPROPER OPERATION OF BRAKES AND/OR FLIGHT CONTROLS				425	1	426	425	1	426
IMPROPER OPERATION OF FLIGHT CONTROLS	16		16	38		38	54		54
PREMATURE LIFT OFF				46	1	47	46	1	47
IMPROPER LEVEL OFF	2		2	298		298	300		300
IMPROPER IFR OPERATION	3		3	5		5	8		8
IMPROPER IN-FLIGHT DECISIONS OR PLANNING	10		10	46	2	48	56	2	58
IMPROPER COMPENSATION FOR WIND CONDITIONS				41		41	41		41
INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING	35	1	36	244	19	263	279	20	299
INADEQUATE SUPERVISION OF FLIGHT	4		4	138		138	142		142
LACK OF FAMILIARITY WITH AIRCRAFT				16	13	29	16	13	29
MISMANAGEMENT OF FUEL SYSTEM	12		12	146		146	158		158
EXERCISED POOR JUDGEMENT	24	2	26	109	1	110	133	3	136
OPERATED CARELESSLY				5	1	6	5	1	6
SELECTED UNSUITABLE TERRAIN	1		1	304	4	308	305	4	309
IMPROPER STARTING PROCEDURES	1		1	5		5	6		6
STARTED ENGINE WITHOUT PROPER ASSISTANCE/EQUIPMENT				40		40	40		40
TAXIED/PARKED WITHOUT PROPER ASSISTANCE				21	1	22	21	1	22
FAILED TO ASSURE THE GEAR WAS DOWN AND LOCKED				124		124	124		124
CONTROL INTERFERENCE				1		1	1		1
SPONTANEOUS-IMPROPER ACTION				7	2	9	7	2	9
MISJUDGED DISTANCE SPEED AND ALTITUDE	6		6	22		22	28		28
MISJUDGED DISTANCE AND SPEED	1		1	255		255	256		256
MISJUDGED DISTANCE	1		1	13		13	14		14
MISJUDGED DISTANCE AND ALTITUDE	2		2	128		128	130		130
MISJUDGED SPEED AND ALTITUDE	1		1	4	1	5	5	1	6
MISJUDGED SPEED				6		6	6		6
MISJUDGED SPEED AND CLEARANCE	1		1	2		2	3		3
MISJUDGED ALTITUDE AND CLEARANCE	9		9	12		12	21		21
MISJUDGED ALTITUDE	7		7	24	1	25	31	1	32
MISJUDGED CLEARANCE	10		10	77		77	87		87
INADEQUATE TRAINING OF STUDENT				1		1	1		1
MISUNDERSTANDING OF ORDERS OR INSTRUCTIONS				1		1	1		1
IMPROPER RECOVERY FROM BOUNCED LANDING	1		1	129	3	132	130	3	133
INCAPACITATION	5		5	2		2	7		7
PHYSICAL IMPAIRMENT	32	2	34	6	1	7	38	3	41
SPATIAL DISORIENTATION	80		80	7		7	87		87
PSYCHOLOGICAL CONDITION				1	1	2	1	1	2
MISUSED OR FAILED TO USE FLAPS		2	2	14	10	24	14	12	26
LEFT AIRCRAFT UNATTENDED ENGINE RUNNING				3		3	3		3
FAILED TO MAINTAIN DIRECTIONAL CONTROL	1		1	238	1	239	239	1	240
SELECTED WRONG RUNWAY RELATIVE TO EXISTING WIND	1		1	61	12	73	62	12	74
FAILED TO ABORT TAKEOFF	3		3	22		22	25		25

TABLE 37 (CONTINUED)

CAUSE/FACTOR TABLE

PILOT IN COMMAND (CONTINUED)	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
FAILED TO INITIATE GO-AROUND				41	5	46	41	5	46
DIRECT ENTRIES	7		7	16		16	23		23
SUBTOTAL	642	13	655	4430	118	4548	5072	131	5203
COPILOT									
INADVERTENTLY RETRACTED GEAR				3		3	3		3
FAILED TO FOLLOW APPROVED PROCEDURES DIRECTIVES ETC				1		1	1		1
IMPROPER OPERATION OF BRAKES AND/OR FLIGHT CONTROLS	1		1				1		1
IMPROPER LEVEL OFF				1		1	1		1
MISJUDGED DISTANCE AND ALTITUDE				1		1	1		1
FAILED TO MAINTAIN DIRECTIONAL CONTROL				1		1	1		1
SUBTOTAL	1		1	7		7	8		8
DUAL STUDENT									
DELAYED IN INITIATING GO-AROUND				1		1	1		1
DIVERTED ATTENTION FROM OPERATION OF AIRCRAFT				2		2	2		2
FAILED TO EXTEND LANDING GEAR				7		7	7		7
FAILED TO RETRACT LANDING GEAR				1		1	1		1
RETRACTED GEAR PREMATURELY				1		1	1		1
INADVERTENTLY RETRACTED GEAR				9		9	9		9
FAILED TO SEE OTHER AIRCRAFT				4		4	4		4
FAILED TO SEE AND AVOID OBJECTS AND OBSTRUCTIONS				6		6	6		6
FAILED TO OBTAIN/MAINTAIN FLYING SPEED	2		2	16		16	18		18
IMPROPER OPERATION OF POWERPLANT + POWERPLANT CONTROLS				4		4	4		4
IMPROPER OPERATION OF BRAKES AND/OR FLIGHT CONTROLS				26		26	26		26
IMPROPER OPERATION OF FLIGHT CONTROLS				4		4	4		4
PREMATURE LIFT-OFF				2		2	2		2
IMPROPER LEVEL OFF				23		23	23		23
INADEQUATE SUPERVISION OF FLIGHT				2		2	2		2
LACK OF FAMILIARITY WITH AIRCRAFT				1	1	2	1	1	2
MISMANAGEMENT OF FUEL SYSTEM				3		3	3		3
SELECTED UNSUITABLE TERRAIN				1		1	1		1
FAILED TO ASSURE THE GEAR WAS DOWN AND LOCKED				1		1	1		1
FAILURE TO RELINQUISH CONTROL				3	1	4	3	1	4
CONTROL INTERFERENCE				2		2	2		2
SPONTANEOUS-IMPROPER ACTION				9		9	9		9
MISJUDGED DISTANCE SPEED AND ALTITUDE				1		1	1		1
MISJUDGED DISTANCE AND SPEED				6		6	6		6
MISJUDGED DISTANCE AND ALTITUDE	1		1	19		19	20		20
MISJUDGED ALTITUDE				1		1	1		1
MISUNDERSTANDING OF ORDERS OR INSTRUCTIONS				2		2	2		2
IMPROPER RECOVERY FROM BOUNCED LANDING				1		1	1		1
SPATIAL DISORIENTATION	1		1	1		1	2		2
MISUSED OR FAILED TO USE FLAPS				1		1	1		1
FAILED TO MAINTAIN DIRECTIONAL CONTROL				7		7	7		7
FAILED TO INITIATE GO-AROUND				1		1	1		1
SUBTOTAL	4		4	168	2	170	172	2	174
CHECK PILOT									
FAILED TO SEE AND AVOID OBJECTS OR OBSTRUCTIONS				1		1	1		1
INADEQUATE SUPERVISION OF FLIGHT				3		3	3		3
SUBTOTAL				4		4	4		4
PERSONNEL									
FLIGHT INSTRUCTOR									
INADEQUATE SUPERVISION OF FLIGHT	1		1	7	1	8	8	1	9
INADEQUATE TRAINING OF STUDENT				8	5	13	8	5	13
DIRECT ENTRIES				1		1	1		1
MAINTENANCE SERVICING INSPECTION									
IMPROPER MAINTENANCE(MAINTENANCE PERSONNEL)		1	1	20	1	21	20	2	22
IMPROPER MAINTENANCE(OWNER PERSONNEL)				12		12	12		12
IMPROPERLY SERVICED AIRCRAFT(GROUND CREW)				3	1	4	3	1	4

TABLE 37 (CONTINUED) CAUSE/FACTOR TABLE

PERSONNEL (CONTINUED)	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
IMPROPERLY SERVICED AIRCRAFT(OWNER-PILOT)				4	1	5	4	1	5
INADEQUATE INSPECTION OF AIRCRAFT(MAINTENANCE PERSONNEL)	1	1	2	6	1	7	7	2	9
INADEQUATE INSPECTION OF AIRCRAFT(OWNER-PILOT PERSONNEL				5		5	5		5
INADEQUATE MAINTENANCE AND INSPECTION	8	1	9	167	10	177	175	11	186
OTHER				1		1	1		1
UNKNOWN/NOT REPORTED					1	1		1	1
OPERATIONAL SUPERVISORY PERSONNEL									
INADEQUATE SUPERVISION/TRAINING OF RAMP CREWS				1		1	1		1
WEATHER PERSONNEL									
INCORRECT WEATHER FORECAST	4	1	5		4	4	4	5	9
INCOMPLETE WEATHER REPORT	1		1				1		1
INADEQUATE/INCORRECT WEATHER BRIEFING				1		1	1		1
TRAFFIC CONTROL PERSONNEL									
FAILURE TO ADVISE OF UNSAFE WEATHER CONDITION		1	1					1	1
FAILURE TO ADVISE OF OTHER TRAFFIC		2	2					2	2
ISSUED IMPROPER OR CONFLICTING INSTRUCTIONS		1	1	1		1	1	1	2
INADEQUATE SPACING OF AIRCRAFT		2	2					2	2
AIRPORT SUPERVISORY PERSONNEL									
IMPROPER MAINTENANCE-AIRPORT FACILITIES				5	1	6	5	1	6
FAILURE TO NOTIFY OF UNSAFE CONDITION		1	1	14	1	15	14	2	16
IMPROPER/INADEQUATE SNOW REMOVAL				7	1	8	7	1	8
IMPROPER INSPECTION OF FACILITIES				2	1	3	2	1	3
OTHER				1		1	1		1
AIRWAYS FACILITIES PERSONNEL									
PRODUCTION-DESIGN									
SUBSTANDARD QUALITY CONTROL	1		1				1		1
INCORRECT FACTORY INSTALLATION				4		4	4		4
POOR/INADEQUATE DESIGN				3		3	3		3
MISCELLANEOUS-PERSONNEL									
PILOT OF OTHER AIRCRAFT	16		16	51	2	53	67	2	69
GROUND SIGNALMAN	3		3	3		3	6		6
SPECTATOR	1		1	2		2	3		3
GROUND CREWMAN	1		1	1	1	2	2	1	3
PASSENGER	3		3	7	1	8	10	1	11
DRIVER OF VEHICLE		1	1	14	3	17	14	4	18
OTHER				2		2	2		2
DIRECT ENTRIES				2		2	2		2
THIRD PILOT									
FLIGHT ENGINEER									
DISPATCHING									
SUBTOTAL	40	12	52	355	36	391	395	48	443
AIRFRAME									
WINGS									
SPARS	16		16				16		16
RIBS STRINGERS CAP STRIPS				1		1	1		1
BRACING WIRES STRUTS	3		3	1		1	4		4
SKIN AND ATTACHMENTS	4		4	1		1	5		5
WINGTIPS	3		3				3		3
WHEEL WELL DOORS				1		1	1		1
OTHER	3		3		1	1	3	1	4
FUSELAGE									
WINDSHIELDS WINDOWS CANOPIES				1		1	1		1
WHEEL WELL DOORS				1		1	1		1
LANDING GEAR									
MAIN GEAR-SHOCK ABSORBING ASSY STRUTS ATTACHMENTS ETC				32		32	32		32
NORMAL RETRACTION/EXTENSION ASSEMBLY				81	7	88	81	7	88

TABLE 37 (CONTINUED)

CAUSE/FACTOR TABLE

AIRFRAME (CONTINUED)

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TO
EMERGENCY/EXTENSION ASSEMBLY				19		19	19		
TAILWHEEL ASSEMBLIES				11	4	15	11	4	
NOSEWHEEL ASSEMBLIES				78	2	80	78	2	
WHEELS TIRES AXLES				25	2	27	25	2	
SKI ASSEMBLIES				2		2	2		
FLOAT ASSEMBLIES					3	3		3	
BRAKING SYSTEM				53	7	60	53	7	
BRAKING SYSTEM				2		2	2		
LANDING GEAR WARNING AND INDICATING COMPONENTS				3	58	61	3	58	
GEAR LOCKING MECHANISM				46	1	47	46	1	
SWITCHES LEVERS CRANKING MECHANISM ETC				7	5	12	7	5	
NOSEWHEEL STEERING				8	2	10	8	2	
OTHER					1	1		1	
DIRECT ENTRIES				19		19	19		
FLIGHT CONTROL SURFACES									
RUDDER SURFACES ATTACHMENTS	3		3	2		2	5		
AILERON SURFACES ATTACHMENTS	2		2				2		
HORIZONTAL STABILIZER ATTACHMENTS	6	1	7				6	1	
VERTICAL STABILIZER ATTACHMENTS	5		5				5		
OTHER	4		4				4		
SUBTOTAL	49	1	50	394	93	487	443	94	
POWERPLANT									
ENGINE STRUCTURE									
CRANKCASE	1		1	1		1	2		
CRANKSHAFT	1		1	8	1	9	9	1	
MASTER AND CONNECTING RODS				10		10	10		
CYLINDER ASSEMBLY				12		12	12		
PISTON PISTON RINGS				14		14	14		
VALVE ASSEMBLIES				20		20	20		
BLOWER IMPELLER ASSEMBLY				2		2	2		
MOUNT AND VIBRATION ISOLATORS	1		1	1	1	2	2	1	
OTHER	1		1	6		6	7		
IGNITION SYSTEM									
MAGNETOES				9		9	9		
SPARK PLUG	2		2	10	1	11	12	1	
LOW TENSION WIRING				2		2	2		
HIGH TENSION WIRING				1		1	1		
IGNITION HARNESS SHIELDING					1	1		1	
SWITCHES				1	1	2	1	1	
FUEL SYSTEM									
TANKS				3	1	4	3	1	
LINES AND FITTINGS	1		1	11		11	12		
SELECTOR VALVES	1		1	3		3	4		
FILTERS STRAINERS SCREENS				2	1	3	2	1	
PRIMING SYSTEM				1		1	1		
CARBURETOR	2		2	21		21	23		
PUMPS	1		1	10		10	11		
FUEL INJECTION SYSTEM	1		1	2		2	3		
VENTS DRAINS TANK CAPS				7	2	9	7	2	
RAM AIR ASSEMBLY				3		3	3		
OTHER				2		2	2		
LUBRICATING SYSTEM									
LINES HOSES FITTINGS				5	1	6	5	1	
FILTERS SCREENS				2		2	2		
PUMP-PRESSURE				2		2	2		
OIL COOLERS				1		1	1		
SEALS AND GASKETS				3		3	3		
OTHER				2	1	3	2	1	
COOLING SYSTEM									
PROPELLER AND ACCESSORIES									
BLADES				12		12	12		
HUBS				5		5	5		

TABLE 37 (CONTINUED)

CAUSE/FACTOR TABLE

POWERPLANT (CONTINUED)

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
HYDRAULIC PITCH CONTROL MECHANISM				2		2	2		2
SPINNERS DOMES				2	1	3	2	1	3
OTHER	1		1	1		1	2		2
EXHAUST SYSTEM									
MANIFOLDS				3		3	3		3
MUFFLERS	1		1	5		5	6		6
GASKETS	1		1	1		1	2		2
STACKS	1		1	2		2	3		3
BAFFLES				1		1	1		1
ENGINE ACCESSORIES									
GENERATORS				1		1	1		1
STARTERS				1		1	1		1
ENGINE CONTROLS-COCKPIT									
THROTTLE-POWER LEVER ASSEMBLIES				8		8	8		8
MIXTURE CONTROL ASSEMBLIES				1		1	1		1
INDUCTION AIR PREHEAT CONTROLS				1		1	1		1
OTHER				1		1	1		1
POWERPLANT-INSTRUMENTS									
FUEL PRESSURE GAUGE		1	1	1	7	8	1	8	9
MISCELLANEOUS									
POWERPLANT FAILURE FOR UNDETERMINED REASONS	12		12	98	1	99	110	1	111
DETONATION				1		1	1		1
DIRECT ENTRIES	2		2	13		13	15		15
REDUCTION GEAR ASSEMBLY									
GEARS ACCESSORY DRIVE				1		1	1		1
OTHER				1		1	1		1
COMPRESSOR ASSEMBLY									
COMBUSTION ASSEMBLY									
TURBINE ASSEMBLY									
ACCESSORY DRIVE ASSEMBLY									
LUBRICATING SYSTEM									
FUEL SYSTEM									
SAFETY SYSTEM									
IGNITION SYSTEM									
TORQUEMETER									
AIR BLEED									
EXHAUST SYSTEM									
THRUST REVERSER									
PROPELLER SYSTEM									
CONSTANT SPEED DRIVE									
POWER LEVER									
PROPELLER LEVER									
REVERSE THRUST LEVER									
ENGINE INDICATING EQUIPMENT									
ENGINE INSTALLATION									

TABLE 37 (CONTINUED)

