

ANNUAL REVIEW

U.S. AIR CARRIER ACCIDENTS

CALENDER YEAR 1968

NATIONAL TRANSPORTATION SAFETY BOARD
Bureau of Aviation Safety
Washington, D. C. 20591

FOREWORD

The purpose of this report is to present the record of aircraft accidents, incidents to flight, which occurred in U.S. Air Carrier operations during the calendar year 1968. It includes a statistical recapitulation of all accidents, and a brief of each accident containing the essential items of information which fulfill the requirements of the majority of persons using these reports.

In the analysis of accidents a collision between aircraft is treated as one accident in the overall total. However, a complete analysis and coding is made on each aircraft involved in a collision. This produces two aircraft accident records, one for each aircraft. These records contain the same broad categories of coded data, however, the specific entries, such as type of aircraft, type of operation, phase of operation, etc., may or may not be common to each aircraft. As a result, the number of accidents may differ in the various tables depending upon whether or not collisions are involved and if so, whether or not the selected items of data are common to each aircraft.

Public reports containing greater detail have been issued by the Board on a number of the major accidents included in this report and are available upon request. In all cases, factual data obtained in the investigation may be released to inquirers at their expense when the reproduction of records is involved.

Included in this report are twelve accidents still under investigation. Additionally there were five accidents that occurred outside the United States, the investigation of which is under the jurisdiction of the state of occurrence in accordance with the provisions of Annex 13 to the International Civil Aviation Organization convention.

February 1970

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Explanatory Notes

Aircraft Accidents: For the purpose of this report, an aircraft accident is "an occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, in which any person suffers death or serious injury as a result of being in or upon the aircraft or by direct contact with the aircraft or anything attached thereto, or the aircraft receives substantial damage."

Air Carrier: As used in this report, those operators who have been issued a Certificate of Public Convenience and Necessity by the Civil Aeronautics Board.

Aircraft Miles: The miles (computed in airport-to-airport distances) for each inter-airport hop actually completed, whether or not performed in accordance with the scheduled pattern. For this purpose, operation to a flag stop is a hop completed even though a landing is not actually made.

All-Cargo Carriers: Certificated Route carriers primarily engaged in the transportation of freight and express. The nonscheduled passenger operations of these carriers are included in this category. Does not include the all-cargo operations of the passenger/cargo carriers.

All-Cargo Service: Transport service established primarily for the transportation of freight, express, and/or mail.

All Operations: Refers to all flight operations including test, training, ferry, scheduled and nonscheduled passenger and cargo service both revenue and non-revenue.

Certificate of Public Convenience and Necessity: A certificate issued to an air carrier by the Civil Aeronautics Board, authorizing the carrier to engage in air transportation.

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Explanatory Notes

Certificated Route Carriers: One of a class of air carriers holding Certificates of Public Convenience and Necessity, issued by the Civil Aeronautics Board, authorizing the performance of scheduled air transportation over specified routes and a limited amount of nonscheduled operations. This general carrier grouping includes the all purpose carriers (i.e., the so-called passenger/cargo carriers) and the All-Cargo carriers, and comprises all of the airlines certificated by the Board, except Supplemental air carriers. Certificated Route air carriers are often referred to as "Scheduled Airlines" although they also perform nonscheduled service.

Domestic Operations: In general, operations within the territory of the United States. Includes operations of the Domestic Trunk carriers and the Local Service, Helicopter, Intra-Alaska, Intra-Hawaii and Domestic All-Cargo carriers.

Domestic Trunk Carriers: Those Domestic "grandfather" carriers designated as "Trunk Carriers" in 1945-46, when "feeder" carriers (now called Local Service carriers) were granted certificates by the Civil Aeronautics Board to perform local feeder air service. International and Territorial operations of the Trunk carriers are shown under "International Operations" and are not included under "Domestic Operations."

Helicopter Carriers: Domestic Certificated Route air carriers employing helicopter aircraft for their primary operations.

International Operations: In general, operations outside the territory of the United States, including operations between United States points separated by foreign territory or major expanses of international waters.

Intra-Alaska Operations: Intra-Alaskan air carrier operations are included under Domestic Operations. Operations between Alaska and other States of the United States are carried under International Operations.

Intra-Hawaii Operations: Intra-Hawaii air carrier operations are included under Domestic Operations. Operations between Hawaii and other States of the United States are carried under International Operations.

Explanatory Notes

Local Service Carriers: Certificated Domestic Route air carriers operating over routes of lesser density between the smaller traffic centers and between those centers and principal centers.

Nonscheduled Service: Revenue flights that are not operated in regular scheduled service such as charter flights and all nonrevenue flights incident to such flights.

Passenger Mile: One passenger transported one mile. Passenger miles are computed by the summation of the products of the aircraft miles flown on each inter-airport hop multiplied by the number of passengers carried on that hop.

Revenue Passenger: A person receiving air transportation from an air carrier for which remuneration is received by the air carrier. Air carrier employees and others receiving air transportation against whom token service charges are levied are considered nonrevenue passengers.

Revenue Plane Miles: The total plane miles flown in revenue service.

Supplemental Air Carrier: One of a class of air carriers now holding interim operating certificates issued by the Civil Aeronautics Board, authorizing them to perform passenger and cargo charter services supplementing the scheduled service of the Certificated Route air carriers.

Causes 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 denote those elements of an accident which further explain or supplement the probable cause(s). This provision was incorporated in the coding system to increase its flexibility and to provide a means for collecting essential items of information which could not be readily categorized elsewhere in the system.

Not

Explanatory Notes

Mid-air collisions nonfatal to air carrier occupants are included in all compilations except the fatal accident rate.

Accidents involving sabotage are included in the total number of accidents and the resulting fatalities are included in the total fatalities. However, these accidents and fatalities are excluded in the computation of accident rates and passenger fatality rates. Accidents involving sabotage are as follows:

| <u>Date</u> | <u>Location</u> | <u>Fatalities</u> | | |
|-----------------|-------------------|-------------------|-------------|--------------|
| | | <u>Passg.</u> | <u>Crew</u> | <u>Total</u> |
| July 25, 1957 | Daggett, Calif. | 1 | 0 | 1 |
| January 6, 1960 | Bolivia, N. C. | 29 | 5 | 34 |
| May 22, 1962 | Unionville, Mo. | 37 | 8 | 45 |
| May 7, 1964 | San Ramon, Calif. | 41 | 3 | 44 |

The accident record of U. S. General Aviation small fixed-wing aircraft, large fixed-wing aircraft and rotocraft is contained in a separate publication entitled "General Aviation Accidents - A Statistical Review."

Abbreviations Used in Section II of This Publication

| | |
|-----------------|-------------------|
| CR | Crew |
| CTR | Contract |
| D | Domestic |
| I | International |
| Mil/Ctr | Military Contract |
| NS | Non-Scheduled |
| OT | Other Personnel |
| Passg. PX | Passenger |
| S | Scheduled |

Note: All times shown are local standard.

EXPLANATORY NOTES

Type of Accident:

The type of accident relates to the circumstances involved in the accident. Briefly, it indicates what happened.

Two separate types may be coded in any one accident. The selection of first and second type is made in relation to the sequence of occurrence.

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. In other words, where in the flight the circumstances took place.

The phase of operation is directly related to the type of accident. When more than one type is coded for an accident, each type will have a corresponding phase. In other words, the first phase of operation will be that phase of flight in which the first type or circumstance occurred. In the event that the first and second type both occur in one operational phase, the same phase is coded twice.

Collisions between Aircraft:

Collisions between aircraft are so classified only when both aircraft are occupied. This includes collisions wherein both aircraft are airborne (midair); one is airborne, the other on the ground; and both are on the ground. A collision with a parked, unoccupied aircraft is classified under the broad category of collision with objects (parked, unoccupied aircraft).

Section I

STATISTICAL REVIEW

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U. S. AIR CARRIER SAFETY RECORD - 1968

The 1968 safety record of the U. S. Air Carriers is presented in this report in relation to the various classifications and groupings of air carriers, and to the different types of operations in which they engage. There are two main categories of air carriers; the Certificated Route Carriers and the Supplemental Carriers. Data is furnished in relation to each category and to the different groupings of carriers within each category. Additional breakdowns are made in respect to the different types of service performed by these carriers.

HIGHLIGHTS - U. S. AIR CARRIER SAFETY RECORD - ALL OPERATIONS

In the overall operation of the U. S. Carriers during 1968 there were 71 aircraft accidents incident to flight, 15 of which were fatal accidents resulting in 349 fatalities. Following is a comparison with the previous four years' record.

| <u>ACCIDENTS</u> | <u>1964</u> | <u>1965</u> | <u>1966</u> | <u>1967</u> | <u>1968</u> |
|--|-------------|-------------|-------------|-------------|-------------|
| Total Accidents..... | 79 | 83 | 75 | 70 | 71 |
| Fatal Accidents..... | 13 | 9 | 8 | 12 | 15 |
| Involving Serious Injury.... | 17 | 25 | 22 | 25 | 33 |
| Involving Minor or No Injury | 49 | 49 | 45 | 33 | 23 |
| <u>AIRCRAFT DAMAGE</u> | | | | | |
| Destroyed..... | 12 | 16 | 12 | 11 | 16 |
| Substantial..... | 52 | 46 | 47 | 41 | 27 |
| <u>FATALITIES</u> | | | | | |
| Passengers..... | 202 | 226 | 137 | 229 | 306 |
| Crew Members..... | 35 | 35 | 27 | 39 | 37 |
| Other Persons..... | 1 | 0 | 108 | 18 | 6 |
| Total..... | 238 | 261 | 272 | 286 | 349 |
| MILES FLOWN - (Billion) <u>1/</u> | 1.33 | 1.54 | 1.77 | 2.18 | 2.50 |
| HOURS FLOWN - (Million)..... | 4.31 | 4.69 | 5.11 | 5.87 | 6.40 |
| <u>ACCIDENTS RATES</u> | | | | | |
| Per 1 million aircraft miles | 0.058 | 0.054 | 0.042 | 0.032 | 0.028 |
| Per 100 thousand acft. hours | 1.809 | 1.769 | 1.469 | 1.193 | 1.109 |

1/ Nonrevenue miles of the Supplemental Air Carriers not reported.

CERTIFICATED ROUTE AIR CARRIERS

ALL OPERATIONS OF CERTIFICATED ROUTE AIR CARRIERS

In 1968 the Certificated Route Air Carriers had 62 accidents in their total revenue and nonrevenue operations. Fourteen of these were fatal accidents resulting in 348 fatalities. The distribution of accidents by type of operations was as follows:

| <u>Operation</u> | <u>Total</u> | <u>Fatal</u> | <u>Fatalities</u> |
|--------------------------------------|--------------|--------------|-------------------|
| Scheduled Passenger Service..... | 53 | 13 | 345 |
| Scheduled Cargo Service..... | 3 | 0 | 0 |
| Nonscheduled Revenue Operations..... | 2 | 1 | 3 |
| Nonrevenue Operations | | | |
| Training..... | 1 | 0 | 0 |
| Other..... | 3 | 0 | 0 |
| Total All Operations..... | 62 | 14 | 348 |

Aircraft Miles - Hours Flown

| | |
|------------------|---------------|
| Miles Flown..... | 2,385,308,731 |
| Hours Flown..... | 6,082,907 |

Accident Rates

| | <u>Total</u> <u>Accidents</u> | <u>Fatal</u> <u>Accidents</u> |
|--------------------------------------|----------------------------------|----------------------------------|
| Per 1 Million Aircraft Miles..... | 0.026 | 0.005 |
| Per 100 Thousand Aircraft Hours..... | 1.019 | 0.197 |

SCHEDULED PASSENGER SERVICE

| | |
|---|----------------|
| Revenue Passengers Carried..... | 150.16 Million |
| Passenger-Miles (Revenue & Nonrevenue). | 119.61 Billion |
| Aircraft-Miles Flown..... | 2.04 Billion |
| Passenger Fatality Rate Per 100 Million Passenger-Miles Flown..... | 0.255 |

Aircraft Miles Flown

| | |
|-------------------------|----------------|
| Per Accident..... | 38.47 Million |
| Per Fatal Accident..... | 198.78 Million |

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In 1968,
resulting
operation

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Military (
Pass
Cargo
Training..
Ferry.....
Total

Aircraft 1

Aircraft 1
Hours Flow

Accident 1

Per 1 Mill
Per 100 Th

Type
Operation

Civil.....
Military..

Total

SUPPLEMENTAL AIR CARRIERS

ALL OPERATIONS OF SUPPLEMENTAL CARRIERS

In 1968, the Supplemental Air Carriers had 9 accidents 1 of which was fatal, resulting in 1 fatality. These accidents occurred in the following types of operations.

| <u>Operations</u> | <u>Number of Accidents</u> | | <u>Total</u> |
|-----------------------------|----------------------------|--------------|-------------------|
| | <u>Total</u> | <u>Fatal</u> | <u>Fatalities</u> |
| Civil Operations: | | | |
| Passenger..... | 1 | 1 | 1 |
| Cargo..... | 1 | 0 | 0 |
| Military Operations: | | | |
| Passenger..... | 2 | 0 | 0 |
| Cargo..... | 3 | 0 | 0 |
| Training..... | 1 | 0 | 0 |
| Ferry..... | 1 | 0 | 0 |
| Total - All Operations..... | <u>9</u> | <u>1</u> | <u>1</u> |

Aircraft Miles - Hours Flown

| | |
|---|-------------|
| Aircraft Miles Flown (revenue)..... | 113,539,731 |
| Hours Flown (revenue and nonrevenue)... | 321,410 |

| <u>Accident Rates</u> | <u>Total</u> | <u>Fatal</u> |
|--------------------------------------|------------------|------------------|
| | <u>Accidents</u> | <u>Accidents</u> |
| Per 1 Million Aircraft Miles..... | 0.079 | 0.009 |
| Per 100 Thousand Aircraft Hours..... | 2.800 | 0.311 |

| <u>Type</u> | <u>Passengers</u> | <u>Revenue</u> | <u>Passenger</u> |
|------------------|-------------------|--------------------|------------------------|
| <u>Operation</u> | <u>Carried</u> | <u>Passenger-</u> | <u>Fatality Rate</u> |
| | | <u>Miles Flown</u> | <u>Per 100 Million</u> |
| | | | <u>Passenger-Miles</u> |
| Civil..... | 1,567,494 | 4,331,677,000 | 0.02 |
| Military..... | 1,101,972 | 4,554,106,000 | 0.00 |
| Total.... | 2,669,466 | 8,885,783,000 | 0.01 |

ACCIDENT RATES
U. S. CERTIFICATED ROUTE AND SUPPLEMENTAL AIR CARRIERS
ALL OPERATIONS
1968

| CLASS OF CARRIER | Number of Accidents | | | | Aircraft Damage | | | Aircraft Miles Flown | Aircraft Hours Flown | Accident Rates | | | |
|---|---------------------|-------------------------|-----------|-----------|-----------------|---------------------|------------------------------------|----------------------|----------------------|-------------------|-----------------|-----------------|--|
| | Total | Injury Index | | Destroyed | Substantial | Per 1 Million Miles | | | | Per 100,000 Hours | | | |
| | | Fatal | Serious | | | Minor | Total Accidents | | | Fatal Accidents | Total Accidents | Fatal Accidents | |
| CERTIFICATED ROUTE AIR CARRIERS | | | | | | | | | | | | | |
| 1. Domestic Carriers | | | | | | | | | | | | | |
| Trunk..... | 30 | 3 | 18 | 9 | 3 | 12 | 1,555,545,956 | 3,769,992 | .019 | .002 | .796 | .080 | |
| Local Service..... | 11 | 5 ^{2/} | 2 | 4 | 5 | 5 | 221,129,210 | 944,564 | .050 | .014 | 1.165 | .318 | |
| Helicopter..... | 2 | 2 | 0 | 0 | 2 | 0 | 2,996,224 | 28,418 | .668 | .668 | 7.038 | 7.038 | |
| All Cargo..... | 2 | 0 | 0 | 2 | 0 | 0 | 29,970,458 | 75,762 | .067 | .000 | 2.640 | .000 | |
| Other..... | 0 | 0 | 0 | 0 | 0 | 0 | 416,127 | 2,685 | .000 | .000 | .000 | .000 | |
| Subtotal..... | 45 | 10 ^{3/} | 20 | 15 | 10 | 19 | 1,810,057,975 | 4,821,421 | .025 | .004 | .933 | 1.166 | |
| Intra-Alaska..... | 2 | 1 | 0 | 1 | 1 | 1 | 9,292,888 | 54,618 | .215 | .108 | 3.662 | 1.831 | |
| Intra-Hawaii..... | 1 | 0 | 1 | 0 | 0 | 0 | 8,749,676 | 34,353 | .114 | .000 | 2.911 | .000 | |
| TOTAL DOMESTIC..... | 48 | 11 ^{3/} | 21 | 16 | 11 | 20 | 1,828,100,539 | 4,910,392 | .026 | .005 | .978 | .183 | |
| 2. International Carriers | | | | | | | | | | | | | |
| Passenger/Cargo..... | 13 | 3 | 8 | 2 | 3 | 2 | 518,160,455 | 1,086,695 | .025 | .005 | 1.196 | .276 | |
| All-Cargo..... | 1 | 0 | 0 | 1 | 0 | 1 | 39,047,737 | 85,820 | .026 | .000 | 1.165 | .000 | |
| TOTAL INTERNATIONAL..... | 14 | 3 | 8 | 3 | 3 | 3 | 557,208,192 | 1,172,515 | .025 | .005 | 1.194 | .256 | |
| TOTAL CERTIFICATED ROUTE CARRIERS..... | 62 | 14 ^{3/} | 29 | 19 | 14 | 23 | 2,385,308,731 | 6,082,907 | .026 | .005 | 1.019 | .197 | |
| SUPPLEMENTAL AIR CARRIERS | | | | | | | | | | | | | |
| 1. Domestic Carriers | | | | | | | | | | | | | |
| Civil Operations..... | 3 | 1 | 1 | 1 | 1 | 1 | 14,078,609 | N/R | .213 | .071 | - | - | |
| Military Contract..... | 4 | 0 | 2 | 2 | 1 | 2 | 30,516,857 | N/R | .131 | .000 | - | - | |
| Subtotal..... | 7 | 1 | 3 | 3 | 2 | 3 | 44,595,466 | 172,411 | .157 | .022 | 4.060 | .580 | |
| 2. International Carriers | | | | | | | | | | | | | |
| Civil Operations..... | 1 | 0 | 1 | 0 | 0 | 0 | 29,196,899 | N/R | .034 | .000 | - | - | |
| Military Contract..... | 1 | 0 | 0 | 1 | 0 | 1 | 39,747,536 | N/R | .025 | .000 | - | - | |
| Subtotal..... | 2 | 0 | 1 | 1 | 0 | 1 | 68,944,265 | 148,999 | .029 | .000 | 1.342 | .000 | |
| TOTAL SUPPLEMENTAL AIR CARRIERS..... | 9 | 1 | 4 | 4 | 2 | 4 | 113,539,731 ^{1/} | 321,410 | .079 | .009 | 2.800 | .311 | |
| GRAND TOTAL ALL OPERATIONS..... | 71 | 15 ^{2/} | 33 | 23 | 16 | 27 | 2,498,848,462 ^{2/} | 6,404,260 | .028 | .005 | 1.109 | .203 | |