CAUSE/FACTOR TABLE

POWERPLANT (CONTINUED)	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
SUBTOTAL	30	1	31	339	20	359	369	21	390
SYSTEMS									
ELECTRICAL SYSTEM				2	4	6	2	4	6
BATTERIES				2	5	7	2	5	7
GENERATORS/ALTERNATORS					1	1		1	1
RELAYS AND WIRING				2	4	6	2	4	6
MOTORS					2	2		2	2
SWITCHES									
HYDRAULIC SYSTEM				2		2	2		2
HYDRAULIC PUMPS				4		4	4		4
RESERVOIR LINES FITTINGS				10	1	11	10	1	11
SEALS				2		2	2		2
RELIEF VALVE				1		1	1		1
BY-PASS VALVE									
FLIGHT CONTROL SYSTEMS	1		1	5		5	6		6
AILERON AND AILERON TAB CONTROL SYSTEM	1	1	2	4		4	5	1	6
ELEVATOR AND ELEVATOR TAB CONTROL SYSTEM				4		4	4		4
RUDDER AND RUDDER TAB CONTROL SYSTEM				1		1	1		1
WING FLAP CONTROL SYSTEM HYDRAULIC					1	1		1	1
WING FLAP CONTROL SYSTEM MECHANICAL									
ANTI-ICING DE-ICING SYSTEMS				2		2	2		2
CARBURETOR DE-ICING SYSTEM									
AIR CONDITION HEATING AND PRESSURIZATION									
AUTO PILOT					1	1		1	1
GYROS									
FIRE WARNING SYSTEM									
FIRE EXTINGUISHER SYSTEM				1		1	1		1
PORTABLE									
OXYGEN SYSTEM									
OTHER SYSTEMS					2	2		2	[illegible]
PITOT SYSTEM		1	1					1	
OTHER				2		2	2		[illegible]
DIRECT ENTRIES									
SUBTOTAL	2	2	4	44	21	65	46	23	6[illegible]
INSTRUMENTS/EQUIPMENT AND ACCESSORIES									
FLIGHT AND NAVAGATION INSTRUMENTS				2	1	3	2	1	
ALTIMETERS	1		1	1	4	5	2	4	
AIRSPEED					1	1		1	
COURSE INDICATOR									
COMMUNICATIONS AND NAVIGATION EQUIPMENT					1	1		1	
TRANSMITTERS AND/OR RECEIVERS				1	1	2	1	1	
VOR RECEIVERS					1	1		1	
COMPASS RECEIVERS				1		1	1		
OTHER									
MISCELLANEOUS EQUIPMENT				1		1	1		
SPRAY DUSTING EQUIPMENT				1		1	1		
SIGN TOWING EQUIPMENT	1		1				1		
DIRECT ENTRIES									
SUBTOTAL	2		2	7	9	16	9	9	1

TABLE 37 (CONTINUED)

CAUSE/FACTOR TABLE

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
AIRPORTS/AIRWAYS/FACILITIES									
AIRPORT FACILITIES									
RUNWAY LIGHTING					2	2		2	2
TAXIWAY LIGHTING AND MARKING				3	1	4	3	1	4
OTHER					2	2		2	2
AIRPORT CONDITIONS									
WET RUNWAY				3	61	64	3	61	64
ICE/SLUSH ON RUNWAY				3	37	40	3	37	40
SNOW ON RUNWAY				10	38	48	10	38	48
SNOW WINDROWS				4	6	10	4	6	10
UNMARKED OBSTRUCTIONS				3	7	10	3	7	10
SOFT SHOULDERS					29	29		29	29
ROUGH WATER					4	4		4	4
HIGH VEGETATION		1	1		16	16		17	17
HIDDEN HAZARD				18	11	29	18	11	29
POORLY MAINTAINED RUNWAY SURFACE				12	15	27	12	15	27
SOFT RUNWAY				7	24	31	7	24	31
ICE/SLUSH ON RAMP/TAXIWAY				2	1	3	2	1	3
SNOW ON RAMP/TAXIWAY					2	2		2	2
SOFT SHOULDERS					3	3		3	3
OTHER				2	27	29	2	27	29
AIRWAYS FACILITIES									
SUBTOTAL		1	1	67	286	353	67	287	354
WEATHER									
LOW CEILING		123	123		74	74		197	197
RAIN		45	45		26	26		71	71
FOG		63	63	1	61	62	1	124	125
SNOW		19	19		20	20		39	39
HAIL					1	1		1	1
ICING CONDITIONS-INCLUDES SLEET FREEZING RAIN ETC	1	5	6	1	13	14	2	19	20
CONDITIONS CONDUCIVE TO CARB/INTRODUCTION SYSTEM ICING		8	8	3	29	32	3	37	40
UNFAVORABLE WIND CONDITIONS		3	3	86	221	307	86	224	310
SUDDEN WINDSHIFT				15	11	26	15	11	26
TURBULENCE IN FLIGHT CLEAR AIR					2	2		2	2
TURBULENCE ASSOCIATED W/CLOUDS THUNDERSTORMS	5	16	21	1	4	5	6	20	26
DOWNDRAFTS UPDRAFTS	1	5	6	7	53	60	8	58	66
LOCAL WHIRLWIND				7		7	7		7
LINE SQUALL		1	1		1	1		2	2
HIGH TEMPERATURE					20	20		20	20
OBSTRUCTIONS TO VISION		4	4	1	15	16	1	19	20
HIGH DENSITY ALTITUDE		10	10	1	63	64	1	73	74
THUNDERSTORM ACTIVITY	3	8	11		30	30	3	38	41
OTHER		1	1					1	1
SUBTOTAL	10	311	321	123	644	767	133	955	1088
TERRAIN									
WET SOFT GROUND				5	92	97	5	92	97
SNOW-COVERED				1	14	15	1	14	15
ICY					2	2		2	2
HIGH VEGETATION		1	1	3	42	45	3	43	46
HIDDEN OBSTRUCTIONS	1		1	5	8	13	6	8	14
ROUGH/UNEVEN		2	2	6	87	93	6	89	95
ROUGH WATER		2	2	1	9	10	1	11	12
GLASSY WATER	1	2	3		5	5	1	7	8

TABLE 37 (CONTINUED)

TERRAIN (CONTINUED)	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
HIGH OBSTRUCTIONS	2	19	21	2	43	45	4	62	66
LOUSE GRAVEL					5	5		5	5
SANDY		1	1	4	22	26	4	23	27
OTHER					3	3		3	3
SUBTOTAL	4	27	31	27	332	359	31	359	390
MISCELLANEOUS	1		1	14		14	15		15
BIRD COLLISION	2		2	16	2	18	18	2	20
VORTEX TURBULENCE				5		5	5		5
PROP/JET BLAST					1	1		1	1
STATIC DISCHARGE				10	5	15	10	5	15
EVASIVE MANEUVER TO AVOID COLLISION				4	7	11	4	7	11
UNQUALIFIED PERSON OPERATED AIRCRAFT				3	2	5	3	2	5
FOREIGN OBJECT DAMAGE	1		1				1		1
SMOKE IN COCKPIT	1		1	35	6	41	36	6	42
FOREIGN MATERIAL AFFECTING NORMAL OPERATIONS	44		44	17		17	61		61
UNDETERMINED	1		1	20		20	21		21
DIRECT ENTRIES	50		50	124	23	147	174	23	197
SUBTOTAL	834	368	1202	6089	1584	7673	6923	1952	8875
GRAND TOTAL									
MISCELLANEOUS ACTS CONDITIONS				1		1	1		1
ALTIMETER SETTING-INCORRECT		1	1	81	3	84	81	4	85
IMPROPER OPEN/FAILED TO USE CARB HEAT/DEICING EQUIP				6	120	126	6	120	126
CHECKLIST-FAILED TO USE				1		1	1		1
COWL FLAPS-IMPROPERLY POSITIONED				1	4	5	1	4	5
CREW COORDINATION-POOR				9	4	13	9	4	13
DISREGARD OF GOOD OPERATING PRACTICE	3		3	13	8	21	16	8	24
IMPROPER EMERGENCY PROCEDURES				1		1	1		1
FEATHERED WRONG ENGINE	1		1	5		5	6		6
GUST LOCKS ENGAGED				2	1	3	2	1	3
INSTRUCTIONS-MISINTERPRETED				1	3	4	1	3	4
INSTRUMENTS-MISREAD OR FAILED TO READ		1	1					1	1
SEAT BELT NOT FASTENED				29	10	39	29	10	39
NOT ALLIGNED WITH RUNWAY/INTENDED LANDING AREA	35	4	39	21	10	31	56	14	70
UNWARRENTED LOW FLYING					3	3		3	3
FAILED TO EXTEND THE LANDING FLAPS		1	1	2	5	7	2	6	8
FAILED TO USE ALL AVAILABLE RUNWAY					3	3		3	3
LANDED AT WRONG AIRPORT	5	1	6	34	10	44	39	11	50
INATTENTIVE TO FUEL SUPPLY	7	3	10	6	2	8	13	5	18
FLEW INTO BLIND CANYON				2	2	4	2	2	4
PREMATURE FLAP RETRACTION	1	1	2	12	22	34	13	23	36
POORLY PLANNED APPROACH	1		1	15	7	22	16	7	23
MISCALCULATED FUEL CONSUMPTION					3	3		3	3
JETTISONED LOAD		3	3		16	16		19	19
STOLEN OR UNAUTHORIZED USE OF AIRCRAFT					14	14		14	14
LANDED ON FOAMED RUNWAY				9	2	11	9	2	11
IMPROPERLY SECURED					1	1		1	1
BOGUS PART				4	16	20	4	16	20
ELECTRICAL FAILURE	2		2	15	10	25	17	10	27
ENGINE LOADED UP	3		3	50	5	55	53	5	58
FATIGUE FRACTURE				1		1	1		1
FUEL GRADE-IMPROPER				3		3	3		3
HYDRAULIC FAILURE				2		2	2		2
IMPROPER GRADE OIL-LUBRICATING SYSTEM				1	1	2	1	1	2
RPM-UNCONTROLLABLE-OVERSPEED				1	5	6	1	5	6
WINDSHIELD DIRTY FOGGY ETC-RESTRICTED VISION					1	1		1	1
WRONG PART				18	5	23	18	5	23
IMPROPER ALIGNMENT/ADJUSTMENT	1	4	5	3	19	22	4	23	27
FAILURE OF TWO OR MORE ENGINES	3	33	36	1	22	23	4	55	59
SEPARATION IN FLIGHT	1	1	2				1	1	2
FIRE IN CABIN COCKPIT BAGGAGE COMPARTMENT	1	1	2	3	5	8	4	6	10
FIRE IN ENGINE				6	2	8	6	2	8
CORRODED/CORROSION	1	1	2		2	2	1	3	4
INCORRECT TRIM SETTING									

TABLE 37 (CONTINUED)

CAUSE/FACTOR TABLE

MISCELLANEOUS ACTS CONDITIONS (CONTINUED)

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
CONGESTED TRAFFIC-PATTERN OR RAMP					7	7		7	7
PILOT FATIGUE					9	9		9	9
FUEL EXHAUSTION	4		4	165		165	169		169
FUEL CONTAMINATION-EXCLUSIVE OF WATER IN FUEL				18		18	18		18
PILOT SUFFERED HEART ATTACK	5		5	1		1	6		6
ALCOHOLIC IMPAIRMENT OF EFFICIENCY AND JUDGEMENT	36	2	38	5		5	41	2	43
HYPOXIA					1	1		1	1
CARBON MONOXIDE POISONING	3		3				3		3
ICE-ENGINE				1		1	1		1
ICE-CARBURETOR	2	1	3	47	5	52	49	6	55
AIRFRAME ICE	4	2	6	6	13	19	10	15	25
ICE-WINDSHIELD					4	4		4	4
IMPROPERLY LOADED AIRCRAFT-WEIGHT-AND/OR CG	1	9	10	5	10	15	6	19	25
INTERFERENCE WITH FLIGHT CONTROLS				9	1	10	9	1	10
WHITEOUT				1	1	2	1	1	2
SUNGLARE		8	8	1	33	34	1	41	42
LACK OF LUBRICATION-SPECIFIC PART NOT SYSTEM				12	7	19	12	7	19
OIL EXHAUSTION-ENGINE LUBRICATION SYSTEM	1		1	11	1	12	12	1	13
OIL CONTAMINATION				1		1	1		1
SIMULATED CONDITIONS	1	4	5	5	40	45	6	44	50
WATER IN FUEL	3		3	39	2	41	42	2	44
AIRCRAFT CAME TO REST IN WATER		46	46		71	71		117	117
FROZEN				4	1	5	4	1	5
MISSING	1		1	8	2	10	9	2	11
HYDROPLANING ON WET RUNWAY				1	2	3	1	2	3
OVERLOAD FAILURE	24	12	36	13	946	959	37	958	995
MATERIAL FAILURE	10	1	11	251	22	273	261	23	284
FUEL STARVATION	15	1	16	180		180	195	1	196
OIL STARVATION				9	2	11	9	2	11
IMPROPER CLEARANCE-TOLERANCE	1		1	7	1	8	8	1	9
FUEL SELECTOR POSITIONED BETWEEN TANKS	1		1	5	4	9	6	4	10
TIEDOWN LINES SNAPPED				1	2	3	1	2	3
FIRE OR UNDETERMINED ORIGIN	2		2	2		2	4		4
UNAPPROVED MODIFICATION		1	1	2	1	3	2	2	4
IMPROPER/INADEQUATE VENTING				2	1	3	2	1	3
ACTION LACK OF				2		2	2		2
POOR WELD	1	1	2	4	1	5	5	2	7
PREVIOUS DAMAGE		1	1	26	41	67	26	42	68
LEAK/LEAKAGE	1		1	18	13	31	19	13	32
LOW FLUID LEVEL				6	5	11	6	5	11
CIRCUIT BREAKER POPPED				1	24	25	1	24	25
LOW COMPRESSION				2		2	2		2
RUNWAY CLOSED				1	13	14	1	13	14
DOWNWIND		4	4	2	109	111	2	113	115
CARBON DEPOSITS	1		1	6	1	7	7	1	8
LANDED IN CONSTRUCTION AREA				2	10	12	2	10	12
OVER TORQUED					2	2		2	2
LOOSE PART/FITTING	1	1	2	5	4	9	6	5	11
BENT				4		4	4		4
BINDING	2		2	4		4	6		6
BRITTLE		1	1					1	1
BUCKLED	1		1				1		1
BURNED	1		1	2	2	4	3	2	5
COLLAPSED				1		1	1		1
CROSSED				1		1	1		1
DETERIORATED	1		1	1	1	2	2	1	3
DISCONNECTED		1	1	3	3	6	3	4	7
EXCESSIVE				4		4	4		4
ERRATIC		1	1		3	3		3	3
FLUTTER								1	1
GROUNDED		1	1	2		2	2		2
IMPROPERLY INSTALLED				17	2	19	17	3	20
JAMMED		1	1	24	3	27	24	3	27
NICKED				1		1	1		1
OBSTRUCTED				1		1	1		1
OPEN				1	2	3	1	2	3
OUT OF BALANCE					1	1		1	1
OVERHEATED				1		1	1		1
PRESSURE TOO LOW				3	1	4	3	1	4
PRESSURE NONE				3	1	4	3	1	4
SCORED							1		1
SHEARED	1		1	3		3	3		3

CAUSE/FACTOR TABLE

TABLE 37 (CONTINUED)

MISCELLANEOUS ACTS CONDITIONS (CONTINUED)	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENT		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	T
STICKING				1		1	1		
STRIPPED					2	2		2	
STUCK	1		1	2	1	3	3	1	
EXCESSIVE TEMPERATURE				2		2	2		
VIBRATION EXCESSIVE				4	3	7	4	3	
MALFUNCTION FOR UNDETERMINED REASON				3		3	3		

DIRECT ENTRY CAUSES

PILOT-INADEQUATE VISUAL CONTACT TO AVOID COLLISION
PILOT-ATTEMPTED DOWNWIND TAKEOFF OFF AIRPORT
PILOT-LIMITED EXPERIENCE
MISC-CHUTIST TOO NEAR NEXT MAN,RIPCRD SNAGED EQUIP
PWR PLT-FUEL STRAVATION FOR AN UNDETERMINED REASON
PILOT-FAILED TO LOCATE REPORTED CONFLICTNG TRAFFIC

PWR PLT-PARTIAL PWR LOSS FRONT ENGINE CAUSE UNKNOW
PILOT-IMPROPER DEPLANING PROEUDURES
PILOT-FAILED TO OBTAIN SUFF ALT.BEFORE ENTERNG MTS
PILOT FAILED TU OBTAIN ADE.ALT. BEFORE ENTERNG MTS
PWR PLT-BOTH MAIN FUEL CAPS LOOSE,FUEL SYPHONING
PILOT-ATTEMPT LDG PASS IN CONDITNS PREVENT GOAROND
PILOT-IMPROPER PASSENGER DEPLANING PROCEDURES
PILOT-FAILED TO ALLOW ADEQUATE T.O.INTERVAL
FLT INSTR-POORLY PLANNED FORCED LANDING
PILOT-MISIDENTIFICATION OF RUNWAY.
PILOT-MISCALCULATED LANDING RUNWAY REQUIREMENTS.
EQUIP-GYRO INST FAILURE FOR UNDETERMINED REASON.
PILOT-IMPROPERLY EXECUTED GO-AROUND.
PILOT-LOSS OF CONTROL FOR UNDETERMINED REASON.
PWR PLT-UNWANTED FEATHER NO 1 PROP UNDET REASON.
PILOT-SPRAY POISONING-(TEPP)-(DI SYSTOX).
PILOT-LOSS OF CONTROL FOR UNDETERMINED CAUSE.
PWR PLT-ENGINES WOULDNT AIRSTART.REASON IS UNKNOWN
PILOT-LOSS OF CONTROL FOR AN UNDETERMINED REASON.
PILOT-DEPLANED.WALKED INTO ROTATING PROPELLER.
PWR PLT-RIGHT ENG. AIR FILTER BOX BLOCKED BY SNOW.
LDG GR-BRAKES LOCKED BY FROZEN MOISTURE
LDG GR-RETRACTED FOR UNDETERMINED REASON
MISC-DESCENT WAS TOO STEEP PRECLUDING FUEL FLOW
LDG GR-RETRACTED FOR UNDETERMINED REASON
LDG GR-RETRACTED FOR UNDETERMINED REASON
LDG GR-NOSE GEAR RETRACTED FOR UNDETERMINED REASON
PWR PLT-CAMSHAFT DRIVE GEAR BOLTS FAILED.
MISC-ELECTRICAL FAILURE FOR UNDETERMINED REASON
MISC-SLUSH FROZE IN BRAKES
LDG GR-NOSE GEAR RETRACTED FOR UNDETERMINED REASON
MISC-PASSENGER. INADVERTENTLY RELEASED ESCAPE HATCH
MISC-ANTELOPE RAN ONTO RUNWAY.
LDG GR-RETRACTED FOR UNDETERMINED REASON.
PWR PLT-NO GASKET,NO.3 CYLINDER ROCKER BOX COVER.
LDG GR-NOSE GEAR FAILURE FOR UNDETERMINED CAUSE.
PWR PLT-SEPARATION IN FLIGHT-CAUSE UNDETERMINED.
PILOT-IMPROPER LANDING TECHNIQUE.
MISC-WATER CONTAMINATED FUEL SOURCE
PILOT-IMPROPERLY EXECUTED TAKEOFF.
PILOT-EXCEEDED AIRCRAFT CROSSWIND CAPABILITY.
MISC-4 DEER RAN ONTO RUNWAY IN FRONT OF AIRCRAFT.
PERSONNEL-CARELESS OPERATION BY MODEL OPERATOR.
MISC-SULPHUR DUST IGNITED AS HOPPER WAS CLOSED.
PILOT-NOT ALIGNED WITH RUNWAY.
MISC-DOGS CHASED DEER ACROSS RUNWAY.
PWR PLT-EXCESSIVE FUEL CONSUMPTION,CAUSE UNDETERMN
LDG GR-BEARING CAM FOLLOWER PART NO.CR-10-1 MISSNG
MISC-PILOTS FOOT STUCK BETWEEN BRAKE-RUDDER PEDALS
PILOT-POSITIONED MIXTURE CONTROL TO IDLE-CUT-OFF.
LDG GR-MALFUNCTION FOR UNDETERMINED REASON.
PWR PLT-INTAKE MANIFOLD CRACKED.
MISC-PILOTS FOOT WEDGED AGAINST LEFT RUDDER PEDAL.

DIRECT ENTRY CAUSES (CONTINUED)

PWR PLT-DETONATION IN ALL CYLINDERS.
LDG GR-BRAKES FAILED FOR UNDETERMINED CAUSE.
LDG GR-NOSE GEAR RETRACTED FOR UNDETERMINED REASON
MISC-BANNER TOW CABLE FOULED ON TAIL WHEEL.
LDG GR-NOSE GEAR FAILED FOR UNDETERMINED REASON.
MISC-COWS RAN ONTO RUNWAY.
PWR PLT-FUEL STARVATION FOR UNDETERMINED CAUSE.
LDG GR-FAILED TO EXTEND FOR UNDETERMINED REASON.
MISC-ENCOUNTERED TURBULENCE FROM PREVIOUS TURN.
SYSTEMS-CONTROL YOKE FAILED FOR UNDETERMINED CAUSE
MISC-DEER RAN ONTO RUNWAY.
PERSONNEL-NO FLAGMAN.
MISC-GROUNDED AIRCRAFT WAS DISPATCHED IN ERROR.
LDG GR-LEFT BRAKE BINDING FOR UNDETERMINED CAUSE.
MISC-AIRCRAFT STRUCK WILD DEER.
SYSTEMS-CONTROL STICK TORQUE TUBE WELD.
LDG GR-RETRACTED FOR UNDETERMINED CAUSE.
LDG GR-RETRACTED FOR UNDETERMINED CAUSE.
PILOT-MISREAD ALTIMETER AND DESCENDED INTO TREES.
PWR PLT-OIL FILLER CAP MISSING.
MISC-HORSE RAN INTO ROLLOUT PATH OF AIRCRAFT.
LDG GR-NORMAL GR.EXT.SYSTEM FAILED.CAUSE UNKNOWN.
LDG GR-LFT GR.RETRACT ROD BENT-CAUSE UNDETERMINED.
PWR PLT-FUEL STARVATION FOR UNDETERMINED CAUSE.

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

TABLE 38

INJURIES, ACCIDENTS
SMALL FIXED-WING AIRCRAFT
U.S. GENERAL AVIATION

1966

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	497	267	505	4093	3	5365
COPILOT	16	3	4	56		79
DUAL STUDENT	13	15	23	252		303
CHECK PILOT	3		1	11		15
FLIGHT ENGINEER						
NAVIGATOR				1		1
CABIN ATTENDANT				5		5
EXTRA CREW	5	1	1	16		23
PASSENGERS	523	194	310	3565		4592
TOTAL	1057	480	844	7999	3	ABOARD 10383
* OTHER-AIRCRAFT	2			14		16
OTHER-GROUND	5	9	7	10		31
GRAND TOTAL	1064	489	851	8023	3	10430

INVOLVES 5321 TOTAL ACCIDENTS
INVOLVES 531 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.

TABLE 39

INJURIES, ACCIDENTS
KIND OF FLYING
INSTRUCTIONAL - DUAL
SMALL FIXED-WING AIRCRAFT

1966

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT	16	14	31	244			305
COPILOT							
DUAL STUDENT	12	15	23	246			296
CHECK PILOT				2			2
FLIGHT ENGINEER							
NAVIGATOR							
CABIN ATTENDANT							
EXTRA CREW	1			1			2
PASSENGERS	5		1	50			56
TOTAL	34	29	55	543		ABOARD	661
* OTHER-AIRCRAFT	3	1	2	14			20
OTHER-GROUND				2			2
GRAND TOTAL	37	30	57	559			683

INVOLVES 300 TOTAL ACCIDENTS
INVOLVES 18 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.

TABLE 40

INJURIES, ACCIDENTS
KIND OF FLYING
INSTRUCTIONAL - SOLO
SMALL FIXED-WING AIRCRAFT

1966

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT	5	7	32	401			445
COPILOT							
DUAL STUDENT							
CHECK PILOT							
FLIGHT ENGINEER							
NAVIGATOR							
CABIN ATTENDANT							
EXTRA CREW				1			2
PASSENGERS	1						
TOTAL	6	7	32	402		ABOARD	447
* OTHER-AIRCRAFT	4	2	3	10			19
OTHER-GROUND		1					1
GRAND TOTAL	10	10	35	412			467

INVOLVES 444 TOTAL ACCIDENTS
INVOLVES 5 FATAL ACCIDENTS

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

TABLE 41

INJURIES, ACCIDENTS
KIND OF FLYING
INSTRUCTIONAL - ALL OTHER
SMALL FIXED-WING AIRCRAFT

1966

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT	12	2	4	35			53
COPILOT							
DUAL STUDENT				3			3
CHECK PILOT	3			7			10
FLIGHT ENGINEER							
NAVIGATOR							
CABIN ATTENDANT							
EXTRA CREW							
PASSENGERS				2			2
TOTAL	15	2	4	47		ABOARD	68
* OTHER-AIRCRAFT			1	4			5
OTHER-GROUND		1					1
GRAND TOTAL	15	3	5	51			74

INVOLVES 53 TOTAL ACCIDENTS
INVOLVES 12 FATAL ACCIDENTS

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

TABLE 42

INJURIES, ACCIDENTS
KIND OF FLYING
NONCOMMERCIAL - PLEASURE
SMALL FIXED-WING AIRCRAFT

1966

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT	289	139	226	1764			2418
COPILOT	8	3	2	8			21
DUAL STUDENT							
CHECK PILOT							
FLIGHT ENGINEER							
NAVIGATOR				4			4
CABIN ATTENDANT							2
EXTRA CREW	2						
PASSENGERS	390	144	228	2293			3055
TOTAL	689	286	456	4069		ABOARD	5500
* OTHER-AIRCRAFT	5		1	26			32
OTHER-GROUND	1	4	2	1			8
GRAND TOTAL	695	290	459	4096			5540

INVOLVES 2410 TOTAL ACCIDENTS
INVOLVES 315 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.

TABLE 43

INJURIES, ACCIDENTS
KIND OF FLYING
NONCOMMERCIAL - BUSINESS
SMALL FIXED-WING AIRCRAFT

1966

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT	66	26	58	577			727
COPILOT	4			5			9
DUAL STUDENT				1			1
CHECK PILOT							
FLIGHT ENGINEER							
NAVIGATOR							
CABIN ATTENDANT							
EXTRA CREW							
PASSENGERS	63	20	36	499			618
TOTAL	133	46	94	1082		ABOARD	1355
* OTHER-AIRCRAFT			2	8			10
OTHER-GROUND			1				1
GRAND TOTAL	133	46	97	1090			1366

INVOLVES 727 TOTAL ACCIDENTS
INVOLVES 69 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.

TABLE 44

INJURIES, ACCIDENTS
KIND OF FLYING
NONCOMMERCIAL - CORPORATE/EXECUTIVE
SMALL FIXED-WING AIRCRAFT

1966

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT	1	3	1	68			73
COPILOT	2		1	13			16
DUAL STUDENT							
CHECK PILOT							
FLIGHT ENGINEER							
NAVIGATOR							
CABIN ATTENDANT							
EXTRA CREW							
PASSENGERS	7	2	1	133			143
TOTAL	10	5	3	214		ABOARD	232
* OTHER-AIRCRAFT				4			4
OTHER-GROUND				1			1
GRAND TOTAL	10	5	3	219			237

INVOLVES 73 TOTAL ACCIDENTS
INVOLVES 2 FATAL ACCIDENTS

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

TABLE 45

INJURIES, ACCIDENTS
KIND OF FLYING
NONCOMMERCIAL - ALL OTHER
SMALL FIXED-WING AIRCRAFT

1966

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT	13	13	66	479			571
COPILOT				5			5
DUAL STUDENT				2			2
CHECK PILOT			1				1
FLIGHT ENGINEER							
NAVIGATOR							
CABIN ATTENDANT							
EXTRA CREW				2			2
PASSENGERS	4	2	8	67			81
TOTAL	17	15	75	555		ABOARD	662
* OTHER-AIRCRAFT			1	6			7
OTHER-GROUND				2			2
GRAND TOTAL	17	15	76	563			671

INVOLVES 571 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.

TABLE 46

INJURIES, ACCIDENTS
KIND OF FLYING
COMMERCIAL - AERIAL APPLICATION
SMALL FIXED-WING AIRCRAFT

1966

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT	38	29	38	166			271
COPILOT							
DUAL STUDENT							
CHECK PILOT							
FLIGHT ENGINEER							
NAVIGATOR							
CABIN ATTENDANT							
EXTRA CREW							
PASSENGERS							
TOTAL	38	29	38	166		ABOARD	271
OTHER-AIRCRAFT							
OTHER-GROUND	4	1	2	4			11
GRAND TOTAL	42	30	40	170			282

INVOLVES 271 TOTAL ACCIDENTS
INVOLVES 42 FATAL ACCIDENTS

TABLE 47

INJURIES, ACCIDENTS
KIND OF FLYING
COMMERCIAL - FIRE CONTROL
SMALL FIXED-WING AIRCRAFT

1966

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

INVOLVES 4 TOTAL ACCIDENTS
INVOLVES NO FATAL ACCIDENTS

TABLE 48

INJURIES, ACCIDENTS
KIND OF FLYING
COMMERCIAL - POWER AND PIPELINE PATROL
SMALL FIXED-WING AIRCRAFT

1966

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT		1	1	6			8
COPILOT							
DUAL STUDENT							
CHECK PILOT							
FLIGHT ENGINEER							
NAVIGATOR							
CABIN ATTENDANT							
EXTRA CREW		1		2			3
PASSENGERS						ABOARD	11
TOTAL		2	1	8			
OTHER-AIRCRAFT							
OTHER-GROUND							
GRAND TOTAL		2	1	8			11

INVOLVES 8 TOTAL ACCIDENTS
INVOLVES NO FATAL ACCIDENTS

TABLE 49

INJURIES, ACCIDENTS
KIND OF FLYING
COMMERCIAL - AIR TAXI - PASSENGER OPERATIONS
SMALL FIXED-WING AIRCRAFT

1966

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT	17	5	15	120			157
COPILOT	1			13			14
DUAL STUDENT							
CHECK PILOT							
FLIGHT ENGINEER							
NAVIGATOR							
CABIN ATTENDANT				1			1
EXTRA CREW							
PASSENGERS	32	15	21	324			392
TOTAL	50	20	36	458		ABOARD	564
* OTHER-AIRCRAFT	2		1	14			17
OTHER-GROUND		1					1
GRAND TOTAL	52	21	37	472			582

INVOLVES 157 TOTAL ACCIDENTS
INVOLVES 18 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.

TABLE 50

INJURIES, ACCIDENTS
KIND OF FLYING
COMMERCIAL - AIR TAXI - CARGO OPERATIONS
SMALL FIXED-WING AIRCRAFT

1966

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT	6	4	2	20			32
COPILOT				3			3
DUAL STUDENT							
CHECK PILOT							
FLIGHT ENGINEER							
NAVIGATOR							
CABIN ATTENDANT							
EXTRA CREW				3			3
PASSENGERS	2	1		4			7
TOTAL	8	5	2	30		ABOARD	45
OTHER-AIRCRAFT							
OTHER-GROUND							
GRAND TOTAL	8	5	2	30			45

INVOLVES 32 TOTAL ACCIDENTS
INVOLVES 6 FATAL ACCIDENTS

TABLE 51

INJURIES, ACCIDENTS
KIND OF FLYING
COMMERCIAL - ALL OTHER
SMALL FIXED-WING AIRCRAFT

1966

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT	4	1	2	13			20
COPILOT							
DUAL STUDENT							
CHECK PILOT							
FLIGHT ENGINEER							
NAVIGATOR							
CABIN ATTENDANT							
EXTRA CREW		1		3			4
PASSENGERS	1	1	1	13			16
TOTAL	5	3	3	29		ABOARD	40
OTHER-AIRCRAFT							
OTHER-GROUND							
GRAND TOTAL	5	3	3	29			40

INVOLVES 19 TOTAL ACCIDENTS
INVOLVES 3 FATAL ACCIDENTS

TABLE 52

INJURIES, ACCIDENTS
KIND OF FLYING
MISCELLANEOUS - TEST
SMALL FIXED-WING AIRCRAFT

1966

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT	3	7	2	24			36
COPILOT				2			2
DUAL STUDENT							
CHECK PILOT							
FLIGHT ENGINEER							
NAVIGATOR							
CABIN ATTENDANT							
EXTRA CREW	1			2			3
PASSENGERS				12			12
TOTAL	4	7	2	40		ABOARD	53
OTHER-AIRCRAFT							
OTHER-GROUND							
GRAND TOTAL	4	7	2	40			53

INVOLVES 36 TOTAL ACCIDENTS
INVOLVES 3 FATAL ACCIDENTS

TABLE 53

INJURIES, ACCIDENTS
KIND OF FLYING
MISCELLANEOUS - DEMONSTRATION
SMALL FIXED-WING AIRCRAFT

1966

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT	3	1	1	32			37
COPILOT				5			5
DUAL STUDENT	1						1
CHECK PILOT				2			2
FLIGHT ENGINEER							
NAVIGATOR							
CABIN ATTENDANT							
EXTRA CREW							
PASSENGERS	6	1		54			61
TOTAL	10	2	1	93		ABOARD	106
OTHER-AIRCRAFT							
OTHER-GROUND							
GRAND TOTAL	10	2	1	93			106

INVOLVES 37 TOTAL ACCIDENTS
INVOLVES 3 FATAL ACCIDENTS

TABLE 54

INJURIES, ACCIDENTS
KIND OF FLYING
MISCELLANEOUS - FERRY
SMALL FIXED-WING AIRCRAFT

1966

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT	6	7	17	79			109
COPILOT	1			1			2
DUAL STUDENT							
CHECK PILOT							
FLIGHT ENGINEER							
NAVIGATOR				1			1
CABIN ATTENDANT							
EXTRA CREW				1			1
PASSENGERS	1		3	23			27
TOTAL	8	7	20	105		ABOARD	140
OTHER-AIRCRAFT							
OTHER-GROUND		1	2				3
GRAND TOTAL	8	8	22	105			143

INVOLVES 109 TOTAL ACCIDENTS
INVOLVES 7 FATAL ACCIDENTS

TABLE 55

INJURIES, ACCIDENTS
KIND OF FLYING
MISCELLANEOUS - TOWING GLIDERS
SMALL FIXED-WING AIRCRAFT

1966

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

INVOLVES 2 TOTAL ACCIDENTS
INVOLVES 1 FATAL ACCIDENTS

TABLE 56

INJURIES, ACCIDENTS
KIND OF FLYING
MISCELLANEOUS - HUNTING
SMALL FIXED-WING AIRCRAFT

1966

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT	6	4	2	9			21
COPILOT							
DUAL STUDENT							
CHECK PILOT							
FLIGHT ENGINEER							
NAVIGATOR							1
CABIN ATTENDANT							17
EXTRA CREW	1						
PASSENGERS	3	2	2	10			
TOTAL	10	6	4	19		ABOARD	39
* OTHER-AIRCRAFT				2			2
OTHER-GROUND							
GRAND TOTAL	10	6	4	21			41

INVOLVES 21 TOTAL ACCIDENTS
INVOLVES 4 FATAL ACCIDENTS

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

TABLE 57

INJURIES, ACCIDENTS
KIND OF FLYING
MISCELLANEOUS - ALL OTHER
SMALL FIXED-WING AIRCRAFT

1966

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT	11	4	7	51	3		76
COPILOT			1	1			2
DUAL STUDENT							
CHECK PILOT							
FLIGHT ENGINEER							
NAVIGATOR							
CABIN ATTENDANT							
EXTRA CREW			1	4			5
PASSENGERS	8	5	9	73			95
TOTAL	19	9	18	129	3	ABOARD	178
* OTHER-AIRCRAFT				2			2
OTHER-GROUND							
GRAND TOTAL	19	9	18	131	3		180

INVOLVES 75 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.