^{1/} Revenue miles only.
^{2/} Nonrevenue miles of the Supplemental Carriers not reported.
^{3/} Two (2) midair collisions, nonfatal to Air Carrier occupants, are included in all computations except fatal accident rates.

ACCIDENTS, INJURIES, AIRCRAFT DAMAGE
BY TYPE OF OPERATION
U. S. CERTIFICATED ROUTE AND SUPPLEMENTAL AIR CARRIERS
1968

| ITEMS | CERTIFICATED ROUTE CARRIERS | | | | | SUPPLEMENTAL CARRIERS | | | | GRAND TOTAL |
|--------------------------------|-----------------------------|-----------------------|------------------------------|-----------------------|----------------------|--------------------------------|------------------------------|-----------------------|----------------------|-------------|
| | Scheduled Passenger Service | All Scheduled Service | Nonsched. Revenue Operations | Nonrevenue Operations | Total All Operations | Public Passg./Cargo Operations | Military Contract Operations | Nonrevenue Operations | Total All Operations | |
| Accident - Injury Index | | | | | | | | | | |
| Fatal..... | 13 | 13 | 1 | 0 | 14 | 1 | 0 | 0 | 1 | 15 |
| Serious..... | 28 | 29 | 0 | 0 | 33 | 1 | 2 | 1 | 4 | 33 |
| Minor/None..... | 12 | 14 | 1 | 4 | 19 | 0 | 3 | 1 | 4 | 23 |
| Total..... | 53 | 56 | 2 | 4 | 62 | 2 | 5 | 2 | 9 | 71 |
| Aircraft Damage | | | | | | | | | | |
| Destroyed..... | 11 | 12 | 1 | 1 | 14 | 0 | 1 | 1 | 2 | 16 |
| Substantial..... | 17 | 19 | 1 | 3 | 23 | 0 | 3 | 1 | 4 | 27 |
| Minor/None..... | 26 | 26 | 0 | 0 | 26 | 2 | 1 | 0 | 3 | 29 |
| Total..... | 54 | 57 | 2 | 4 | 63 | 2 | 5 | 2 | 9 | 72 |
| Fatalities | | | | | | | | | | |
| Captain..... | 9 | 9 | 1 | 0 | 10 | 0 | 0 | 0 | 0 | 10 |
| Copilot..... | 9 | 9 | 1 | 0 | 10 | 0 | 0 | 0 | 0 | 10 |
| Flight Engineer..... | 2 | 2 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| Cabin Attendants..... | 12 | 12 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 12 |
| Other Crew..... | 2 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 |
| Passenger..... | 305 | 305 | 0 | 0 | 305 | 1 | 0 | 0 | 1 | 306 |
| Other Aircraft..... | 5 | 5 | 0 | 0 | 5 | 1 | 0 | 0 | 1 | 5 |
| Other Ground..... | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Total..... | 345 | 345 | 3 | 0 | 348 | 1 | 0 | 0 | 1 | 349 |
| Serious Injuries | | | | | | | | | | |
| Captain..... | 1 | 2 | 0 | 0 | 2 | 0 | 0 | 1 | 1 | 3 |
| Copilot..... | 3 | 3 | 0 | 0 | 3 | 0 | 1 | 0 | 1 | 4 |
| Flight Engineer..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cabin Attendants..... | 18 | 18 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 18 |
| Other Crew..... | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 | 2 |
| Passenger..... | 73 | 73 | 0 | 0 | 73 | 0 | 1 | 0 | 1 | 74 |
| Other Aircraft..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Ground..... | 6 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 6 |
| Total..... | 101 | 102 | 0 | 0 | 102 | 1 | 2 | 2 | 5 | 107 |
| Minor/No Injury | | | | | | | | | | |
| Captain..... | 44 | 46 | 1 | 4 | 51 | 2 | 5 | 1 | 8 | 59 |
| Copilot..... | 62 | 64 | 1 | 2 | 67 | 2 | 4 | 1 | 7 | 74 |
| Flight Engineer..... | 36 | 38 | 1 | 1 | 40 | 1 | 5 | 2 | 8 | 48 |
| Cabin Attendants..... | 137 | 137 | 0 | 1 | 138 | 1 | 7 | 5 | 13 | 151 |
| Other Crew..... | 14 | 15 | 1 | 2 | 18 | 4 | 1 | 2 | 7 | 25 |
| Passenger..... | 2713 | 2713 | 3 | 0 | 2716 | 22 | 264 | 1 | 287 | 3003 |
| Other Aircraft..... | 2 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 |
| Other Ground..... | 2 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 |
| Total..... | 2990 | 2997 | 7 | 10 | 3014 | 32 | 286 | 12 | 330 | 3344 |
| TOTAL ABOARD..... | 3420 | 3428 | 10 | 10 | 3448 | 34 | 288 | 14 | 336 | 3784 |

2/ Includes all Air Carrier Aircraft involved in Collisions.

ACCIDENTS, RATES
BY PHASE OF OPERATION
CERTIFICATED ROUTE AIR CARRIERS
ALL REVENUE OPERATIONS

1968

FIRST PHASE OF OPERATION
Other than Int'l

ACCIDENT RATES
Other Than Int'l

| | | | | | | | | | |
|-------------------|------|------|----|----|------|-----|-----|-----|------|
| Total..... | 2990 | 2997 | 7 | 10 | 3014 | 280 | 14 | 336 | 3784 |
| TOTAL ABOARD..... | 3420 | 3428 | 10 | 10 | 3448 | 34 | 288 | 14 | 3784 |

1/ Includes all Air Carrier Aircraft involved in Collisions.