Section III

GENERAL AVIATION ACCIDENTS

LARGE FIXED-WING AIRCRAFT

Section III

GENERAL AVIATION ACCIDENTS

LARGE FIXED-WING AIRCRAFT

TABLE 58

ACCIDENT, INJURY INDEX AND AIRCRAFT DAMAGE BY KIND OF FLYING
LARGE FIXED-WING AIRCRAFT

1966

	KIND OF FLYING																	
	INSTRUCTIONAL			NON-COMMERCIAL			COMMERCIAL						MISCELLANEOUS					
	TRAINING	OTHER	TOTAL	CORPORATE	OTHER	TOTAL	AERIAL APPLICATION	FIRE CONTROL	AIR TAXI PASSENGER	AIR TAXI CARGO	OTHER	TOTAL	TEST	DEMONSTRATION	FERRY	OTHER	TOTAL	GRAND TOTAL
TOTAL ACCIDENTS.....	0	2	2	13	10	23	0	4	2	0	3	9	0	0	7	6	13	47
INJURY INDEX																		
Fatal.....	0	0	0	1	4	5	0	0	1	0	1	2	0	0	0	2	2	9
Serious.....	0	0	0	2	0	2	0	1	1	0	0	2	0	0	0	0	0	4
Minor.....	0	0	0	1	2	3	0	1	0	0	0	1	0	0	1	0	1	5
None.....	0	2	2	9	4	13	0	2	0	0	2	4	0	0	6	4	10	29
AIRCRAFT DAMAGE																		
Destroyed.....	0	0	0	2	6	8	0	1	1	0	0	2	0	0	3	2	5	15
Substantial.....	0	2	2	11	4	15	0	3	0	0	2	5	0	0	4	4	8	30
Minor.....	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
None.....	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1
Total.....	0	2	2	13	10	23	0	4	2	0	3	9	0	0	7	6	13	47

TABLE 59

TYPE OF ACCIDENT VS KIND OF FLYING
LARGE FIXED-WING AIRCRAFT
1966

TYPE OF ACCIDENT	KIND OF FLYING																	
	INSTRUCTIONAL			NON-COMMERCIAL			COMMERCIAL						MISCELLANEOUS					
	TRAINING	OTHER	TOTAL	CORPORATE	OTHER	TOTAL	AERIAL APPLICATION	FIRE CONTROL	AIR TAXI PASSENGER	AIR TAXI CARGO	OTHER	TOTAL	TEST	DEMONSTRATION	FERRY	OTHER	TOTAL	GRAND TOTAL
Ground/waterloop-swerve	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	1	1	3
Dragged wingtip, pod, or float	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wheels-up landing	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	2
Wheels-down landing in water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gear Collapsed	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	2
Gear retracted	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
Hard landing	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
Nose over/down	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Roll over	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Overshoot	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	2
Undershoot	0	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	3
Collision with aircraft																		
Both in flight	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
One airborne	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Both on ground	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Collision with ground/water																		
Controlled	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
Uncontrolled	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1
Collided with																		
Wires/poles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trees	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
Residence (S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other buildings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fence, fenceposts	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Electronic tower	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Runway or approach lights	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Airport hazard	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Animals	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Crop	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Flagman, loader	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ditches	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	2
Snowbank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Parked aircraft																		
(unattended, engines not running)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Automobile	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dirt bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	1	2
Bird strike (collision with birds)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stall	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
Spin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spiral	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mush	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
Fire or explosion																		
In flight	0	0	0	1	1	2	0	0	0	0	0	0	0	0	1	0	1	3
On ground	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Airframe failure																		
Inflight	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
On ground	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Engine tearaway	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Engine failure or malfunction	0	0	0	1	1	2	0	2	1	0	0	3	0	0	3	1	4	9
Propeller/rotor failure	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Propeller	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1
Tail rotor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Main rotor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Propeller/rotor acc. to person	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1
Jet intake/exhaust acc. to person	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Propeller/jet/rotor blast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Turbulence	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hail damage to aircraft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lightning strike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Evasive maneuver	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Uncontrolled altitude deviations	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ditching	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Missing aircraft, not recovered	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Other/miscellaneous	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1	0	1	2
Undetermined	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1
TOTAL	0	2	2	13	10	23	0	4	2	0	3	9	0	0	7	6	13	47

TABLE 60

TYPE OF ACCIDENT VS. PHASE OF OPERATION

LARGE FIXED-WING AIRCRAFT

1966

TYPE OF ACCIDENT	PHASE OF OPERATION: STATIC				TAXI			TAKEOFF				IN-FLIGHT							LANDING									
	STARTING ENG. (S)	IDLING ENG. (S)	ENGINE RUNUP	OTHER	TO TAKEOFF	FROM LANDING	OTHER	GROUND RUN	INITIAL CLIMB	ABORTED	OTHER	CLIMB TO CRUISE	NORMAL CRUISE	DESCENDING	HOLDING (IFR)	ACROBATICS	BUZZING	OTHER	IN TRAFFIC PATTERN	FINAL APPROACH (VFR)	APPROACH (IFR)	LEVEL OFF/TOUCH DOWN	ROLLOUT	GO-AROUND (VFR)	MISSED APPROACH (IFR)	OTHER	UNKNOWN	TOTAL
Ground/waterloop-swerve								1														1	1					3
Dragged wingtip, pod, or float																												0
Wheels-up landing																						2						2
Wheels-down landing in water																												0
Gear collapsed					1																		1					2
Gear retracted								1	1																			2
Hard landing																						2						2
Nose over/down																												0
Roll over																												0
Overshoot																						1	1					2
Undershoot																				2	1							3
Collision with aircraft																												
Both in flight																												0
One airborne																												0
Both on ground																												0
Collision with ground/water																												
Controlled														1														1
Uncontrolled																		1										1
Collided with																												
Wires/poles																												0
Trees																		1										1
Residence (s)																												0
Other buildings																												0
Fence, fenceposts																												0
Electronic towers																												0
Runway or approach lights																												0
Airport hazard																												0
Animals																							1					1
Crop																												0
Flagman, loader																												0
Ditches					1					1																		2
Snowbank																							1					1
Parked aircraft (unattended, engines not running)						1																						1
Automobile																												0
Dirt bank																												0
Other						1																				1		2
Bird strike (collision with birds)																												0
Stall									1																			1
Spin																												0
Spiral																												0
Mush									1																			1
Fire or explosion																												
In flight									1				1						1									3
On ground	1																											1
Airframe failure																												
In flight																												0
On ground																												0
Engine tearaway																												0
Engine failure or malfunction								1	2			1	5															9
Propeller/rotor failure																												0
Propeller									1																			1
Tail rotor																												0
Main rotor																												0
Propeller/rotor acc. to person		1																										1
Jet intake/exhaust acc. to person																												0
Propeller/jet/rotor blast																												0
Turbulence																												0
Hail damage to aircraft																												0
Lightning strike																												0
Evasive maneuver																												0
Uncontrolled altitude deviations																												0
Ditching																												0
Missing aircraft, not recovered																											1	1
Other/miscellaneous									1	1																		2
Undetermined																											1	1
TOTAL	1	1	0	0	2	2	0	3	8	2	0	1	6	1	0	0	0	2	1	2	1	6	5	0	0	1	2	47

TABLE 61

CAUSE/FACTOR TABLE

LARGE FIXED-WING AIRCRAFT
U. S. GENERAL AVIATION

1966

INVOLVES 47 TOTAL ACCIDENTS
INVOLVES 9 FATAL ACCIDENTS

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
PILOT	3 33.33	.00	3 33.33	21 55.26	1 2.63	21 55.26	24 51.06	1 2.13	24 51.06
PERSONNEL	1 11.11	1 11.11	2 22.22	5 13.16	.00	5 13.16	6 12.77	1 2.13	7 14.89
AIRFRAME	.00	.00	.00	.00	.00	.00	.00	.00	.00
LANDING GEAR	.00	.00	.00	3 7.89	2 5.26	5 13.16	3 6.38	2 4.26	5 10.64
POWERPLANT	3 33.33	.00	3 33.33	8 21.05	.00	8 21.05	11 23.40	.00	11 23.40
SYSTEMS	.00	.00	.00	2 5.26	1 2.63	3 7.89	2 4.26	1 2.13	3 6.38
INSTRUMENTS/EQUIPMENT AND ACCESSORIES	.00	.00	.00	.00	.00	.00	.00	.00	.00
ROTORCRAFT	.00	.00	.00	.00	.00	.00	.00	.00	.00
AIRPORTS/AIRWAYS/FACILITIES	.00	.00	.00	1 2.63	6 15.79	7 18.42	1 2.13	6 12.77	7 14.89
WEATHER	.00	.00	.00	.00	5 13.16	5 13.16	.00	5 10.64	5 10.64
TERRAIN	.00	.00	.00	.00	.00	.00	.00	.00	.00
MISCELLANEOUS	.00	.00	.00	1 2.63	1 2.63	2 5.26	1 2.13	1 2.13	2 4.26
UNDETERMINED	1 11.11	.00	1 11.11	.00	.00	.00	1 2.13	.00	1 2.13

* 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.

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

TABLE 61 (CONTINUED)

CAUSE/FACTOR TABLE

LARGE FIXED-WING AIRCRAFT
U. S. GENERAL AVIATION

1966

INVOLVES 47 TOTAL ACCIDENTS
INVOLVES 9 FATAL ACCIDENTS

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
PILOT									
PILOT IN COMMAND									
CONTINUED VFR FLIGHT INTO ADVERSE WEATHER CONDITIONS				1		1	1		1
DELAYED ACTION IN ABORTING TAKEOFF				2	1	3	2	1	3
FAILED TO EXTEND LANDING GEAR				2		2	2		2
RETRACTED GEAR PREMATURELY				1		1	1		1
INADVERTENTLY RETRACTED GEAR				1		1	1		1
FAILED TO SEE AND AVOID OBJECTS OR OBSTRUCTIONS				1		1	1		1
FAILED TO OBTAIN/MAINTAIN FLYING SPEED	2		2	2		2	4		4
FAILED TO USE OR INCORRECTLY USED MISC EQUIPMENT				1		1	1		1
FAILED TO FOLLOW APPROVED PROCEDURES DIRECTIVES ETC	1		1				1		1
IMPROPER OPERATION OF POWERPLANT + POWERPLANT CONTROLS	2		2				2		2
IMPROPER OPERATION OF BRAKES AND/OR FLIGHT CONTROLS				1		1	1		1
PREMATURE LIFT OFF				1		1	1		1
IMPROPER LEVEL OFF				2		2	2		2
IMPROPER IFR OPERATION				1		1	1		1
IMPROPER IN-FLIGHT DECISIONS OR PLANNING	1		1				1		1
IMPROPER COMPENSATION FOR WIND CONDITIONS				1		1	1		1
INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING				2		2	2		2
INADEQUATE SUPERVISION OF FLIGHT				1		1	1		1
LACK OF FAMILIARITY WITH AIRCRAFT				1		1	1		1
EXERCISED POOR JUDGEMENT				1		1	1		1
SELECTED UNSUITABLE TERRAIN				1		1	1		1
MISJUDGED DISTANCE SPEED AND ALTITUDE				1		1	1		1
MISJUDGED DISTANCE AND ALTITUDE				2		2	2		2
MISJUDGED ALTITUDE	1		1				1		1
IMPROPER RECOVERY FROM BOUNCED LANDING				1		1	1		1
FAILED TO MAINTAIN DIRECTIONAL CONTROL				2		2	2		2
FAILED TO INITIATE GO-AROUND				1		1	1		1
DIRECT ENTRIES				1		1	1		1
SUBTOTAL	7		7	31	1	32	38	1	39
DUAL STUDENT									
IMPROPER LEVEL OFF				1		1	1		1
SUBTOTAL				1		1	1		1
PERSONNEL									
FLIGHT INSTRUCTOR									
MAINTENANCE SERVICING INSPECTION									
IMPROPER MAINTENANCE(MAINTENANCE PERSONNEL)				2		2	2		2
INADEQUATE INSPECTION OF AIRCRAFT(MAINTENANCE PERSONNEL)				2		2	2		2
INADEQUATE MAINTENANCE AND INSPECTION	1	1	2	2		2	3	1	4
OPERATIONAL SUPERVISORY PERSONNEL									
WEATHER PERSONNEL									
TRAFFIC CONTROL PERSONNEL									
AIRPORT SUPERVISORY PERSONNEL									
AIRWAYS FACILITIES PERSONNEL									
PRODUCTION-DESIGN									
MISCELLANEOUS-PERSONNEL									
DRIVER OF VEHICLE				1		1	1		1

TABLE 61 (CONTINUED) CAUSE/FACTOR TABLE

PERSONNEL (CONTINUED)

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOT
THIRD PILOT									
FLIGHT ENGINEER									
DISPATCHING									
SUBTOTAL	1	1	2	7		7	8	1	
POWERPLANT									
ENGINE STRUCTURE									
MASTER AND CONNECTING RODS	1		1				1		
PISTON PISTON RINGS	1		1	2		2	3		
IGNITION SYSTEM									
SPARK PLUG				1		1	1		
FUEL SYSTEM									
LINES AND FITTINGS				1		1	1		
LUBRICATING SYSTEM									
COOLING SYSTEM									
PROPELLER AND ACCESSORIES									
GOVERNORS	1		1				1		
EXHAUST SYSTEM									
MANIFOLDS				1		1	1		
ENGINE ACCESSORIES									
ENGINE CONTROLS-COCKPIT									
POWERPLANT-INSTRUMENTS									
MISCELLANEOUS									
POWERPLANT FAILURE FOR UNDETERMINED REASONS				1		1	1		
DETONATION				1		1	1		
DIRECT ENTRIES	1		1	2		2	3		
REDUCTION GEAR ASSEMBLY									
COMPRESSOR ASSEMBLY									
COMBUSTION ASSEMBLY									
TURBINE ASSEMBLY									
ACCESSORY DRIVE ASSEMBLY									
LUBRICATING SYSTEM									
FUEL SYSTEM									
SAFETY SYSTEM									
IGNITION SYSTEM									
TORQUEMETER									
AIR BLEED									
EXHAUST SYSTEM									
THRUST REVERSER									
PROPELLER SYSTEM									
CONSTANT SPEED DRIVE									

TABLE 61 (CONTINUED) CAUSE/FACTOR TABLE

POWERPLANT (CONTINUED)

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
POWER LEVER									
PROPELLER LEVER									
REVERSE THRUST LEVER									
ENGINE INDICATING EQUIPMENT									
ENGINE INSTALLATION									
SUBTOTAL	4		4	9		9	13		13
SYSTEMS									
ELECTRICAL SYSTEM									
HYDRAULIC SYSTEM									
RESERVOIR LINES FITTINGS				1	1	2	1	1	2
FLIGHT CONTROL SYSTEMS									
RUDDER AND RUDDER TAB CONTROL SYSTEM				1		1	1		1
FLIGHT CONTROL BOOST SYSTEMS					1	1		1	1
ANTI-ICING DE-ICING SYSTEMS									
AIR CONDITION HEATING AND PRESSURIZATION									
AUTO PILOT									
FIRE WARNING SYSTEM									
FIRE EXTINGUISHER SYSTEM									
OXYGEN SYSTEM									
OTHER SYSTEMS									
SUBTOTAL				2	2	4	2	2	4
AIRPORTS/AIRWAYS/FACILITIES									
AIRPORT FACILITIES									
AIRPORT CONDITIONS									
WET RUNWAY				1		1	1		1
ICE/SLUSH ON RUNWAY					1	1		1	1
SNOW ON RUNWAY					2	2		2	2
SNOW ON RAMP/TAXIWAY					1	1		1	1
SOFT SHOULDERS					1	1		1	1
OTHER				1	2	3	1	2	3
AIRWAYS FACILITIES									
SUBTOTAL				2	7	9	2	7	9
WEATHER									
LOW CEILING					2	2		2	2
RAIN					1	1		1	1
FOG					1	1		1	1
SNOW					2	2		2	2
UNFAVORABLE WIND CONDITIONS					1	1		1	1
OBSTRUCTIONS TO VISION					1	1		1	1
THUNDERSTORM ACTIVITY					2	2		2	2
SUBTOTAL					10	10		10	10
MISCELLANEOUS									
FOREIGN MATERIAL AFFECTING NORMAL OPERATIONS					1	1		1	1

TABLE 61 (CONTINUED)

CAUSE/FACTOR TABLE

MISCELLANEOUS (CONTINUED)	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
UNDETERMINED	1		1				1		1
DIRECT ENTRIES				1		1	1		1
SUBTOTAL	1		1	1	1	2	2	1	3
GRAND TOTAL	13	1	14	53	21	74	66	22	88
MISCELLANEOUS ACTS CONDITIONS	1		1		1	1	1	1	2
CHECKLIST-FAILED TO USE	1		1				1		1
CREW COORDINATION-POOR	2		2	1	1	2	3	1	4
IMPROPER EMERGENCY PROCEDURES					1	1		1	1
GUST LOCKS ENGAGED	1		1	1		1	2		2
INSTRUMENTS-MISREAD OR FAILED TO READ				1	1	2	1	1	2
HYDRAULIC FAILURE	1		1				1		1
RPM-UNCONTROLLABLE-OVERSPEED		1	1					1	1
WRONG PART					1	1		1	1
FAILURE OF TWO OR MORE ENGINES					2	2		2	2
FIRE IN ENGINE		1	1		2	2		3	3
AIRCRAFT CAME TO REST IN WATER				1		1	1		
MISSING				1		1	1		
HYDROPLANING ON WET RUNWAY					4	4		4	
OVERLOAD FAILURE	1		1	3	1	4	4	1	
MATERIAL FAILURE	1		1				1		
OIL STARVATION				1	1	2	1	1	
LEAK/LEAKAGE				1		1	1		
LOOSE PART/FITTING				1		1	1		
CROSSED					1	1		1	
EXCESSIVE								1	
IMPROPERLY INSTALLED				1		1	1		
PRESSURE NONE				1		1	1		
STUCK									

DIRECT ENTRY CAUSES

PILOT-MISIDENTIFIED LDG AREA IN UNFAVOR AIRPT COND
LDG GR-NOSE GR STRUT DID NOT EXTND REASON UNDETRMD
PWR PLT-FUEL FED ENG.NACELLE FIRE,CAUSE-UNDETERMIN
PWR PLT-INFLIGHT FUEL FIRE NO.2 ENG-CAUSE UNKNOWN
PWR PLT-FUEL FED ENGINE FIRE FOR UNDETERMINED CAUS
MISC-DEER CROSSED RUNWAY WHEN PILOT LANDED.

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

TABLE 62

INJURIES, ACCIDENTS
LARGE FIXED-WING AIRCRAFT
U. S. GENERAL AVIATION

1966

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT	6	5	3	33			47
COPILOT	3	2	2	26			33
DUAL STUDENT				1			1
CHECK PILOT							
FLIGHT ENGINEER				5			5
NAVIGATOR				1			1
CABIN ATTENDANT				2			2
EXTRA CREW				7			7
PASSENGERS	16	13	5	80			114
TOTAL	25	20	10	155		ABOARD	210
OTHER-AIRCRAFT							
OTHER-GROUND	2	1	8	1			12
GRAND TOTAL	27	21	18	156			222

INVOLVES 47 TOTAL ACCIDENTS
INVOLVES 9 FATAL ACCIDENTS

TABLE 63

INJURIES, ACCIDENTS
KIND OF FLYING
INSTRUCTIONAL - TRAINING
LARGE FIXED-WING AIRCRAFT

1966

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

INVOLVES NO TOTAL ACCIDENTS
INVOLVES NO FATAL ACCIDENTS

TABLE 64

INJURIES, ACCIDENTS
KIND OF FLYING
INSTRUCTIONAL - ALL OTHER
LARGE FIXED-WING AIRCRAFT

1966

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

INVOLVES 2 TOTAL ACCIDENTS
INVOLVES NO FATAL ACCIDENTS

TABLE 65

INJURIES, ACCIDENTS
KIND OF FLYING
NONCOMMERCIAL - CORPORATE
LARGE FIXED-WING AIRCRAFT

1966

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT	1	2		10			13
COPILOT	1	1		9			11
DUAL STUDENT							
CHECK PILOT							
FLIGHT ENGINEER							
NAVIGATOR							
CABIN ATTENDANT							
EXTRA CREW							
PASSENGERS	1	1	5	26			33
TOTAL	3	4	5	45		ABOARD	57
OTHER-AIRCRAFT							
OTHER-GROUND							
GRAND TOTAL	3	4	5	45			57

INVOLVES 13 TOTAL ACCIDENTS
INVOLVES 1 FATAL ACCIDENTS

TABLE 66

INJURIES, ACCIDENTS
KIND OF FLYING
NONCOMMERCIAL - ALL OTHER
LARGE FIXED-WING AIRCRAFT

1966

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT	3	1	2	4			10
COPILOT	2		1	3			6
DUAL STUDENT							
CHECK PILOT							
FLIGHT ENGINEER							
NAVIGATOR							
CABIN ATTENDANT							
EXTRA CREW							
PASSENGERS	13	3		7			23
TOTAL	18	4	3	14		ABOARD	39
OTHER-AIRCRAFT							
OTHER-GROUND	1		7				8
GRAND TOTAL	19	4	10	14			47

INVOLVES 10 TOTAL ACCIDENTS
INVOLVES 4 FATAL ACCIDENTS

TABLE 67

INJURIES, ACCIDENTS
KIND OF FLYING
COMMERCIAL - AERIAL APPLICATION
LARGE FIXED-WING AIRCRAFT

1966

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

INVOLVES NO TOTAL ACCIDENTS
INVOLVES NO FATAL ACCIDENTS

TABLE 68

INJURIES, ACCIDENTS
KIND OF FLYING
COMMERCIAL - FIRE CONTROL
LARGE FIXED-WING AIRCRAFT

1966

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

INVOLVES 4 TOTAL ACCIDENTS
INVOLVES NO FATAL ACCIDENTS

TABLE 69

INJURIES, ACCIDENTS
KIND OF FLYING
COMMERCIAL - AIR TAXI - PASSENGER OPERATIONS
LARGE FIXED-WING AIRCRAFT

1966

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT	1			1			2
COPILOT		1		1			2
DUAL STUDENT							
CHECK PILOT							
FLIGHT ENGINEER							
NAVIGATOR							
CABIN ATTENDANT				2			2
EXTRA CREW							
PASSENGERS	1	9		47			57
TOTAL	2	10		51		ABOARD	63
OTHER-AIRCRAFT							
OTHER-GROUND		1	1	1			3
GRAND TOTAL	2	11	1	52			66

INVOLVES 2 TOTAL ACCIDENTS
INVOLVES 1 FATAL ACCIDENTS

TABLE 70

INJURIES, ACCIDENTS
KIND OF FLYING
COMMERCIAL - AIR TAXI - CARGO OPERATIONS
LARGE FIXED-WING AIRCRAFT

1966

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

INVOLVES NO TOTAL ACCIDENTS
INVOLVES NO FATAL ACCIDENTS

TABLE 71

INJURIES, ACCIDENTS
KIND OF FLYING
COMMERCIAL - ALL OTHER
LARGE FIXED-WING AIRCRAFT

1966

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT				3			3
COPILOT				3			3
DUAL STUDENT							
CHECK PILOT				1			1
FLIGHT ENGINEER							
NAVIGATOR							
CABIN ATTENDANT							
EXTRA CREW							
PASSENGERS							
TOTAL				7		ABOARD	7
OTHER-AIRCRAFT							1
OTHER-GROUND	1						
GRAND TOTAL	1			7			8

INVOLVES 3 TOTAL ACCIDENTS
INVOLVES 1 FATAL ACCIDENTS

TABLE 72

INJURIES, ACCIDENTS
KIND OF FLYING
MISCELLANEOUS - TEST
LARGE FIXED-WING AIRCRAFT

1966

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

INVOLVES NO TOTAL ACCIDENTS
INVOLVES NO FATAL ACCIDENTS

TABLE 73

INJURIES, ACCIDENTS
KIND OF FLYING
MISCELLANEOUS - DEMONSTRATION
LARGE FIXED-WING AIRCRAFT

1966

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

INVOLVES NO TOTAL ACCIDENTS
INVOLVES NO FATAL ACCIDENTS

TABLE 74

INJURIES, ACCIDENTS
KIND OF FLYING
MISCELLANEOUS - FERRY
LARGE FIXED-WING AIRCRAFT

1966

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT				7			7
COPILOT			1	5			6
DUAL STUDENT							
CHECK PILOT							
FLIGHT ENGINEER				1			1
NAVIGATOR							
CABIN ATTENDANT							
EXTRA CREW							
PASSENGERS							
TOTAL			1	13		ABOARD	14
OTHER-AIRCRAFT							
OTHER-GROUND							
GRAND TOTAL			1	13			14

INVOLVES 7 TOTAL ACCIDENTS
INVOLVES NO FATAL ACCIDENTS

TABLE 75

INJURIES, ACCIDENTS
KIND OF FLYING
MISCELLANEOUS - ALL OTHER
LARGE FIXED-WING AIRCRAFT

1966

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT	1	1		4			6
COPILOT				4			4
DUAL STUDENT							
CHECK PILOT							
FLIGHT ENGINEER				2			2
NAVIGATOR				1			1
CABIN ATTENDANT							
EXTRA CREW				5			5
PASSENGERS	1						1
TOTAL	2	1		16		ABOARD	19
OTHER-AIRCRAFT							
OTHER-GROUND							
GRAND TOTAL	2	1		16			19

INVOLVES 6 TOTAL ACCIDENTS
INVOLVES 2 FATAL ACCIDENTS

Section IV

GENERAL AVIATION ACCIDENTS

ROTORCRAFT

Section IV

GENERAL AVIATION ACCIDENTS

AUTOGIRAFT

TABLE 76

ACCIDENTS, INJURY INDEX AND AIRCRAFT DAMAGE BY KIND OF FLYING

ROTORCRAFT ACCIDENTS

1966

	KIND OF FLYING																							
	INSTRUCTIONAL				NONCOMMERCIAL					COMMERCIAL								MISCELLANEOUS						
	DUAL	SOLO	OTHER	TOTAL	PLEASURE	BUSINESS	CORPORATE	OTHER	TOTAL	AERIAL APPLICATION	FIRE CONTROL	POWER PIPE LINE PATROL	AIR TAXI PASSENGER	AIR TAXI CARGO	CONSTRUCTION	OTHER	TOTAL	TEST	DEMONSTRATION	FERRY	SEARCH RESCUE	OTHER	TOTAL	GRAND TOTAL
TOTAL ACCIDENTS	23	4	5	32	34	22	11	27	94	52	3	3	22	4	2	54	140	3	7	8	4	21	43	309
INJURY INDEX																								
Fatal	0	0	1	1	4	3	3	0	10	2	0	0	0	0	1	7	10	0	0	2	0	4	6	27
Serious	5	0	0	5	4	3	2	4	13	8	1	0	4	0	0	3	16	1	0	1	1	4	7	41
Minor	7	2	1	10	6	2	1	1	10	11	1	1	5	2	0	14	34	1	1	1	1	2	6	60
None	11	2	3	16	20	14	5	22	61	31	1	2	13	2	1	30	80	1	6	4	2	11	24	181
Unknown	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AIRCRAFT DAMAGE																								
Destroyed ...	7	0	2	9	13	1	6	3	23	13	0	0	5	0	1	15	34	1	2	2	1	6	12	78
Substantial .	16	4	3	23	21	20	5	24	70	39	3	3	18	4	1	39	107	2	5	6	3	15	31	231
Minor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
None	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	23	4	5	32	34	22	11	27	94	52	3	3	23	4	2	54	141	3	7	8	4	22	44	311

TABLE 77

TYPE OF ACCIDENT VS. KIND OF FLYING
ROTORCRAFT
1966

TYPE OF ACCIDENT	KIND OF FLYING: INSTRUCTIONAL				NON-COMMERCIAL					COMMERCIAL								MISCELLANEOUS						GRAND TOTAL
	DUAL	SOLO	OTHER	TOTAL	PLEASURE	BUSINESS	CORPORATE	OTHER	TOTAL	AERIAL APPLICATION	FIRE CONTROL	POWER PIPE/ LINE PATROL	AIR TAXI PASSENGER	AIR TAXI CARGO	CONSTRUCTION	OTHER	TOTAL	TEST	DEMONSTRATION	FERRY	SEARCH/RESCUE	OTHER	TOTAL	
Ground/waterloop/swerve	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Dragged wingtip, pod, or float	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Wheels-up landing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Wheels-down landing in water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Gear collapsed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	1	
Gear retracted	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Hard landing	3	1	0	4	2	4	1	4	11	0	1	0	1	0	0	4	6	1	0	0	1	1	3	2
Nose over/down	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Roll over	2	1	1	4	0	1	0	0	1	1	0	0	1	0	0	1	3	0	1	0	0	0	1	
Overshoot	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	
Undershoot	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	1	0	1	0	0	0	1	
Collision with aircraft a/																								
Both in flight	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	2	2	
One airborne	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Both on ground	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Collision with ground/water																								
Controlled	3	1	1	5	1	1	1	3	6	6	0	0	4	0	0	3	13	0	0	0	0	0	0	
Uncontrolled	1	1	1	3	2	3	0	0	5	1	0	0	0	0	0	5	6	1	0	0	0	0	1	
Collided with																								
Wires/poles	0	0	0	0	3	1	1	1	6	17	0	1	2	0	2	6	28	0	1	1	0	2	4	
Trees	0	0	0	0	3	0	0	1	4	2	1	0	1	0	0	2	6	0	0	0	1	1	2	
Residence (s)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Other buildings	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	1	1	
Fence, fenceposts	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	
Electronic towers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Airport hazard	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Animals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Crop	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	0	0	0	0	0	0	
Flagman, loader	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Ditches	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Snowbank	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Parked aircraft (unattended, engines not running)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Automobile	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	
Dirt bank	0	0	0	0	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Other	0	0	0	0	1	2	0	0	3	4	0	1	0	1	0	2	8	0	0	0	0	0	0	
Bird strike (collision with birds)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stall	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	1	1	1	0	0	0	0	1	
Spin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	
Spiral	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	
Mush	0	0	0	0	3	1	1	3	8	5	0	0	2	0	0	0	7	0	1	0	0	0	1	
Fire or explosion																								
In flight	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
On ground	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Airframe failure																								
In flight	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	
On ground	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	
Engine tearaway	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Engine failure or malfunction	7	0	1	8	10	3	4	11	28	6	0	0	4	0	0	19	29	0	3	4	0	8	15	
Propeller/rotor failure	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Propeller	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Tail rotor	5	0	0	5	2	1	2	0	5	2	0	0	3	0	0	2	7	0	0	1	0	2	3	
Main rotor	0	0	0	0	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0	1	1	0	2	
Propeller/rotor accidents to person	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	
Jet intake/exhaust accident to person	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Propeller/jet/rotor blast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Turbulence	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	4	0	0	0	0	0	0	
Hail damage to aircraft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Lightning strike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Evasive maneuver	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Uncontrolled altitude deviations	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Ditching	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Missing aircraft, not recovered	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Other/Miscellaneous	0	0	0	0	2	1	0	1	4	5	0	0	1	2	0	2	10	0	0	0	1	2	3	
Undetermined	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL	23	4	5	32	34	22	11	27	94	52	3	3	23	4	2	54	141	3	7	8	4	22	44	

a/ Includes all rotorcraft involved in collisions.

TABLE 78

TYPE OF ACCIDENT VS PHASE OF OPERATION

ROTORCRAFT

1966

TYPE OF ACCIDENT	PHASE OF OPERATION																									
	STATIC				TAXI		TAKEOFF					IN-FLIGHT						LANDING								
	STARTING ENG. (S)	ENGINE RUNUP	IDLING ROTORS	OTHER	GROUND TAXI	AERIAL TAXI	INITIAL CLIMB	VERTICAL	RUNNING	ABORTED	OTHER	CLIMB TO CRUISE	NORMAL CRUISE	HOVERING	POWER-ON DESCENT	AUTOROTATIVE DESCENT	OTHER	IN TRAFFIC TRAFFIC (VFR)	APPROACH	TOUCHDOWN	ROLL-ON	POWER-ON VERTICAL	POWER OFF AUTO-ROTATIVE	OTHER	UNKNOWN	GRAND TOTAL
Ground/waterloop/swerve	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Dragged wingtip, pod, or float	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Wheels-up landing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wheels-down landing in water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gear collapsed	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Gear retracted	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hard landing	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	6	1	9	5	0	0	24
Nose over/down	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Roll over	0	0	0	0	0	0	0	5	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	9
Overshoot	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Undershoot	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	0	3
Collision with aircraft a/																										
Both in flight	0	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0	4
One airborne	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Both on ground	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Collision with ground/water																										
Controlled	0	0	0	0	0	0	0	2	0	2	0	0	1	2	4	1	9	0	0	0	0	1	0	2	0	24
Uncontrolled	0	0	0	0	0	1	0	2	0	2	0	0	0	1	0	0	9	0	0	0	0	0	0	0	0	15
Collided with																										
Wires/poles	0	0	0	0	0	1	4	0	0	0	0	0	8	2	3	0	17	0	2	0	0	1	0	0	0	38
Trees	0	0	0	0	0	1	1	1	0	1	0	0	2	1	0	0	2	0	0	0	0	2	1	0	0	12
Residence (s)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other buildings	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	3
Fence, fenceposts	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
Electronic towers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Runway or approach lights	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Airport hazard	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Animals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Crop	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2
Flagman, loader	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ditches	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Snowbank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Parked aircraft (unattended, engines not running)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Automobile	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Dirt bank	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
Other	0	1	0	0	0	1	0	3	0	0	0	0	0	2	0	0	1	0	1	1	0	1	0	0	0	11
Bird strike (collision with birds)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stall	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Spin	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Spiral	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Mush	0	0	0	0	0	0	4	2	0	0	0	0	1	3	0	0	3	3	0	0	0	0	0	0	0	16
Fire or explosion																										
In flight	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
On ground	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Airframe failure																										
In flight	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
On ground	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Engine tearaway	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Engine failure or malfunction	0	0	0	0	0	1	23	2	2	0	0	0	30	2	3	3	8	1	4	0	0	0	1	0	0	80
Propeller/rotor failure	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Propeller	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tail rotor	0	1	0	0	0	2	1	2	0	0	0	1	6	1	0	0	3	1	1	0	0	1	0	0	0	20
Main rotor	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	1	0	0	0	0	0	0	4
Propeller/rotor acc. to person	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Jet intake/exhaust acc. to person	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Propeller/jet rotor blast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Turbulence	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	4
Hail damage to aircraft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lightning strike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Evasive maneuver	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Uncontrolled altitude deviations	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ditching	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Missing aircraft, not recovered	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other/miscellaneous	0	0	2	1	0	0	2	0	0	1	1	0	3	1	0	0	3	0	1	0	0	2	0	0	0	17
Undetermined	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	1	3	8	1	0	11	38	23	2	11	2	1	60	16	11	4	60	5	14	9	1	20	7	3	0	311

a/ Includes all rotorcraft involved in collisions.