ACCIDENTS, RATES
BY PHASE OF OPERATION
CERTIFICATED ROUTE AIR CARRIERS
ALL REVENUE OPERATIONS

1968

| CLASS OF CARRIER | FIRST PHASE OF OPERATION | | | ACCIDENT RATES | | |
|-------------------------------------|--------------------------|-------|---------------------|---|-------|--|
| | Inflight | | Other Than Inflight | Inflight Phase Per Million Aircraft Miles | | Other Than Inflight Phase Per 100,000 Departures |
| | Total | Fatal | Total | Total | Fatal | Total |
| SCHEDULED SERVICE | | | | | | |
| 1. Domestic Carriers | | | | | | |
| Trunk..... | 16 | 1 | 13 | 1,486,380,600 | .001 | .433 |
| Local Service..... | 2 | 1 | 3 | 211,347,896 | .009 | .185 |
| Helicopter..... | 2 | 0 | 0 | 2,547,415 | .785 | .000 |
| All Cargo..... | 0 | 0 | 0 | 11,551,759 | .000 | 6.660 |
| Other..... | 0 | 0 | 0 | 3,161 | .000 | .000 |
| Subtotal..... | 20 | 2 | 22 | 1,712,188,463 | .012 | .460 |
| Intra-Alaska..... | 1 | 1 | 0 | 66,657 | .140 | .000 |
| Intra-Hawaii..... | 1 | 0 | 0 | 8,131,004 | .123 | .000 |
| TOTAL DOMESTIC..... | 22 | 2 | 24 | 1,727,474,150 | .013 | .467 |
| 2. International Carriers | | | | | | |
| Passenger/Cargo..... | 8 | 0 | 3 | 408,136,270 | .020 | .544 |
| All Cargo..... | 0 | 0 | 0 | 10,427,565 | .000 | .000 |
| TOTAL INTERNATIONAL..... | 8 | 0 | 3 | 418,563,835 | .019 | .531 |
| TOTAL SCHEDULED SERVICE..... | 30 | 2 | 27 | 2,146,037,985 | .014 | .491 |
| NONSCHEDULED REVENUE SERVICE | | | | | | |
| 1. Domestic Carriers | | | | | | |
| Trunk..... | 0 | 0 | 0 | 28,788,544 | .000 | .000 |
| Local Service..... | 0 | 0 | 0 | 2,968,215 | .000 | .000 |
| Helicopter..... | 0 | 0 | 0 | 318,664 | .000 | .000 |
| All Cargo..... | 0 | 0 | 0 | 17,372,023 | .000 | .000 |
| Other..... | 0 | 0 | 0 | 24,764 | .000 | .000 |
| Subtotal..... | 0 | 0 | 0 | 49,492,210 | .000 | .000 |
| Intra-Alaska..... | 0 | 0 | 0 | 1,540,238 | .000 | .000 |
| Intra-Hawaii..... | 0 | 0 | 0 | 3,029 | .000 | .000 |
| TOTAL DOMESTIC..... | 0 | 0 | 0 | 51,035,477 | .000 | .000 |
| 2. International Carriers | | | | | | |
| Passenger/Cargo..... | 0 | 0 | 1 | 95,205,387 | .000 | 2.389 |
| All Cargo..... | 0 | 0 | 0 | 27,953,481 | .000 | 8.032 |
| TOTAL INTERNATIONAL..... | 0 | 0 | 1 | 123,158,868 | .000 | 3.683 |
| TOTAL NONSCHEDULED SERVICE..... | 0 | 0 | 1 | 174,194,345 | .000 | 1.937 |
| GRAND TOTAL..... | 30 | 2 | 28 | 2,320,232,330 | .013 | .518 |

1/ Includes all static, taxi, takeoff and landing phases of operation.

2/ Mideair collisions, nonfatal to Air Carrier occupants, are included in all computations except fatal accident rates.

RECORD OF INDIVIDUAL TRUNK CARRIERS
SCHEDULED DOMESTIC PASSENGER SERVICE

1968

| Operator | Accidents | | Fatalities | | Revenue Passengers Carried | Passenger- miles 1/ (000) | Revenue | | Departures |
|----------------------------|-----------|-------|------------|-------------|----------------------------------|---------------------------------|---------------|-----------|------------|
| | Total | Fatal | Passg. | Crew Others | | | Plane- | Miles | |
| <u>TRUNK</u> | | | | | | | | | |
| American Airlines 2/..... | 6 | 0 | 0 | 0 | 18,043,054 | 15,832,976 | 245,532,958 | 398,359 | |
| Braniff Airways..... | 1 | 1 | 80 | 5 | 5,204,821 | 2,954,266 | 57,432,300 | 164,274 | |
| Continental Air Lines..... | 0 | 0 | 0 | 0 | 3,408,232 | 2,745,297 | 57,643,141 | 114,682 | |
| Delta Air Lines..... | 2 | 0 | 0 | 0 | 11,169,321 | 7,816,405 | 120,011,674 | 327,152 | |
| Eastern Air Lines..... | 3 | 0 | 0 | 0 | 17,101,240 | 10,426,059 | 178,578,266 | 483,973 | |
| National Airlines..... | 0 | 0 | 0 | 0 | 4,980,357 | 4,340,876 | 68,486,089 | 150,031 | |
| Northeast Airlines..... | 1 | 1 | 30 | 2 | 3,055,751 | 1,789,932 | 35,553,437 | 91,553 | |
| Northwest Airlines..... | 5 | 1 | 0 | 0 | 6,189,252 | 4,264,907 | 77,045,889 | 188,505 | |
| Trans World Airlines..... | 2 | 0 | 0 | 0 | 11,445,522 | 12,105,043 | 206,307,920 | 273,008 | |
| United Air Lines 2/..... | 9 | 0 | 0 | 0 | 23,352,427 | 19,923,358 | 330,793,250 | 618,573 | |
| Western Air Lines..... | 0 | 0 | 0 | 0 | 5,045,873 | 3,330,962 | 49,642,139 | 121,772 | |
| Total..... | 28 | 3 | 110 | 7 | 108,995,850 | 85,530,081 | 1,427,027,063 | 2,931,882 | |

1/ Both Revenue and Nonrevenue.

2/ Taxi collision between American Airlines and United Air Lines counted as one accident in total.

RECORD OF INDIVIDUAL LOCAL SERVICE AND HELICOPTER CARRIERS
SCHEDULED PASSENGER SERVICE

1/ Both Revenue and Nonrevenue.

2/ Taxi collision between American Airlines and United Air Lines counted as one accident in total.

RECORD OF INDIVIDUAL LOCAL SERVICE AND HELICOPTER CARRIERS
SCHEDULED PASSENGER SERVICE

1968

| Operator | Accidents | | Fatalities | | Revenue Passengers Carried | Passenger- miles 1/ (000) | Revenue Plane- Miles | Departures |
|---|-----------|-------|------------|-------------|----------------------------------|---------------------------------|----------------------------|------------|
| | Total | Fatal | Passg. | Crew Others | | | | |
| <u>Local Service</u> | | | | | | | | |
| Allegheny Airlines..... | 2 | 1 | 18 | 2 | 3,934,451 | 1,007,155 | 34,631,470 | 226,666 |
| Bonanza Air Lines 2/..... | 0 | 0 | 0 | 0 | 321,063 | 86,847 | 2,849,590 | 16,807 |
| Frontier Airlines..... | 0 | 0 | 0 | 0 | 2,421,555 | 933,653 | 31,220,485 | 213,487 |
| Lake Central Airlines 3/ | 0 | 0 | 0 | 0 | 399,978 | 79,089 | 4,801,530 | 43,257 |
| Mohawk Airlines..... | 0 | 0 | 0 | 0 | 2,345,752 | 567,054 | 19,412,976 | 138,244 |
| North Central Airlines.. | 4 | 2 | 24 | 3 | 2,744,025 | 527,421 | 20,986,304 | 212,376 |
| Ozark Air Lines..... | 2 | 1 | 0 | 2 | 2,117,840 | 486,691 | 16,703,695 | 142,451 |
| Air West 2/..... | 0 | 0 | 0 | 0 | 2,455,450 | 640,864 | 23,317,892 | 162,940 |
| Piedmont Aviation..... | 1 | 1 | 32 | 3 | 1,986,823 | 557,829 | 21,288,668 | 178,193 |
| Southern Airways..... | 0 | 0 | 0 | 0 | 1,255,814 | 260,044 | 11,372,442 | 101,655 |
| Texas International Air- lines 4/..... | 0 | 0 | 0 | 0 | 1,950,050 | 496,490 | 20,361,301 | 151,263 |
| West Coast Airlines..... | 0 | 0 | 0 | 0 | 243,684 | 67,013 | 2,968,698 | 23,809 |
| Total..... | 9 | 5 | 74 | 8 | 22,176,485 | 5,710,150 | 209,915,051 | 1,611,148 |

Helicopter Service

| | | | | | | | | |
|----------------------------|---|---|----|---|-----------|--------|-----------|---------|
| Chicago Helicopter Airways | 0 | 0 | 0 | 0 | - | - | - | - |
| Los Angeles Airways..... | 2 | 2 | 38 | 6 | 306,378 | 11,936 | 1,264,340 | 49,279 |
| New York Airways..... | 0 | 0 | 0 | 0 | 407,763 | 7,761 | 607,238 | 45,442 |
| San Francisco & Oakland. | 0 | 0 | 0 | 0 | 327,488 | 6,187 | 675,837 | 47,116 |
| Total..... | 2 | 2 | 38 | 6 | 1,041,629 | 25,884 | 2,547,415 | 141,837 |

1/ Both Revenue and Nonrevenue

2/ Bonanza Air Lines and West Coast Airlines merged with Pacific Air Lines on 4/17/68. Pacific changed its name to Air West, Inc.

3/ Lake Central Airlines merged with Allegheny Airlines on 7/1/68.

4/ Trans-Texas Airways changed its name to Texas International Airlines, Inc., 12/4/68.

RECORD OF INDIVIDUAL INTRA-ALASKA AND INTRA-HAWAII CARRIERS
SCHEDULED PASSENGER SERVICE

1968

| Operator | Accidents | | Fatalities | | Revenue Passengers Carried | Passenger Miles ^{1/} (000) | Revenue Plane- Miles | Departures |
|-------------------------------|-----------|----------|------------|-------------|----------------------------------|---|----------------------------|---------------|
| | Total | Fatal | Passg. | Crew Others | | | | |
| <u>Intra-Alaska</u> | | | | | | | | |
| Alaska Coastal Airlines 2/ | 0 | 0 | 0 | 0 | 22,734 | 1,847 | 266,192 | 5,459 |
| Cordova Airlines 3/ | 0 | 0 | 0 | 0 | 1,133 | 257 | 39,588 | 308 |
| Kodiak Airways | 0 | 0 | 0 | 0 | 12,870 | 622 | 199,558 | 7,396 |
| Reeve Aleutian Airways | 0 | 0 | 0 | 0 | 22,939 | 23,338 | 1,114,221 | 4,245 |
| Western Alaska Airlines | 0 | 0 | 0 | 0 | 7,463 | 384 | 256,692 | 7,030 |
| Wien Alaska Airlines 4/ | 0 | 0 | 0 | 0 | 9,371 | 3,420 | 618,091 | 4,947 |
| Wien Consolidated Airlines 4/ | 2 | 1 | 36 | 3 | 151,034 | 51,561 | 4,660,341 | 37,272 |
| Total | 2 | 1 | 36 | 3 | 227,544 | 81,429 | 7,154,683 | 61,198 |
| <u>Intra-Hawaii</u> | | | | | | | | |
| Aloha Airlines | 0 | 0 | 0 | 0 | 714,488 | 115,198 | 3,202,836 | 26,925 |
| Hawaiian Airlines | 1 | 0 | 0 | 0 | 1,246,632 | 201,674 | 4,449,740 | 38,681 |
| Total | 1 | 0 | 0 | 0 | 1,961,120 | 316,872 | 7,652,576 | 65,606 |
| <u>Other</u> | | | | | | | | |
| Aspen Airways | 0 | 0 | 0 | 0 | 32,004 | 3,764 | 360,793 | 3,161 |

^{1/} Both revenue and nonrevenue.

^{2/} Alaska Coastal Airlines merged with Alaska Airlines 4/1/68.

^{3/} Cordova Airlines merged with Alaska Airlines 2/1/68.

^{4/} Wien Alaska Airlines merged with Northern Consolidated 4/1/68. As of 8/1/68 name was changed to Wien Consolidated Airlines, Inc.

3/ Cordova Airlines merged with Alaska Airlines 2/1/66.
 4/ Wien Alaska Airlines merged with Northern Consolidated 4/1/68. As of 8/1/68 name was changed to Wien Consolidated Airlines, Inc.

RECORD OF U. S. INTERNATIONAL CARRIERS
SCHEDULED PASSENGER SERVICE
 1968

| Operator | Accidents | | Fatalities | | | Revenue Passengers Carried | Passenger Miles (000) | Revenue Plane Miles | Departures |
|-----------------------------------|-----------|-------|------------|------|--------|----------------------------------|-----------------------------|---------------------------|------------|
| | Total | Fatal | Passg. | Crew | Others | | | | |
| Alaska Airlines..... | 0 | 0 | 0 | 0 | 0 | 316,958 | 283,930 | 6,102,606 | 35,673 |
| American Airlines..... | 0 | 0 | 0 | 0 | 0 | 254,750 | 311,947 | 4,240,594 | 4,940 |
| Braniff Airways..... | 1 | 0 | 0 | 0 | 0 | 544,465 | 830,584 | 11,823,934 | 11,547 |
| Caribbean-Atlantic Airlines..... | 0 | 0 | 0 | 0 | 0 | 1,006,599 | 108,889 | 2,838,359 | 35,144 |
| Delta Air Lines..... | 0 | 0 | 0 | 0 | 0 | 56,108 | 102,089 | 1,554,988 | 1,360 |
| Eastern Air Lines..... | 1 | 0 | 0 | 0 | 0 | 1,535,976 | 2,341,222 | 23,481,571 | 16,916 |
| National Airlines..... | 0 | 0 | 0 | 0 | 0 | 2/ | 2/ | 22,866,515 | 2/ |
| Northwest Airlines..... | 0 | 0 | 0 | 0 | 0 | 441,765 | 1,352,560 | 197,425,613 | 11,427 |
| Pan American World Airways..... | 9 | 2 | 47 | 10 | 0 | 8,413,633 | 14,681,990 | 197,425,613 | 168,036 |
| Trans Caribbean Airways, Inc..... | 0 | 0 | 0 | 0 | 0 | 410,834 | 671,870 | 6,826,102 | 4,838 |
| Trans World Airlines..... | 0 | 0 | 0 | 0 | 0 | 1,096,338 | 3,978,882 | 52,847,043 | 24,694 |
| United Air Lines..... | 0 | 0 | 0 | 0 | 0 | 1,012,300 | 2,601,424 | 25,348,406 | 11,488 |
| Western Air Lines..... | 0 | 0 | 0 | 0 | 0 | 638,342 | 679,011 | 10,369,056 | 17,703 |
| Total..... | 11 | 2 | 47 | 10 | 0 | 15,728,068 | 27,944,398 | 365,724,787 | 343,766 |

1/ Both revenue and nonrevenue.

2/ National suspended scheduled service between U. S. and Cuba on February 1, 1961.

RECORD OF INDIVIDUAL SUPPLEMENTAL AIR CARRIERS
PASSENGER OPERATIONS (CIVIL AND MILITARY)
1968

| OPERATORS | CIVILIAN SERVICE | | | | | | MILITARY CONTRACT OPERATIONS | | | | | | Total ^{2/} Hours Flown | |
|--------------------------------------|--------------------------|---------------------------------|--|---|---------------------------|---|------------------------------|---------------------------------|--|---|---------------------------|---|---------------------------------------|---------|
| | Accidents Total Fatal | Number Passengers Carried | Revenue Passenger Miles (000) | Revenue ^{1/} Plane Miles | Fatalities Passg. Crew | | Accidents Total Fatal | Number Passengers Carried | Revenue Passenger Miles (000) | Revenue ^{1/} Plane Miles | Fatalities Passg. Crew | | | |
| American Flyers Airline Corp.... | 0 | 135,478 | 182,104 | 2,618,434 | 0 | 0 | 1 | 0 | 107,379 | 148,060 | 2,398,053 | 0 | 0 | 14,787 |
| Capitol International Airways, Inc. | 0 | 200,818 | 849,989 | 6,767,388 | 0 | 0 | 1 | 0 | 101,673 | 648,026 | 4,169,893 | 0 | 0 | 26,942 |
| Johnson Flying Service, Inc..... | 0 | 9,186 | 3,220 | 509,375 | 0 | 0 | 0 | 0 | - | - | - | 0 | 0 | 3,693 |
| Modern Air Transport, Inc..... | 0 | 259,595 | 290,056 | 2,798,316 | 0 | 0 | 0 | 0 | 35,590 | 41,094 | 497,923 | 0 | 0 | 8,192 |
| Overseas National Airways, Inc..... | 0 | 139,241 | 519,831 | 3,302,867 | 0 | 0 | 0 | 0 | 79,329 | 277,366 | 6,695,585 | 0 | 0 | 24,207 |
| Purdue Airlines, Inc..... | 1 | 25,020 | 13,495 | 456,356 | 1 | 0 | 0 | 0 | 25,657 | 14,814 | 385,152 | 0 | 0 | 4,729 |
| Saturn Airways, Inc..... | 0 | 83,559 | 457,864 | 2,784,891 | 0 | 0 | 0 | 0 | 50,512 | 396,566 | 12,488,003 | 0 | 0 | 50,736 |
| Southern Air Transport, Inc..... | 0 | 764 | 632 | 2,053,041 | 0 | 0 | 0 | 0 | 137,474 | 178,445 | 2,643,182 | 0 | 0 | 16,492 |
| Standard Airways, Inc..... | 0 | 159,138 | 338,598 | 3,549,313 | 0 | 0 | 0 | 0 | 33,602 | 66,047 | 801,087 | 0 | 0 | 10,104 |
| Trans International Airlines, Corp. | 0 | 304,466 | 899,117 | 4,613,101 | 0 | 0 | 0 | 0 | 176,529 | 1,017,460 | 6,033,171 | 0 | 0 | 26,426 |
| Vance International Airways, Inc.... | 0 | 35,009 | 10,906 | 149,085 | 0 | 0 | 0 | 0 | - | - | - | 0 | 0 | 696 |
| World Airways, Inc..... | 0 | 206,863 | 748,486 | 7,103,260 | 0 | 0 | 0 | 0 | 335,763 | 1,695,224 | 19,596,555 | 0 | 0 | 57,453 |
| Universal Airlines, Inc..... | 0 | 8,357 | 17,379 | 6,570,081 | 0 | 0 | 0 | 0 | 18,464 | 71,004 | 14,555,619 | 0 | 0 | 76,953 |
| TOTAL..... | 1 | 1,567,494 | 4,331,677 | 43,275,508 | 1 | 0 | 2 | 0 | 1,101,972 | 4,554,106 | 70,264,393 | 0 | 0 | 321,410 |

^{1/} Includes miles flown in cargo operations.