TABLE 79

CAUSE/FACTOR TABLE

ROTORCRAFT
U. S. GENERAL AVIATION

1966

INVOLVES 309 TOTAL ACCIDENTS
INVOLVES 27 FATAL ACCIDENTS

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
PILOT	17 62.96	1 3.70	17 62.96	216 76.60	9 3.19	216 76.60	233 75.40	10 3.24	233 75.40
PERSONNEL	6 22.22	.00	6 22.22	26 9.22	4 1.42	29 10.28	32 10.36	4 1.29	35 11.33
AIRFRAME	.00	.00	.00	.00	.00	.00	.00	.00	.00
LANDING GEAR	.00	.00	.00	2 .71	.00	2 .71	2 .65	.00	2 .65
POWERPLANT	2 7.41	.00	2 7.41	35 12.41	3 1.06	38 13.48	37 11.97	3 .97	40 12.94
SYSTEMS	.00	.00	.00	.00	.00	.00	.00	.00	.00
INSTRUMENTS/EQUIPMENT AND ACCESSORIES	.00	.00	.00	1 .35	1 .35	2 .71	1 .32	1 .32	2 .65
ROTORCRAFT	4 14.81	.00	4 14.81	22 7.80	4 1.42	26 9.22	26 8.41	4 1.29	30 9.71
AIRPORTS/AIRWAYS/FACILITIES	.00	.00	.00	.00	2 .71	2 .71	.00	2 .65	2 .65
WEATHER	1 3.70	1 3.70	2 7.41	10 3.55	43 15.25	50 17.73	11 3.56	44 14.24	52 16.83
TERRAIN	.00	1 3.70	1 3.70	7 2.48	35 12.41	42 14.89	7 2.27	36 11.65	43 13.92
MISCELLANEOUS	2 7.41	.00	2 7.41	20 7.09	2 .71	22 7.80	22 7.12	2 .65	24 7.77
UNDETERMINED	.00	.00	.00	.00	.00	.00	.00	.00	.00

* 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.

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

TABLE 79 (CONT'D)

CAUSE/FACTOR TABLE

ROTORCRAFT
U. S. GENERAL AVIATION

1966

INVOLVES 309 TOTAL ACCIDENTS
INVOLVES 27 FATAL ACCIDENTS

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
PILOT									
PILOT IN COMMAND									
ATTEMPTED OPERATION W/KNOWN DEFICIENCIES IN EQUIPMENT				2	1	3	2	1	3
ATTEMPTED OPERATION BEYOND EXPERIENCE/ABILITY LEVEL				1	1	2	1	1	2
CONTINUED VFR FLIGHT INTO ADVERSE WEATHER CONDITIONS				2		2	2		2
CONTINUED INTO KNOWN AREA OF SEVERE TURBULENCE				1		1	1		1
DIVERTED ATTENTION FROM OPERATION OF AIRCRAFT				3		3	3		3
FAILED TO SEE AND AVOID OTHER AIRCRAFT	2		2	1		1	3		3
FAILED TO SEE AND AVOID OBJECTS OR OBSTRUCTIONS	4		4	29		29	33		33
FAILED TO OBTAIN/MAINTAIN FLYING SPEED	1		1	12		12	13		13
FAILED TO MAINTAIN ADEQUATE ROTOR RPM	2		2	39	1	40	41	1	42
FAILED TO USE OR INCORRECTLY USED MISC EQUIPMENT				1	1	2	1	1	2
FAILED TO FOLLOW APPROVED PROCEDURES DIRECTIVES ETC				1		1	1		1
IMPROPER OPERATION OF POWERPLANT + POWERPLANT CONTROLS	1		1	14		14	15		15
IMPROPER OPERATION OF FLIGHT CONTROLS	2		2	24		24	26		26
PREMATURE LIFT OFF				1		1	1		1
IMPROPER LEVEL OFF				16		16	16		16
IMPROPER IN-FLIGHT DECISIONS OR PLANNING				1		1	1		1
IMPROPER COMPENSATION FOR WIND CONDITIONS				3		3	3		3
INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING	2	1	3	38		38	40	1	41
INADEQUATE SUPERVISION OF FLIGHT				13		13	13		13
LACK OF FAMILIARITY WITH AIRCRAFT				2	2	4	2	2	4
MISMANAGEMENT OF FUEL SYSTEM				1		1	1		1
EXERCISED POOR JUDGEMENT	1		1	15		15	16		16
OPERATED CARELESSLY	1		1	2		2	3		3
SELECTED UNSUITABLE TERRAIN	1		1	9	1	10	10	1	11
TAXIED/PARKED WITHOUT PROPER ASSISTANCE				1		1	1		1
SPONTANEOUS-IMPROPER ACTION	1		1	7	1	8	8	1	9
MISJUDGED DISTANCE SPEED AND ALTITUDE				2		2	2		2
MISJUDGED DISTANCE AND SPEED				1		1	1		1
MISJUDGED DISTANCE				2		2	2		2
MISJUDGED DISTANCE AND ALTITUDE				1		1	1		1
MISJUDGED SPEED AND ALTITUDE	1		1	8	1	9	9	1	10
MISJUDGED SPEED	1		1				1		1
MISJUDGED ALTITUDE AND CLEARANCE				1		1	1		1
MISJUDGED ALTITUDE				6		6	6		6
MISJUDGED CLEARANCE	2		2	13		13	15		15
MISUNDERSTANDING OF ORDERS OR INSTRUCTIONS				1		1	1		1
IMPROPER RECOVERY FROM BOUNCED LANDING				1		1	1		1
SPATIAL DISORIENTATION					1	1		1	1
PSYCHOLOGICAL CONDITION					1	1	1		1
LEFT AIRCRAFT UNATTENDED ENGINE RUNNING				1		1	1		1
FAILED TO MAINTAIN DIRECTIONAL CONTROL				2		2	2		2
FAILED TO INITIATE GO-AROUND					1	1		1	1
DIRECT ENTRIES	3		3	9		9	12		12
SUBTOTAL	25	1	26	287	12	299	312	13	325
DUAL STUDENT									
FAILED TO MAINTAIN ADEQUATE ROTOR RPM				4		4	4		4
IMPROPER OPERATION OF POWERPLANT + POWERPLANT CONTROLS				2		2	2		2
IMPROPER OPERATION OF FLIGHT CONTROLS				5		5	5		5
IMPROPER COMPENSATION FOR WIND CONDITIONS				1		1	1		1
SPONTANEOUS-IMPROPER ACTION				2		2	2		2
SUBTOTAL				14		14	14		14
PERSONNEL									
FLIGHT INSTRUCTOR									
DIRECT ENTRIES				1		1	1		1

TABLE 79 (CONTINUED)

CAUSE/FACTOR TABLE

PERSONNEL (CONTINUED)	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
MAINTENANCE SERVICING INSPECTION				1		1	1		1
IMPROPER MAINTENANCE(MAINTENANCE PERSONNEL)				2		2	2		2
IMPROPER MAINTENANCE(OWNER PERSONNEL)				1		1	1		1
IMPROPERLY SERVICED AIRCRAFT(GROUND CREW)				2		2	2		2
IMPROPERLY SERVICED AIRCRAFT(OWNER-PILOT)									
INADEQUATE MAINTENANCE AND INSPECTION	2		2	10	2	12	12	2	14
OPERATIONAL SUPERVISORY PERSONNEL				1	1	2	1	1	2
FAILURE TO PROVIDE ADEQ DIRECTIVES MANUALS EQUIPMENT				1		1	1		1
DEFICIENCY COMPANY MAINTAINED EQMPT SERVICES REGULATION									
WEATHER PERSONNEL									
TRAFFIC CONTROL PERSONNEL									
AIRPORT SUPERVISORY PERSONNEL									
AIRWAYS FACILITIES PERSONNEL									
PRODUCTION-DESIGN	2		2	1		1	3		3
SUBSTANDARD QUALITY CONTROL									
MISCELLANEOUS-PERSONNEL	2		2	1		1	3		3
PILOT OF OTHER AIRCRAFT				2		2	2		2
GROUND SIGNALMAN				2		2	2		2
GROUND CREWMAN				1		1	1		1
DRIVER OF VEHICLE					1	1		1	1
OTHER	1		1	2		2	3		3
DIRECT ENTRIES									
THIRD PILOT									
FLIGHT ENGINEER									
DISPATCHING									
SUBTOTAL	7		7	28	4	32	35	4	39
POWERPLANT									
ENGINE STRUCTURE				3		3	3		3
MASTER AND CONNECTING RODS				1		1	1		1
VALVE ASSEMBLIES				1		1	1		1
BLOWER IMPELLER ASSEMBLY				1		1	1		1
OTHER									
IGNITION SYSTEM	1		1	2		2	3		3
MAGNETOES				2		2	2		2
SPARK PLUG									
FUEL SYSTEM				5		5	5		5
CARBURETOR				2		2	2		2
FUEL INJECTION SYSTEM				1		1	1		1
OTHER									
LUBRICATING SYSTEM									
COOLING SYSTEM				1		1	1		1
OTHER									
PROPELLER AND ACCESSORIES									
EXHAUST SYSTEM				1		1	1		1
GASKETS				2		2	2		2
CLAMPS				4		4	4		4
EXTERNAL SUPERCHARGER									
ENGINE ACCESSORIES									
ENGINE CONTROLS-COCKPIT				2		2	2		2
THROTTLE-POWER LEVER ASSEMBLIES									

TABLE 79 (CONTINUED)

CAUSE/FACTOR TABLE

POWERPLANT (CONTINUED)

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
POWERPLANT-INSTRUMENTS									
FUEL PRESSURE GAUGE					2	2		2	2
OTHER					1	1		1	1
MISCELLANEOUS									
POWERPLANT FAILURE FOR UNDETERMINED REASONS	1		1	11		11	12		12
DIRECT ENTRIES				3		3	3		3
REDUCTION GEAR ASSEMBLY									
COMPRESSOR ASSEMBLY									
COMBUSTION ASSEMBLY									
TURBINE ASSEMBLY									
ACCESSORY DRIVE ASSEMBLY									
LUBRICATING SYSTEM									
FUEL SYSTEM									
SAFETY SYSTEM									
IGNITION SYSTEM									
TORQUEMETER									
AIR BLEED									
EXHAUST SYSTEM									
THRUST REVERSER									
PROPELLER SYSTEM									
CONSTANT SPEED DRIVE									
POWER LEVER									
PROPELLER LEVER									
REVERSE THRUST LEVER									
ENGINE INDICATING EQUIPMENT									
ENGINE INSTALLATION									
SUBTOTAL	2		2	42	3	45	44	3	47
INSTRUMENTS/EQUIPMENT AND ACCESSORIES									
FLIGHT AND NAVAGATION INSTRUMENTS									
COMMUNICATIONS AND NAVIGATION EQUIPMENT									
MISCELLANEOUS EQUIPMENT									
SPRAY DUSTING EQUIPMENT				1	1	2	1	1	2
SUBTOTAL				1	1	2	1	1	2
ROTORCRAFT									
ROTOR ASSEMBLIES									
MAINROTOR BLADES	1		1	2		2	3		3
TAIL ROTOR BLADES	1		1	7		7	8		8
BEARINGS				1		1	1		1
OTHER				2		2	2		2
TRANSMISSION ROTOR DRIVE SYSTEM									

TABLE 79 (CONTINUED)

CAUSE/FACTOR TABLE

ROTORCRAFT (CONTINUED)	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
TAIL ROTOR DRIVE SHAFT ASSEMBLY				1		1	1		1
TAIL ROTOR GEAR BOX	1		1	1		1	2		2
CLUTCH ASSEMBLY				3	1	4	3	1	4
FLIGHT CONTROL SYSTEMS				2	2	4	2	2	4
CYCLIC PITCH CONTROL SYSTEM					1	1		1	1
COLLECTIVE PITCH CONTROL SYSTEM				3		3	3		3
TAIL ROTOR PITCH CONTROL SYSTEM				1		1	1		1
STABILIZING SURFACES-DAMPERS	1		1				1		1
OTHER									
MISCELLANEOUS UNITS AND ASSEMBLIES									
SUBTOTAL	4		4	23	4	27	27	4	31
AIRPORTS/AIRWAYS/FACILITIES									
AIRPORT FACILITIES									
AIRPORT CONDITIONS					1	1		1	1
POORLY MAINTAINED RUNWAY SURFACE					1	1		1	1
OTHER									
AIRWAYS FACILITIES									
SUBTOTAL					2	2		2	2
WEATHER									
LOW CEILING					1	1		1	1
FOG					2	2		2	2
SNOW					1	1		1	1
ICING CONDITIONS-INCLUDES SLEET FREEZING RAIN ETC				1		1	1		1
CONDITIONS CONDUCIVE TO CARB/INTRODUCTION SYSTEM ICING					2	2		2	2
UNFAVORABLE WIND CONDITIONS				2	8	10	2	8	10
SUDDEN WINDSHIFT				1	1	2	1	1	2
TURBULENCE IN FLIGHT CLEAR AIR				1		1	1		1
DOWNDRAFTS UPDRAFTS				2	5	7	2	5	7
HIGH TEMPERATURE					6	6		6	6
OBSTRUCTIONS TO VISION					1	1		1	1
HIGH DENSITY ALTITUDE	1	1	2	3	21	24	4	22	26
SUBTOTAL	1	1	2	10	48	58	11	49	60
TERRAIN									
WET SOFT GROUND				1	4	5	1	4	5
SNOW-COVERED					5	5		5	5
HIGH VEGETATION				1	6	7	1	6	7
HIDDEN OBSTRUCTIONS					2	2		2	2
ROUGH/UNEVEN				1	8	9	1	8	9
GLASSY WATER				1	1	2	1	1	2
HIGH OBSTRUCTIONS		1	1	3	10	13	3	11	14
SANDY					1	1		1	1
OTHER				1	2	3	1	2	3
SUBTOTAL		1	1	8	39	47	8	40	48
MISCELLANEOUS				1		1	1		1
VORTEX TURBULENCE				3	1	4	3	1	4
FOREIGN OBJECT DAMAGE				2	1	3	2	1	3
FOREIGN MATERIAL AFFECTING NORMAL OPERATIONS	2		2	14		14	16		16
DIRECT ENTRIES									
SUBTOTAL	2		2	20	2	22	22	2	24
GRAND TOTAL	41	3	44	433	115	548	474	118	592

TABLE 79 (CONTINUED)

CAUSE/FACTOR TABLE

MISCELLANEOUS ACTS CONDITIONS (CONTINUED)

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
MISCELLANEOUS ACTS CONDITIONS									
IMPROPER OPEN/FAILED TO USE CARB HEAT/DEICING EQUIP				4		4	4		4
DISREGARD OF GOOD OPERATING PRACTICE				1	1	2	1	1	2
GUST LOCKS ENGAGED				1		1	1		1
INSTRUCTIONS-MISINTERPRETED					1	1		1	1
SEAT BELT NOT FASTENED					1	1		1	1
UNWARRENTED LOW FLYING	1		1	2		2	3		3
INATTENTIVE TO FUEL SUPPLY				3		3	3		3
POORLY PLANNED APPROACH				3	1	4	3	1	4
JETTISONED LOAD					6	6		6	6
IMPROPERLY SECURED				2	2	4	2	2	4
ENGINE LOADED UP				3	1	4	3	1	4
FATIGUE FRACTURE	1	1	2	11		11	12	1	13
WRONG PART					1	1		1	1
IMPROPER ALIGNMENT/ADJUSTMENT				1		1	1		1
SEPARATION IN FLIGHT		1	1		12	12		13	13
FIRE IN CABIN COCKPIT BAGGAGE COMPARTMENT					1	1		1	1
FIRE IN ENGINE					1	1		1	1
LATERAL IMBALANCE				4	1	5	4	1	5
INCORRECT TRIM SETTING					1	1		1	1
FUEL EXHAUSTION				5	1	6	5	1	6
ALCOHOLIC IMPAIRMENT OF EFFICIENCY AND JUDGEMENT	1		1				1		1
ICE-CARBURETOR				2		2	2		2
IMPROPERLY LOADED AIRCRAFT-WEIGHT-AND/OR CG				6	1	7	6	1	7
INTERFERENCE WITH FLIGHT CONTROLS				1		1	1		1
WHITEOUT				1		1	1		1
SUNGLARE		3	3	1	2	3	1	5	6
LACK OF LUBRICATION-SPECIFIC PART NOT SYSTEM				2	1	3	2	1	3
SIMULATED CONDITIONS	1		1	12	9	21	13	9	22
WATER IN FUEL				4		4	4		4
AIRCRAFT CAME TO REST IN WATER		2	2		14	14		16	16
MISSING		1	1	1	1	2	1	2	3
OVERLOAD FAILURE				2	8	10	2	8	10
MATERIAL FAILURE	2		2	11	2	13	13	2	15
FUEL STARVATION				7		7	7		7
IMPROPER CLEARANCE-TOLERANCE				2		2	2		2
UNAPPROVED MODIFICATION				1		1	1		1
PREVIOUS DAMAGE					2	2		2	2
DOWNWIND					4	4		4	4
CARBON DEPOSITS				1		1	1		1
LOOSE PART/FITTING				2		2	2		2
GROUND RESONANCE				4		4	4		4
BINDING					1	1		1	1
CROSSED				1		1	1		1
DISCONNECTED		1	1	1	1	2	1	2	3
FRICTION EXCESSIVE				1		1	1		1
IMPROPERLY INSTALLED	1	1	2	2		2	3	1	4
JAMMED	1		1				1		1
OBSTRUCTED				1		1	1		1
OUT OF BALANCE				2		2	2		2
OVERHEATED					1	1		1	1
VIBRATION EXCESSIVE				3		3	3		3
WARPED				1		1	1		1

DIRECT ENTRY CAUSES

MISC-CLOGGED SPRAY TANK EQUALIZER TUBE
PILOT-IMPROPERLY EXECUTED AUTOROTATIVE LANDING.
MISC-RIGHT LANDING SKID FROZEN IN SNOW AT LIFTOFF
PILOT-FAILED TO ASSURE CART WAS CLEAR OF AIRCRAFT.
FLT INSTR-INADEQUATE INSTRUCTION.
PERSONNEL-INADEQUATE OPERATIONAL INSTRUCTIONS.
PILOT-IMPROPERLY EXECUTED PRECISION MANEUVER.
PILOT-FAILED TO ADEQUATELY CLEAR AREA BEFOR TAKOF
PILOT-IMPROPER HELICOPTER DEPLAING PROCEDURES
MISC-GROUND RESONANCE FOR AN UNDETERMINED CAUSE
PWR PLT-TURBO SUPERCHARGER WASTE GATE VALVE.
P PILOT-IMPROPERLY EXECUTED AUTOROTATIVE LANDING.
PILOT-MADE DOWNWIND TAKEOFF FROM CONFINED AREA.