^{2/} Total hours flown in all operations.

The fol
aircraft
sented.

Aircraft

Helicopt

Single E

Piston E

Turbopro

Turbojet

^{1/} Colli
repre

^{2/} Two o

ACCIDENTS BY TYPE OF AIRCRAFT
CERTIFICATED ROUTE AIR CARRIERS
ALL OPERATIONS
1968

The following is a resume of accident involvement of the different categories of aircraft. Accident rates per 100,000 hours of flight operations are also represented.

| <u>Aircraft Category 1/</u> | <u>Total Hours Flown</u> | <u>Accidents</u> | | <u>Accident Rates Per 100,000 Hours</u> | |
|-----------------------------|--------------------------|------------------|--------------|---|--------------|
| | | <u>Total</u> | <u>Fatal</u> | <u>Total</u> | <u>Fatal</u> |
| Helicopters..... | 27,861 | 2 | 2 | 7.18 | 7.18 |
| Single Engine Aircraft... | 13,129 | 1 | 0 | 7.62 | 0.00 |
| Piston Engine Aircraft 2/ | 449,993 | 6 | 0 | 1.33 | 0.00 |
| Turboprop Aircraft 2/.... | 874,756 | 16 | 8 | 1.83 | 0.80 |
| Turbojet Aircraft 2/..... | 4,698,047 | 38 | 4 | 0.81 | 0.06 |

1/ Collisions between U. S. Air Carrier aircraft of different categories are represented under each appropriate category.

2/ Two or more engines.

TYPE OF ACCIDENT VS. INJURY INDEX AND AIRCRAFT DAMAGE
ALL OPERATIONS
 1968

| FIRST TYPE OF ACCIDENT | INJURY INDEX | | | | | AIRCRAFT DAMAGE | | | |
|---|--------------|---------|-------|------|-------|-----------------|-------------|-------|------|
| | FATAL | SERIOUS | MINOR | NONE | TOTAL | DESTROYED | SUBSTANTIAL | MINOR | NONE |
| Ground/water loop or swerve..... | | | 1 | 4 | 5 | | 5 | | |
| Dragged wingtip, pod, or float..... | | | | | | | | | |
| Wheels-up landing..... | | | 1 | 2 | 3 | | 3 | | |
| Wheels-down landing in water..... | | | | 1 | 1 | | 1 | | |
| Gear collapsed..... | | 1 | 1 | 1 | 3 | | 3 | | |
| Gear retracted..... | | | | 1 | 1 | | 1 | | |
| Hard landing..... | | | | 1 | 1 | | 1 | | |
| Nose over/down..... | | | | | | | | | |
| Roll over..... | | | | | | | | | |
| Overshoot..... | | | 1 | | 1 | | 1 | | |
| Undershoot..... | 3 | 1 | 1 | 1 | 6 | 4 | 2 | | |
| Collision with aircraft a/ Both in flight..... | 2 | | | 1 | 3 | | 2 | 1 | |
| One airborne..... | | | | | | | | | |
| Both on ground..... | | | 1 | | 1 | | 2 | | |
| Collision with ground/water Controlled..... | 1 | 1 | 1 | | 3 | 2 | 1 | | |
| Uncontrolled..... | | | | | | | | | |
| Collided with Wires/poles | | | | | | | | | |
| Trees..... | 1 | | | | 1 | 1 | | | |
| Residence(s)..... | | | | | | | | | |
| Other buildings..... | | | | | | | | | |
| Fence, fenceposts..... | | | | | | | | | |
| Electronic towers..... | | | | 1 | 1 | | 1 | | |
| Runway or approach lights..... | | | | | | | | | |
| Airport hazard..... | | | | | | | | | |
| Animals..... | | | | | | | | | |
| Crop..... | | | | | | | | | |
| Flagman, loader..... | | | | | | | | | |
| Ditches..... | | 1 | | | 1 | 1 | | | |
| Snowbank..... | | | | | | | | | |
| Parked aircraft (unattended engines not running) | | | | | | | | | |
| Automobile..... | | | | | | | | | |
| Dirt bank..... | | | | | | | | | |
| Other..... | | | | | | | | | |
| Bird strike (collision with birds)... | | | | | | | | | |
| Stall..... | 2 | 1 | | | 3 | 3 | | | |
| Spin..... | | | | | | | | | |
| Spiral..... | | | | | | | | | |
| Mush..... | | | | | | | | | |
| Fire or explosion | | | | | | | | | |
| In flight..... | | | | 1 | 1 | | 1 | | |
| On ground..... | | | | 1 | 1 | | 1 | | |
| Airframe failure | | | | | | | | | |
| In flight..... | 1 | | | | 1 | 1 | | | |
| On ground..... | | | | | | | | | |
| Engine tearaway..... | | | | | | | | | |
| Engine failure or malfunction..... | | 1 | 1 | | 2 | 1 | 1 | | |
| Propeller/rotor failure..... | | | | | | | | | |
| Propeller..... | | | | | | | | | |
| Tail rotor..... | | | | | | | | | |
| Main rotor..... | 1 | | | | 1 | 1 | | | |
| Propeller/rotor accident to person... | 1 | 2 | | | 3 | | | | 3 |
| Jet intake/exhaust accident to person | | | | | | | | | |
| Propeller/jet rotor blast..... | | | | | | | | | |
| Turbulence..... | 1 | 20 | | | 21 | 1 | 1 | 1 | 18 |
| Hail damage to aircraft..... | | | | | | | | | |
| Lightning strike..... | | | | | | | | | |
| Evasive maneuver..... | | 1 | | | 1 | | | 1 | |
| Uncontrolled altitude deviations.... | | | | | | | | | |
| Ditching..... | | | | | | | | | |
| Missing aircraft, not recovered..... | | | | | | | | | |
| Other/miscellaneous..... | 2 | 4 | | | 6 | 1 | | 1 | 4 |
| Undetermined..... | | | | | | | | | |

| FI PHASE C |
|-----------------|
| Static |
| Starting Eng |
| Idling Engin |
| Engine Runup |
| Idling Rotor |
| Parked - Eng |
| Other..... |
| Taxi |
| To Takeoff... |
| From Landing. |
| Other..... |
| Ground Taxi t |
| Ground Taxi f |
| Ground Taxi, |
| Aerial Taxi t |
| Aerial Taxi t |
| Aerial Taxi. |
| Takeoff |
| Run..... |
| Initial Climb |
| Vertical..... |
| Running..... |
| Aborted (fixe |
| Aborted (roto |
| Other..... |
| Inflight |
| Climb-to-cruis |
| Normal Cruise. |
| Descending.... |
| Holding..... |
| Hovering..... |
| Power-on Desce |
| Autoroative D |
| Uncontrolled D |
| Emergency Desc |
| Low Pass..... |
| Other..... |
| Landing |
| Traffic Patter |
| Final Approach |
| Initial Approa |
| Final Approach |
| Level-off/touch |
| Roll (fixed-wir |
| Roll-on/run-on |
| Power-on landir |
| Go-around (abor |
| Missed Approach |
| Other..... |

a/ Includes all

a/ Includes All Air Carrier Aircraft Involved in Collisions.