TABLE 79 (CONTINUED)

DIRECT ENTRY CAUSES (CONTINUED)

PILOT-IMPROPERLY EXECUTED EMERGENCY LANDING.
PILOT-IMPROPERLY EXECUTED AUTOROTATIVE LANDING.
ROTORCFT-HEEL OF LEFT SKID SNAGGED ON TRAILER.
PILOT-RELEASED UNSECURED COLLECTIVE PITCH CONTROL.
ROTORCFT-TAIL ROTOR ASSEMBLY.
ROTOCFT-LFT SKID STRUCK EARTH HUMMOCK AFTER TDOWN.
PILOT-FAILED TO OBTAIN TRANSLATIONAL LIFT.
ROTORCFT-INADVERTENT CLUTCH DISENGAGEMENT.
PERSONNEL-PASSENGER WALKED INTO TAIL ROTOR.
ROTORCFT-CLUTCH SLIPPAGE FOR UNDETERMINED CAUSE.
PERSONNEL-GRND CREW DID NOT PROPRLY CLEAR LDG AREA
PILOT-INADVERTENT DOWNWIND LANDING.
ROTORCFT-TAIL ROTOR QUILL SHAFT BEARING,PN 9505K.
PWR PLT-ALTITUDE COMPENSATOR MALFUNCTIONED.
PWR PLT-TURBINE WHEEL RUBBED AGAINST CASE HOUSING.
ROTORCFT-CLUTCH SLIPPAGE.
ROTORCFT-LOSS OF LIFT DUE TO ICE ACCRETION.
ROTORCFT-HEAD FORK ASSEMBLY STRAP P/N-6D.
ROTORCFT-T/R HUB RETENTION BOLT PN 47-641-052-3.
ROTORCFT-TRANSMISSION MOUNTING BRACKETS.
PILOT-FAILED TO REMOVE ALL TIE DOWN LINES.
ROTORCFT-SLIPPAGE CAUSED BY GLAZED FRICTION SHOES.

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

TABLE 80

INJURIES, ACCIDENTS
ROTORCRAFT
U. S. GENERAL AVIATION

1966

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT	22	33	60	196			311
COPILOT				2			2
DUAL STUDENT		4	7	13			24
CHECK PILOT	1			1			2
FLIGHT ENGINEER							
NAVIGATOR							
CABIN ATTENDANT							
EXTRA CREW			2	4			6
PASSENGERS	27	27	36	135			225
TOTAL	50	64	105	351		ABOARD	570
OTHER-AIRCRAFT							
OTHER-GROUND	2	1	3	1			7
GRAND TOTAL	52	65	108	352			577

INVOLVES 309 TOTAL ACCIDENTS
INVOLVES 27 FATAL ACCIDENTS

TABLE 81

INJURIES, ACCIDENTS
KIND OF FLYING
INSTRUCTIONAL - DUAL
ROTORCRAFT

1966

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT		3	8	12			23
COPILOT							
DUAL STUDENT		4	6	13			23
CHECK PILOT							
FLIGHT ENGINEER							
NAVIGATOR							
CABIN ATTENDANT							
EXTRA CREW							
PASSENGERS							
TOTAL		7	14	25		ABOARD	46
OTHER-AIRCRAFT							
OTHER-GROUND							
GRAND TOTAL		7	14	25			46

INVOLVES 23 TOTAL ACCIDENTS
INVOLVES NO FATAL ACCIDENTS

TABLE 82

INJURIES, ACCIDENTS
KIND OF FLYING
INSTRUCTIONAL - SOLO
ROTORCRAFT

1966

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

INVOLVES 4 TOTAL ACCIDENTS
INVOLVES NO FATAL ACCIDENTS

TABLE 83

INJURIES, ACCIDENTS
KIND OF FLYING
INSTRUCTIONAL - ALL OTHER
ROTORCRAFT

1966

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

INVOLVES 5 TOTAL ACCIDENTS
INVOLVES 1 FATAL ACCIDENTS

TABLE 84

INJURIES, ACCIDENTS
KIND OF FLYING
NONCOMMERCIAL - PLEASURE
ROTORCRAFT

1966

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT	4	4	6	20			34
COPILOT							
DUAL STUDENT							
CHECK PILOT							
FLIGHT ENGINEER							
NAVIGATOR							
CABIN ATTENDANT							
EXTRA CREW							
PASSENGERS			1	17			18
TOTAL	4	4	7	37		ABOARD	52
OTHER-AIRCRAFT							
OTHER-GROUND							
GRAND TOTAL	4	4	7	37			52

INVOLVES 34 TOTAL ACCIDENTS
INVOLVES 4 FATAL ACCIDENTS

TABLE 85

INJURIES, ACCIDENTS
KIND OF FLYING
NONCOMMERCIAL - BUSINESS
ROTORCRAFT

1966

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT		1	4	17			22
COPILOT							
DUAL STUDENT							
CHECK PILOT							
FLIGHT ENGINEER							
NAVIGATOR							
CABIN ATTENDANT							
EXTRA CREW							
PASSENGERS	2	2	4	14			22
TOTAL	2	3	8	31		ABOARD	44
OTHER-AIRCRAFT							1
OTHER-GROUND	1						
GRAND TOTAL	3	3	8	31			45

INVOLVES 22 TOTAL ACCIDENTS
INVOLVES 3 FATAL ACCIDENTS

TABLE 86

INJURIES, ACCIDENTS
KIND OF FLYING
NONCOMMERCIAL - CORPORATE
ROTORCRAFT

1966

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT	2	2	2	5			11
COPILOT							
DUAL STUDENT							
CHECK PILOT							
FLIGHT ENGINEER							
NAVIGATOR							
CABIN ATTENDANT							
EXTRA CREW				1			1
PASSENGERS	1	4	6	8			19
TOTAL	3	6	8	14		ABOARD	31
OTHER-AIRCRAFT							
OTHER-GROUND							
GRAND TOTAL	3	6	8	14			31

INVOLVES 11 TOTAL ACCIDENTS
INVOLVES 3 FATAL ACCIDENTS

TABLE 87

INJURIES, ACCIDENTS
KIND OF FLYING
NONCOMMERCIAL - ALL OTHER
ROTORCRAFT

1966

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT		4	1	22			27
COPILOT				1			1
DUAL STUDENT							
CHECK PILOT							
FLIGHT ENGINEER							
NAVIGATOR							
CABIN ATTENDANT							
EXTRA CREW							
PASSENGERS		2		8			10
TOTAL		6	1	31		ABOARD	38
OTHER-AIRCRAFT							
OTHER-GROUND							
GRAND TOTAL		6	1	31			38

INVOLVES 27 TOTAL ACCIDENTS
INVOLVES NO FATAL ACCIDENTS

TABLE 88

INJURIES, ACCIDENTS
KIND OF FLYING
COMMERCIAL - AERIAL APPLICATION
ROTORCRAFT

1966

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT	2	7	11	32			52
COPILOT							
DUAL STUDENT							
CHECK PILOT							
FLIGHT ENGINEER							
NAVIGATOR							
CABIN ATTENDANT							
EXTRA CREW							
PASSENGERS			1	2			3
TOTAL	2	7	12	34		ABOARD	55
OTHER-AIRCRAFT							
OTHER-GROUND		1					1
GRAND TOTAL	2	8	12	34			56

INVOLVES 52 TOTAL ACCIDENTS
INVOLVES 2 FATAL ACCIDENTS

TABLE 89

INJURIES, ACCIDENTS
KIND OF FLYING
COMMERCIAL - FIRE CONTROL
ROTORCRAFT

1966

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

INVOLVES 3 TOTAL ACCIDENTS
INVOLVES NO FATAL ACCIDENTS

TABLE 90

INJURIES, ACCIDENTS
KIND OF FLYING
COMMERCIAL - POWER / PIPELINE PATROL
ROTORCRAFT

1966

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT			1	2			3
COPILOT							
DUAL STUDENT							
CHECK PILOT							
FLIGHT ENGINEER							
NAVIGATOR							
CABIN ATTENDANT							
EXTRA CREW							
PASSENGERS				4			4
TOTAL			1	6		ABOARD	7
OTHER-AIRCRAFT							
OTHER-GROUND							
GRAND TOTAL			1	6			7

INVOLVES 3 TOTAL ACCIDENTS
INVOLVES NO FATAL ACCIDENTS

TABLE 91

INJURIES, ACCIDENTS
KIND OF FLYING
COMMERCIAL - AIR TAXI - PASSENGER OPERATIONS
ROTORCRAFT

1966

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT		3	5	15			23
COPILOT							
DUAL STUDENT							
CHECK PILOT							
FLIGHT ENGINEER							
NAVIGATOR							
CABIN ATTENDANT							
EXTRA CREW							
PASSENGERS		5	8	25			38
TOTAL		8	13	40		ABOARD	61
OTHER-AIRCRAFT							
OTHER-GROUND							
GRAND TOTAL		8	13	40			61

INVOLVES 22 TOTAL ACCIDENTS
INVOLVES NO FATAL ACCIDENTS

TABLE 92

INJURIES, ACCIDENTS
KIND OF FLYING
COMMERCIAL - AIR TAXI - CARGO OPERATIONS
ROTORCRAFT

1966

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

INVOLVES 4 TOTAL ACCIDENTS
INVOLVES NO FATAL ACCIDENTS

TABLE 93

INJURIES, ACCIDENTS
KIND OF FLYING
COMMERCIAL - CONSTRUCTION
ROTORCRAFT

1966

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

INVOLVES 2 TOTAL ACCIDENTS
INVOLVES 1 FATAL ACCIDENTS

TABLE 94

INJURIES, ACCIDENTS
KIND OF FLYING
COMMERCIAL - ALL OTHER
ROTORCRAFT

1966

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT	6	3	10	35			54
COPILOT							
DUAL STUDENT							
CHECK PILOT							
FLIGHT ENGINEER							
NAVIGATOR							
CABIN ATTENDANT							
EXTRA CREW			1	2			3
PASSENGERS	19	5	14	36			74
TOTAL	25	8	25	73		ABOARD	131
OTHER-AIRCRAFT							
OTHER-GROUND			3	1			4
GRAND TOTAL	25	8	28	74			135

INVOLVES 54 TOTAL ACCIDENTS
INVOLVES 7 FATAL ACCIDENTS

TABLE 95

INJURIES, ACCIDENTS
KIND OF FLYING
MISCELLANEOUS - TEST
ROTORCRAFT

1966

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

INVOLVES 3 TOTAL ACCIDENTS
INVOLVES NO FATAL ACCIDENTS

TABLE 96

INJURIES, ACCIDENTS
KIND OF FLYING
MISCELLANEOUS - DEMONSTRATION
ROTORCRAFT

1966

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT			1	6			7
COPILOT				1			1
DUAL STUDENT							
CHECK PILOT							
FLIGHT ENGINEER							
NAVIGATOR							
CABIN ATTENDANT							
EXTRA CREW							
PASSENGERS				6			6
TOTAL			1	13		ABOARD	14
OTHER-AIRCRAFT							
OTHER-GROUND							
GRAND TOTAL			1	13			14

INVOLVES 7 TOTAL ACCIDENTS
INVOLVES NO FATAL ACCIDENTS

TABLE 97

INJURIES, ACCIDENTS
KIND OF FLYING
MISCELLANEOUS - FERRY
ROTORCRAFT

1966

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT	2	1	1	4			8
COPILOT							
DUAL STUDENT							
CHECK PILOT							
FLIGHT ENGINEER							
NAVIGATOR							
CABIN ATTENDANT							
EXTRA CREW							
PASSENGERS		1		2			3
TOTAL	2	2	1	6		ABOARD	11
OTHER-AIRCRAFT							
OTHER-GROUND							
GRAND TOTAL	2	2	1	6			11

INVOLVES 8 TOTAL ACCIDENTS
INVOLVES 2 FATAL ACCIDENTS

TABLE 98

INJURIES, ACCIDENTS
KIND OF FLYING
MISCELLANEOUS - SEARCH AND RESCUE
ROTORCRAFT

1966

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

INVOLVES 4 TOTAL ACCIDENTS
INVOLVES NO FATAL ACCIDENTS

TABLE 99

INJURIES, ACCIDENTS
KIND OF FLYING
MISCELLANEOUS - ALL OTHER
ROTORCRAFT

1966

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT	4	3	2	13			22
COPILOT							
DUAL STUDENT							
CHECK PILOT							
FLIGHT ENGINEER							
NAVIGATOR							
CABIN ATTENDANT			1	1			2
EXTRA CREW			1	8			19
PASSENGERS	5	5					
TOTAL	9	8	4	22		ABOARD	43
OTHER-AIRCRAFT							1
OTHER-GROUND	1						
GRAND TOTAL	10	8	4	22			44

INVOLVES 21 TOTAL ACCIDENTS
INVOLVES 4 FATAL ACCIDENTS

Section V

GENERAL AVIATION ACCIDENTS

GLIDER AIRCRAFT

Section V

GENERAL AVIATION ACCIDENTS

GLIDER AIRCRAFT

TABLE 100

ACCIDENTS, INJURY INDEX AND AIRCRAFT DAMAGE BY KIND OF FLYING

GLIDER AIRCRAFT
1966

	KIND OF FLYING																			
	INSTRUCTIONAL				NON-COMMERCIAL					COMMERCIAL					MISCELLANEOUS					
	DUAL	SOLO	OTHER	TOTAL	PLEASURE	BUSINESS	CORPORATE	OTHER	TOTAL	AERIAL APPLICATION	FIRE CONTROL	AIR TAXI	OTHER	TOTAL	TEST	DEMONSTRATION	AIR SHOW	OTHER	TOTAL	GRAND TOTAL
TOTAL ACCIDENTS	1	1	0	2	20	0	0	7	27	0	0	0	0	0	0	0	2	0	2	31
INJURY INDEX																				
Fatal.....	0	0	0	0	5	0	0	1	6	0	0	0	0	0	0	0	0	0	0	6
Serious.....	0	0	0	0	8	0	0	2	10	0	0	0	0	0	0	0	0	0	0	10
Minor.....	1	0	0	1	3	0	0	4	7	0	0	0	0	0	0	0	0	0	0	8
None.....	0	1	0	1	4	0	0	0	4	0	0	0	0	0	0	0	2	0	2	7
AIRCRAFT DAMAGE																				
Destroyed....	1	0	0	1	6	0	0	2	8	0	0	0	0	0	0	0	1	0	1	10
Substantial..	0	1	0	1	13	0	0	6	19	0	0	0	0	0	0	0	1	0	1	21
Minor.....	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
None.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total.....	1	1	0	2	20	0	0	8	28	0	0	0	0	0	0	0	2	0	2	32

TABLE 101

TYPE OF ACCIDENTS VS. KIND OF FLYING

GLIDER AIRCRAFT
1966

TYPE OF ACCIDENT	KIND OF FLYING: INSTRUCTIONAL				NON-COMMERCIAL					COMMERCIAL						MISCELLANEOUS					GRAND TOTAL
	DUAL	SOLO	OTHER	TOTAL	PLEASURE	BUSINESS	CORPORATE	OTHER	TOTAL	AERIAL APPLICATION	FIRE CONTROL	AIR TAXI PASSENGER	AIR TAXI-CARGO	OTHER	TOTAL	TEST	DEMONSTRATION	AIR SHOW	OTHER	TOTAL	GRAND TOTAL
Ground/waterloop-swerve					1				1									1		1	2
Dragged wingtip, pod, or float																					0
Wheels-up landing																					0
Wheels-down landing in water																					0
Gear collapsed																					0
Gear retracted																					0
Hard landing					1			1	2												2
Nose over/down																					0
Roll over																					0
Overshoot																					0
Undershoot		1		1	1			1	2									1		1	4
Collision with aircraft a/																					
Both in flight								2	2												2
One airborne																					0
Both on ground																					0
Collision with ground/water																					
Controlled					1			1	2												2
Uncontrolled																					0
Collided with																					
Wires/poles																					0
Trees																					0
Residence (s)																					0
Other buildings																					0
Fence, fenceposts																					0
Electronic towers																					0
Runway or approach lights																					0
Airport hazard																					0
Animals																					0
Crop																					0
Flagman, loader																					0
Ditches																					0
Snowbank																					0
Parked aircraft (unattended engine not running)																					0
Automobile																					0
Dirt bank																					0
Other					2				2												2
Bird strike (collision with birds)																					0
Stall					1				1												1
Spin	1			1	9			1	10												11
Spiral																					0
Mush					2			1	3												3
Fire or explosion																					
In flight																					0
On ground																					0
Airframe failure																					
In flight					1			1	2												2
On ground																					0
Engine tearaway																					0
Engine failure or malfunction																					0
Propeller/rotor failure																					
Propeller																					0
Tail rotor																					0
Main rotor																					0
Propeller/rotor accident to person																					0
Jet intake/exhaust accident to person																					0
Propeller/jet/rotor blast																					0
Turbulence					1				1												1
Hail damage to aircraft																					0
Lightning strike																					0
Evasive maneuver																					0
Uncontrolled altitude deviations																					0
Ditching																					0
Missing aircraft, not recovered																					0
Other/Miscellaneous																					0
Undetermined																					0
TOTAL	1	1	0	2	20	0	0	8	28	0	0	0	0	0	0	0	0	2	0	2	32

a/ Includes all glider aircraft involved in collisions.

TABLE 102

TYPE OF ACCIDENT VS. PHASE OF OPERATION
GLIDER AIRCRAFT
1966

TYPE OF ACCIDENT	PHASE OF OPERATION: STATIC				TAXI			TAKEOFF				IN-FLIGHT						LANDING							
	STARTING ENG.(s)	IDLING ENG. (s)	ENGINE RUNUP	OTHER	TO TAKEOFF	FROM LANDING	OTHER	GROUND RUN	INITIAL CLIMB	ABORTED	OTHER	CLIMB TO CRUISE	NORMAL CRUISE	DESCENDING	ACROBATICS	BUZZING	OTHER	IN TRAFFIC PATTERN	FINAL APPROACH	LEVEL OFF/TOUCH DOWN	ROLLOUT	OTHER	UNKNOWN	GRAND TOTAL
Ground/waterloop/swerve																					2			2
Dragged wingtip, pod, or float																								0
Wheels-up landing																								0
Wheels-down landing in water																								0
Gear collapsed																								0
Gear retracted																								0
Hard landing																			1	1				2
Nose over/down																								0
Roll over																								0
Overshoot																								0
Undershoot																			4					4
Collision with aircraft a/																								
Both in flight												2												2
One airbonre																								0
Both on ground																								0
Collision with ground/water																								
Controlled													1				1							2
Uncontrolled																								0
Collided with																								
Wires/poles																								0
Trees																								0
Residence (s)																								0
Other buildings																								0
Fence, fenceposts																								0
Electronic towers																								0
Runway or approach lights																								0
Airport hazard																								0
Animals																								0
Crop																								0
Flagman, loader																								0
Ditches																								0
Snowbank																								0
Parked aircraft (unattended, engines not running																								0
Automobile																								0
Dirt bank																								0
Other																				1	1			2
Bird strike (collision with birds)																								0
Stall													1											1
Spin									3		2		2					1	3					11
Spiral																								0
Mush									1										2					3
Fire or explosion																								
In flight																								0
On ground																								0
Airframe failure																								
In flight									1						1									2
On ground																								0
Engine tearaway																								0
Engine failure or malfunction																								0
Propeller/rotor failure																								0
Propeller																								0
Tail rotor																								0
Main rotor																								0
Propeller/rotor accident to person																								0
Jet intake/exhaust accident to person																								0
Propeller/jet/rotor blast																								0
Turbulence													1											1
Hail damage to aircraft																								0
Lightning strike																								0
Evasive maneuver																								0
Uncontrolled altitude deviations																								0
Ditching																								0
Missing aircraft, not recovered																								0
Other/Miscellaneous																								0
Undetermined																								0
TOTAL	0	0	0	0	0	0	0	0	5	0	2	2	5	0	1	0	1	1	10	2	3	0	0	32

a/ Includes all glider aircraft involved in collisions.

TABLE 103

CAUSE/FACTOR TABLE

GLIDER AIRCRAFT
U. S. GENERAL AVIATION

1966

INVOLVES 31 TOTAL ACCIDENTS
INVOLVES 6 FATAL ACCIDENTS

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
PILOT	5 83.33	1 16.67	5 83.33	19 76.00	.00	19 76.00	24 77.42	1 3.23	24 77.42
PERSONNEL	.00	.00	.00	2 8.00	.00	2 8.00	2 6.45	.00	2 6.45
AIRFRAME	2 33.33	.00	2 33.33	.00	.00	.00	2 6.45	.00	2 6.45
LANDING GEAR	.00	.00	.00	.00	.00	.00	.00	.00	.00
POWERPLANT	.00	.00	.00	.00	.00	.00	.00	.00	.00
SYSTEMS	.00	.00	.00	.00	.00	.00	.00	.00	.00
INSTRUMENTS/EQUIPMENT AND ACCESSORIES	.00	.00	.00	1 4.00	.00	1 4.00	1 3.23	.00	1 3.23
ROTORCRAFT	.00	.00	.00	.00	.00	.00	.00	.00	.00
AIRPORTS/AIRWAYS/FACILITIES	.00	.00	.00	.00	.00	.00	.00	.00	.00
WEATHER	.00	.00	.00	5 20.00	7 28.00	11 44.00	5 16.13	7 22.58	11 35.48
TERRAIN	.00	.00	.00	.00	.00	.00	.00	.00	.00
MISCELLANEOUS	.00	.00	.00	.00	.00	.00	.00	.00	.00
UNDETERMINED	.00	.00	.00	1 4.00	.00	1 4.00	1 3.23	.00	1 3.23

* 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.

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

TABLE 103

CAUSE/FACTOR TABLE

GLIDER AIRCRAFT
U. S. GENERAL AVIATION

1966

INVOLVES 31 TOTAL ACCIDENTS
INVOLVES 6 FATAL ACCIDENTS

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
PILOT									
PILOT IN COMMAND									
DIVERTED ATTENTION FROM OPERATION OF AIRCRAFT	1		1				1		1
EXCEEDED DESIGN STRESS LIMITS OF AIRCRAFT	1		1				1		1
FAILED TO SEE AND AVOID OTHER AIRCRAFT				1		1	1		1
FAILED TO SEE AND AVOID OBJECTS OR OBSTRUCTIONS				1		1	1		1
FAILED TO OBTAIN/MAINTAIN FLYING SPEED	4		4	9		9	13		13
FAILED TO FOLLOW APPROVED PROCEDURES DIRECTIVES ETC				1		1	1		1
IMPROPER LEVEL OFF				2		2	2		2
IMPROPER IN-FLIGHT DECISIONS OR PLANNING				1		1	1		1
INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING		1	1					1	1
LACK OF FAMILIARITY WITH AIRCRAFT	1		1				1		1
MISJUDGED DISTANCE AND ALTITUDE				2		2	2		2
MISJUDGED ALTITUDE				2		2	2		2
FAILED TO MAINTAIN DIRECTIONAL CONTROL				1		1	1		1
SUBTOTAL	7	1	8	20		20	27	1	28
DUAL STUDENT									
LACK OF FAMILIARITY WITH AIRCRAFT				1		1	1		1
SUBTOTAL				1		1	1		1
PERSONNEL									
FLIGHT INSTRUCTOR									
INADEQUATE TRAINING OF STUDENT				1		1	1		1
MAINTENANCE SERVICING INSPECTION									
OPERATIONAL SUPERVISORY PERSONNEL									
WEATHER PERSONNEL									
TRAFFIC CONTROL PERSONNEL									
AIRPORT SUPERVISORY PERSONNEL									
AIRWAYS FACILITIES PERSONNEL									
PRODUCTION-DESIGN									
MISCELLANEOUS-PERSONNEL									
PILOT OF OTHER AIRCRAFT				1		1	1		1
THIRD PILOT									
FLIGHT ENGINEER									
DISPATCHING									
SUBTOTAL				2		2	2		2
AIRFRAME									
WINGS									
SPARS									
FUSELAGE	1		1				1		1
LONGERONS	1		1				1		1

TABLE 103 (CONTINUED)

CAUSE/FACTOR TABLE

AIRFRAME (CONTINUED)

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
LANDING GEAR									
FLIGHT CONTROL SURFACES									
SUBTOTAL	2		2				2		2
POWERPLANT									
ENGINE STRUCTURE									
IGNITION SYSTEM									
FUEL SYSTEM									
LUBRICATING SYSTEM									
COOLING SYSTEM									
PROPELLER AND ACCESSORIES									
EXHAUST SYSTEM									
ENGINE ACCESSORIES									
ENGINE CONTROLS-COCKPIT									
POWERPLANT-INSTRUMENTS									
MISCELLANEOUS									
REDUCTION GEAR ASSEMBLY									
COMPRESSOR ASSEMBLY									
COMBUSTION ASSEMBLY									
TURBINE ASSEMBLY									
ACCESSORY DRIVE ASSEMBLY									
LUBRICATING SYSTEM									
FUEL SYSTEM									
SAFETY SYSTEM									
IGNITION SYSTEM									
TORQUEMETER									
AIR BLEED									
EXHAUST SYSTEM									
THRUST REVERSER									
PROPELLER SYSTEM									
CONSTANT SPEED DRIVE									
POWER LEVER									
PROPELLER LEVER									
REVERSE THRUST LEVER									
ENGINE INDICATING EQUIPMENT									
ENGINE INSTALLATION									

TABLE 103 (CONTINUED) CAUSE/FACTOR TABLE

POWERPLANT (CONTINUED)

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
SUBTOTAL									
INSTRUMENTS/EQUIPMENT AND ACCESSORIES									
FLIGHT AND NAVAGATION INSTRUMENTS									
COMMUNICATIONS AND NAVIGATION EQUIPMENT									
MISCELLANEOUS EQUIPMENT									
GLIDER LAUNCH/TOW EQUIPMENT				1		1	1		1
SUBTOTAL				1		1	1		1
WEATHER									
UNFAVORABLE WIND CONDITIONS				1	4	5	1	4	5
TURBULENCE ASSOCIATED W/CLOUDS THUNDERSTORMS				1		1	1		1
DOWNDRAFTS UPDRAFTS				4	3	7	4	3	7
HIGH DENSITY ALTITUDE					1	1		1	1
SUBTOTAL				6	8	14	6	8	14
GRAND TOTAL	9	1	10	30	8	38	39	9	48
MISCELLANEOUS ACTS CONDITIONS									
DISREGARD OF GOOD OPERATING PRACTICE					1	1		1	1
SEPARATION IN FLIGHT		2	2					2	2
OVERLOAD FAILURE	2		2				2		2
MATERIAL FAILURE				1		1	1		1
UNAPPROVED MODIFICATION	1		1				1		1

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

TABLE 104

INJURIES, ACCIDENTS
GLIDER AIRCRAFT
U. S. GENERAL AVIATION

1966

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT	6	10	8	8			32
COPILOT	1						1
DUAL STUDENT			1				1
CHECK PILOT							
FLIGHT ENGINEER							
NAVIGATOR							
CABIN ATTENDANT							
EXTRA CREW							
PASSENGERS	1		1	1			3
TOTAL	8	10	10	9		ABOARD	37
OTHER-AIRCRAFT							
OTHER-GROUND							
GRAND TOTAL	8	10	10	9			37

INVOLVES 31 TOTAL ACCIDENTS
INVOLVES 6 FATAL ACCIDENTS

TABLE 105

INJURIES, ACCIDENTS
KIND OF FLYING
INSTRUCTIONAL - DUAL
GLIDER AIRCRAFT

1966

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

INVOLVES 1 TOTAL ACCIDENTS
INVOLVES NO FATAL ACCIDENTS

TABLE 106

INJURIES, ACCIDENTS
KIND OF FLYING
INSTRUCTIONAL - SOLO
GLIDER AIRCRAFT

1966

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

INVOLVES 1 TOTAL ACCIDENTS
INVOLVES NO FATAL ACCIDENTS

TABLE 107

INJURIES, ACCIDENTS
KIND OF FLYING
INSTRUCTIONAL - ALL OTHER
GLIDER AIRCRAFT

1966

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

INVOLVES NO TOTAL ACCIDENTS
INVOLVES NO FATAL ACCIDENTS

TABLE 108

INJURIES, ACCIDENTS
KIND OF FLYING
NONCOMMERCIAL - PLEASURE
GLIDER AIRCRAFT

1966

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT	5	8	3	4			20
COPILOT	1						1
DUAL STUDENT							
CHECK PILOT							
FLIGHT ENGINEER							
NAVIGATOR							
CABIN ATTENDANT							
EXTRA CREW							
PASSENGERS	1		1	1			3
TOTAL	7	8	4	5		ABOARD	24
OTHER-AIRCRAFT							
OTHER-GROUND							
GRAND TOTAL	7	8	4	5			24

INVOLVES 20 TOTAL ACCIDENTS
INVOLVES 5 FATAL ACCIDENTS

TABLE 109

INJURIES, ACCIDENTS
KIND OF FLYING
NONCOMMERCIAL - BUSINESS
GLIDER AIRCRAFT

1966

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

INVOLVES NO TOTAL ACCIDENTS
INVOLVES NO FATAL ACCIDENTS

TABLE 110

INJURIES, ACCIDENTS
KIND OF FLYING
NONCOMMERCIAL - ALL OTHER
GLIDER AIRCRAFT

1966

	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT	1	2	4	1			8
COPILOT							
DUAL STUDENT							
CHECK PILOT							
FLIGHT ENGINEER							
NAVIGATOR							
CABIN ATTENDANT							
EXTRA CREW							
PASSENGERS							
TOTAL	1	2	4	1		ABOARD	8
OTHER-AIRCRAFT							
OTHER-GROUND							
GRAND TOTAL	1	2	4	1			8

INVOLVES 7 TOTAL ACCIDENTS
INVOLVES 1 FATAL ACCIDENTS

TABLE 111

INJURIES, ACCIDENTS
KIND OF FLYING
MISCELLANEOUS - AIR SHOW
GLIDER AIRCRAFT

1966

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

INVOLVES 2 TOTAL ACCIDENTS
INVOLVES NO FATAL ACCIDENTS

Section VI

YEARLY ACCIDENT RECORD

Section VI

YEARLY ACCIDENT RECORD

TABLE 112

ACCIDENTS, FATALITIES, RATES

U. S. GENERAL AVIATION

1938 - 1966

Year	Accidents Total	Accidents Fatal	Fatalities	Hours* Flown (000)	Plane-Miles* Flown (000)	Accident Rates 100,000 Hours Total	Accident Rates 100,000 Hours Fatal	Accident Rates Million Plane-Miles Total	Accident Rates Million Plane-Miles Fatal
1938.....	1,861	176	274	1,478	129,359	125.9	11.9	14.3	1.3
1939.....	2,222	203	315	1,922	177,868	115.6	10.5	12.4	1.1
1940.....	3,471	232	359	3,200	264,000	108.4	7.2	13.1	0.8
1941.....	4,252	217	312	4,460	346,303	95.3	4.8	12.2	0.6
1942.....	3,324	143	220	3,786	293,593	87.7	3.7	11.3	0.4
1943.....	3,871	167	257	NA	NA	NA	NA	NA	NA
1944.....	3,343	169	257	NA	NA	NA	NA	NA	NA
1945.....	4,652	322	508	NA	NA	NA	NA	NA	NA
1946.....	7,618	690	1,009	9,788	874,740	77.8	7.0	8.7	0.7
1947.....	9,253	882	1,352	16,334	1,502,402	56.6	5.3	6.1	0.5
1948.....	7,850	850	1,384	15,130	1,469,540	51.8	5.6	5.3	0.5
1949.....	5,459	562	896	11,031	1,128,992	49.4	5.0	4.8	0.4
1950.....	4,505	499	871	9,650	1,061,500	46.6	5.1	4.2	0.4
1951.....	3,824	441	750	8,451	975,480	45.2	5.2	3.9	0.4
1952.....	3,657	401	691	8,186	972,055	44.6	4.8	3.7	0.4
1953.....	3,232	387	635	8,527	1,045,346	37.9	4.5	3.0	0.3
1954.....	3,381	393	684	8,963	1,119,295	37.7	4.3	3.0	0.3
1955.....	3,343	384	619	9,500	1,216,000	35.1	4.0	2.7	0.3
1956.....	3,474	356	669	10,200	1,315,000	34.0	3.4	2.6	0.2
1957.....	4,200	438	800	10,938	1,426,285	38.4	4.0	2.9	0.3
1958.....	4,584	384	717	12,579	1,660,109	36.4	3.1	2.8	0.2
1959.....	4,576	450	823	12,903	1,716,019	35.5	3.5	2.7	0.3
1960.....	4,793	429	787	13,121	1,768,704	36.5	3.3	2.7	0.2
1961.....	4,625	426	761	13,602	1,857,946	34.0	3.1	2.5	0.2
1962.....	4,840	430	857	14,500	1,964,586	33.4	3.0	2.5	0.2
1963.....	4,690	482	893	15,106	2,048,574	31.0	3.2	2.3	0.2
1964.....	5,069	526	1,083	15,738	2,180,818	32.2	3.3	2.3	0.2
1965.....	5,196	538	1,029	16,733	2,562,380	31.1	3.2	2.0	0.2
1966.....	5,712	573	1,151	21,023	3,336,138	27.2	2.7	1.7	0.2

* Source: FAA

DATE DUE

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