PHASE OF OPERATION VS. INJURY INDEX AND AIRCRAFT DAMAGE
ALL OPERATIONS a/
 1968

| FIRST PHASE OF OPERATION | INJURY INDEX | | | | | AIRCRAFT DAMAGE | | | |
|---|--------------|---------|-------|------|-------|-----------------|-------------|-------|------|
| | FATAL | SERIOUS | MINOR | NONE | TOTAL | DESTROYED | SUBSTANTIAL | MINOR | NONE |
| Static | | | | | | | | | |
| Starting Engine/s..... | | | | | | | | | |
| Idling Engine/s..... | 1 | 2 | | 1 | 4 | | 1 | | 3 |
| Engine Runup..... | | | | | | | | | |
| Idling Rotors..... | | | | | | | | | |
| Parked - Engines not operating..... | | 2 | | | 2 | | | | 2 |
| Other..... | | | | | | | | | |
| Taxi | | | | | | | | | |
| To Takeoff..... | | | | 1 | 1 | | 1 | | |
| From Landing..... | | | | 1 | 1 | | 1 | | |
| Other..... | | | | | | | | | |
| Ground Taxi to takeoff..... | | | | | | | | | |
| Ground Taxi from landing..... | | | | | | | | | |
| Ground Taxi, other..... | | | | | | | | | |
| Aerial Taxi to takeoff..... | | | | | | | | | |
| Aerial Taxi to/from landing..... | | | | | | | | | |
| Aerial Taxi, other..... | | | | | | | | | |
| Takeoff | | | | | | | | | |
| Run..... | | | | 2 | 2 | | 2 | | |
| Initial Climb..... | 1 | 1 | | | 2 | 2 | | | |
| Vertical..... | | | | | | | | | |
| Running..... | | | | | | | | | |
| Aborted (fixed-wing)..... | | 1 | | 1 | 2 | 1 | 1 | | |
| Aborted (rotorcraft/VTOL-Vertical T.O.).. | | | | | | | | | |
| Aborted (rotorcraft/STOL-Running T.O.).. | | | | | | | | | |
| Other..... | | | | | | | | | |
| Inflight | | | | | | | | | |
| Climb-to-cruise..... | | | | 1 | 1 | | 1 | | |
| Normal Cruise..... | 4 | 18 | 1 | | 23 | 3 | 2 | 2 | 16 |
| Descending..... | 2 | 5 | | 1 | 8 | 1 | 1 | 1 | 5 |
| Holding..... | | | | | | | | | |
| Hovering..... | | | | | | | | | |
| Power-on Descent..... | | | | | | | | | |
| Autorotative Descent..... | | | | | | | | | |
| Uncontrolled Descent..... | | | | | | | | | |
| Emergency Descent..... | | | | | | | | | |
| Low Pass..... | | | | | | | | | |
| Other..... | | | | | | | | | |
| Landing | | | | | | | | | |
| Traffic Pattern - Circling (VFR)..... | 1 | 1 | | | 2 | 1 | 1 | | |
| Final Approach (VFR)..... | 3 | | 1 | 1 | 5 | 4 | 1 | | |
| Initial Approach (IFR)..... | 2 | | 1 | | 3 | 2 | 1 | | |
| Final Approach (IFR)..... | | 2 | 1 | | 3 | 1 | 2 | | |
| Level-off/touchdown..... | | | 2 | 4 | 6 | | 6 | | |
| Roll (fixed-wing)..... | | 1 | 2 | 3 | 6 | | 6 | | |
| Roll-on/run-on (rotorcraft)..... | | | | | | | | | |
| Power-on landing..... | | | | | | | | | |
| Go-around (aborted) VFR..... | 1 | | | | 1 | 1 | | | |
| Missed Approach (IFR)..... | | | | | | | | | |
| Other..... | | | | | | | | | |

a/ Includes all Air Carrier Aircraft Involved in Collisions.

SELECTED ACCIDENT DATA
ALL OPERATIONS
1968

| <u>CONDITIONS OF LIGHT</u> | <u>ACCIDENTS</u> | | |
|-------------------------------|------------------|--------------|-----------------|
| | <u>TOTAL</u> | <u>FATAL</u> | <u>NONFATAL</u> |
| Dawn..... | 0 | 0 | 0 |
| Daylight..... | 36 | 8 | 28 |
| Dusk (twilight)..... | 2 | 1 | 1 |
| Night (dark)..... | 33 | 6 | 27 |
| Night (moonlight-bright)..... | 0 | 0 | 0 |
| Unknown/Not Reported..... | 0 | 0 | 0 |
| Total..... | 71 | 15 | 56 |

TYPE C
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| <u>TYPE OF WEATHER CONDITIONS</u> | <u>ACCIDENTS</u> | | |
|-----------------------------------|------------------|--------------|-----------------|
| | <u>TOTAL</u> | <u>FATAL</u> | <u>NONFATAL</u> |
| VFR..... | 44 | 9 | 35 |
| IFR..... | 24 | 6 | 18 |
| Below Minimums..... | 1 | 0 | 1 |
| Unknown/Not Reported..... | 2 | 0 | 2 |
| Total..... | 71 | 15 | 56 |

TYPE O
Sch
Sch
Sch
Sch
Non

| <u>AIRPORT PROXIMITY</u> | <u>ACCIDENTS</u> | | |
|-----------------------------|------------------|--------------|-----------------|
| | <u>TOTAL</u> | <u>FATAL</u> | <u>NONFATAL</u> |
| On Airport..... | 29 | 3 | 26 |
| On Sea Plane Base..... | 1 | 0 | 1 |
| On Heliport..... | 0 | 0 | 0 |
| On Barge/Ship/Platform..... | 0 | 0 | 0 |
| In Traffic Pattern..... | 4 | 1 | 3 |
| Within 1/4 Mile..... | 0 | 0 | 0 |
| Within 1/2 Mile..... | 0 | 0 | 0 |
| Within 3/4 Mile..... | 1 | 1 | 0 |
| Within 1 Mile..... | 0 | 0 | 0 |
| Within 2 Miles..... | 1 | 1 | 0 |
| Within 3 Miles..... | 1 | 1 | 0 |
| Within 4 Miles..... | 0 | 0 | 0 |
| Within 5 Miles..... | 1 | 1 | 0 |
| Beyond 5 Miles..... | 30 | 6 | 24 |
| Unknown/Not Reported..... | 3 | 1 | 2 |
| Total..... | 71 | 15 | 56 |

Non
I
Mili
Mili
Test
Trai
Ferr
Comp
Nons
I
t
Nons
I
t
Mili
I
Mili
t
Ferry
Other
Tc

SELECTED ACCIDENT DATA
ALL OPERATIONS
1968

| <u>TYPE OF POWER</u> | <u>ACCIDENT RECORDS</u> | | |
|---------------------------|-------------------------|--------------|-----------------|
| | <u>TOTAL</u> | <u>FATAL</u> | <u>NONFATAL</u> |
| Reciprocating Engine..... | 10 | 1 | 9 |
| Turbojet Engine..... | 17 | 3 | 14 |
| Turboprop Engine..... | 19 | 8 | 11 |
| Turbofan Engine..... | 24 | 1 | 23 |
| Turboshaft Engine..... | 2 | 2 | 0 |
| Total..... | 72 | 15 | 57 |

| <u>TYPE OF OPERATION</u> | <u>ACCIDENT RECORDS</u> | | |
|--|-------------------------|--------------|-----------------|
| | <u>TOTAL</u> | <u>FATAL</u> | <u>NONFATAL</u> |
| Scheduled Domestic Passenger Service | 43 | 11 | 32 |
| Scheduled International Passenger Service..... | 11 | 2 | 9 |
| Scheduled Domestic Cargo Service.... | 3 | 0 | 3 |
| Scheduled International Cargo Service | 0 | 0 | 0 |
| Nonscheduled/Charter Revenue Passenger Domestic (except military contract) | 1 | 1 | 0 |
| Nonscheduled/Charter Revenue Cargo Domestic (except military contract) | 0 | 0 | 0 |
| Military Contract-Passenger-Domestic. | 1 | 0 | 1 |
| Military Contract-Cargo-Domestic..... | 3 | 0 | 3 |
| Test (engineering/maintenance)..... | 0 | 0 | 0 |
| Training (crew)..... | 2 | 0 | 2 |
| Ferry - Domestic..... | 4 | 0 | 4 |
| Company Flight..... | 0 | 0 | 0 |
| Nonscheduled/Charter Revenue Passenger-International (except military contract)..... | 0 | 0 | 0 |
| Nonscheduled/Charter Revenue Cargo-International (except military contract)..... | 1 | 0 | 1 |
| Military Contract - Passenger - International..... | 1 | 0 | 1 |
| Military Contract - Cargo - International..... | 2 | 1 | 1 |
| Ferry-International..... | 0 | 0 | 0 |
| Other..... | 0 | 0 | 0 |
| Total..... | 72 | 15 | 57 |

CAUSE/FACTOR TABLE

U. S. AIR CARRIERS
ALL OPERATIONS

1968

EXCLUDES 17 ACCIDENTS WHICH HAVE NO CAUSAL ASSIGNMENT

INVOLVES 54 TOTAL ACCIDENTS
INVOLVES 7 FATAL ACCIDENTS

INVOLVES 5
INVOLVES

| BROAD CAUSE/FACTOR | FATAL ACCIDENTS | | | NONFATAL ACCIDENTS | | | ALL ACCIDENTS | | |
|---------------------------------------|-----------------|--------|--------|--------------------|--------|--------|---------------|--------|--------|
| | CAUSE | FACTOR | TOTAL* | CAUSE | FACTOR | TOTAL* | CAUSE | FACTOR | TOTAL* |
| PILOT | 4 | | 4 | 21 | 5 | 22 | 25 | 5 | 26 |
| | 57.14 | .00 | 57.14 | 44.68 | 10.64 | 46.81 | 46.30 | 9.26 | 48.15 |
| PERSONNEL | 4 | 1 | 4 | 17 | 1 | 18 | 21 | 2 | 22 |
| | 57.14 | 14.29 | 57.14 | 36.17 | 2.13 | 38.30 | 38.89 | 3.70 | 40.74 |
| AIRFRAME | 1 | 1 | 2 | | | | 1 | 1 | 2 |
| | 14.29 | 14.29 | 28.57 | .00 | .00 | .00 | 1.85 | 1.85 | 3.70 |
| LANDING GEAR | | | | 4 | | 4 | 4 | | 4 |
| | .00 | .00 | .00 | 8.51 | .00 | 8.51 | 7.41 | .00 | 7.41 |
| POWERPLANT | | | | 3 | | 3 | 3 | | 3 |
| | .00 | .00 | .00 | 6.38 | .00 | 6.38 | 5.56 | .00 | 5.56 |
| SYSTEMS | | | | 1 | | 1 | 1 | | 1 |
| | .00 | .00 | .00 | 2.13 | .00 | 2.13 | 1.85 | .00 | 1.85 |
| INSTRUMENTS/EQUIPMENT AND ACCESSORIES | | | | | | | .00 | .00 | .00 |
| ROTORCRAFT | 1 | | 1 | | | | 1 | | 1 |
| | 14.29 | .00 | 14.29 | .00 | .00 | .00 | 1.85 | .00 | 1.85 |
| AIRPORTS/AIRWAYS/FACILITIES | | | | 1 | 8 | 9 | 1 | 8 | 9 |
| | .00 | .00 | .00 | 2.13 | 17.02 | 19.15 | 1.85 | 14.81 | 16.67 |
| WEATHER | 2 | 1 | 3 | 13 | 8 | 21 | 15 | 9 | 24 |
| | 28.57 | 14.29 | 42.86 | 27.66 | 17.02 | 44.68 | 27.78 | 16.67 | 44.44 |
| TERRAIN | | | | | 1 | 1 | | 1 | 1 |
| | .00 | .00 | .00 | .00 | 2.13 | 2.13 | .00 | 1.85 | 1.85 |
| MISCELLANEOUS | 1 | | 1 | 1 | | 1 | 2 | | 2 |
| | 14.29 | .00 | 14.29 | 2.13 | .00 | 2.13 | 3.70 | .00 | 3.70 |
| UNDETERMINED | | | | | | | .00 | .00 | .00 |

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

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

DETAILED CAU

** PILOT **

PILOT IN COMM
DELAYED ACT
DELAYED IN
EXCEEDED DE
FAILED TO RI
FAILED TO S
FAILED TO FI
IMPROPER OPI
IMPROPER LEI
IMPROPER TFI
IMPROPER IN-
INADEQUATE I
INADEQUATE I
MISJUDGED D
MISJUDGED DI
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MISJUDGED SI
MISJUDGED AI
MISJUDGED CI
FAILED TO MA

SUBTOTAL

COPILOT
IMPROPER OPE
IMPROPER IN-
MISJUDGED DI
MISUSED OR F
FAILED TO MA

SUBTOTAL

DUAL STUDENT
IMPROPER OPE
SPONTANEOUS-

SUBTOTAL

** PERSONNEL
FLIGHT INSTRUC
MAINTENANCE, S
IMPROPER MAI
INADEQUATE M
OPERATIONAL SU
INADEQUATE S
WEATHER PERSON
INCORRECT WE
TRAFFIC CONTRD
AIRPORT SUPERV
AIRWAYS FACILI
PRODUCTION-DES
MISCELLANEOUS-
PILOT OF OTH
GROUND CREWM
PASSENGER
DIRECT ENTRI
THIRD PILOT

CAUSE/FACTOR TABLE

U. S. AIR CARRIERS
ALL OPERATIONS

1968

EXCLUDES 17 ACCIDENTS WHICH HAVE NO CAUSAL ASSIGNMENT

INVOLVES 54 TOTAL ACCIDENTS
INVOLVES 7 FATAL ACCIDENTS

| TOTAL* | DETAILED CAUSE/FACTOR | FATAL ACCIDENTS | | | NONFATAL ACCIDENTS | | | ALL ACCIDENTS | | |
|------------------------|--|-----------------|--------|-------|--------------------|--------|-------|---------------|--------|-------|
| | | CAUSE | FACTOR | TOTAL | CAUSE | FACTOR | TOTAL | CAUSE | FACTOR | TOTAL |
| ** PILOT ** | | | | | | | | | | |
| | PILOT IN COMMAND | | | | | | | | | |
| 26 | DELAYED ACTION IN ABORTING TAKEOFF | | | | 1 | | 1 | 1 | | 1 |
| 48.15 | DELAYED IN INITIATING GO-AROUND | 1 | | 1 | | 1 | 1 | 1 | 1 | 2 |
| 22 | EXCEEDED DESIGN STRESS LIMITS OF AIRCRAFT | 1 | | 1 | | | 1 | 1 | | 1 |
| 40.74 | FAILED TO RETRACT LANDING GEAR | | | | 1 | | 1 | 1 | | 1 |
| 2 | FAILED TO SEE AND AVOID OTHER AIRCRAFT | 1 | | 1 | 1 | | 1 | 2 | | 2 |
| 3.70 | FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES ETC | | | | 1 | 3 | 4 | 1 | 3 | 4 |
| 4 | IMPROPER OPERATION OF POWERPLANT + POWERPLANT CONTROLS | | | | 1 | | 1 | 1 | | 1 |
| 7.41 | IMPROPER LEVEL OFF | | | | 1 | | 1 | 1 | | 1 |
| | IMPROPER IFR OPERATION | | | | 2 | | 2 | 2 | | 2 |
| 3 | IMPROPER IN-FLIGHT DECISIONS OR PLANNING | 1 | | 1 | | | 1 | 1 | | 1 |
| 5.56 | INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING | | | | 2 | | 2 | 2 | | 2 |
| | INADEQUATE SUPERVISION OF FLIGHT | 1 | | 1 | 3 | | 3 | 4 | | 4 |
| 1 | MISJUDGED DISTANCE, SPEED, AND ALTITUDE | | | | 1 | | 1 | 1 | | 1 |
| 1.85 | MISJUDGED DISTANCE AND SPEED | | | | 1 | | 1 | 1 | | 1 |
| | MISJUDGED DISTANCE AND ALTITUDE | 1 | | 1 | 2 | | 2 | 3 | | 3 |
| | MISJUDGED SPEED | | | | 1 | | 1 | 1 | | 1 |
| .00 | MISJUDGED ALTITUDE | | | | 1 | | 1 | 1 | | 1 |
| 1 | MISJUDGED CLEARANCE | | | | 1 | | 1 | 1 | | 1 |
| 1.85 | FAILED TO MAINTAIN DIRECTIONAL CONTROL | | | | 3 | | 3 | 3 | | 3 |
| | SUBTOTAL | 6 | | 6 | 23 | 4 | 27 | 29 | 4 | 33 |
| 9 | COPILOT | | | | | | | | | |
| 16.67 | IMPROPER OPERATION OF BRAKES AND/OR FLIGHT CONTROLS | | | | 1 | | 1 | 1 | | 1 |
| 24 | IMPROPER IN-FLIGHT DECISIONS OR PLANNING | 1 | | 1 | | | 1 | 1 | | 1 |
| 44.44 | MISJUDGED DISTANCE AND ALTITUDE | | | | 1 | | 1 | 1 | | 1 |
| 1 | MISUSED OR FAILED TO USE FLAPS | | | | | 1 | 1 | 1 | 1 | 1 |
| 1.85 | FAILED TO MAINTAIN DIRECTIONAL CONTROL | | | | 1 | | 1 | 1 | | 1 |
| | SUBTOTAL | 1 | | 1 | 3 | 1 | 4 | 4 | 1 | 5 |
| 2 | DUAL STUDENT | | | | | | | | | |
| 3.70 | IMPROPER OPERATION OF POWERPLANT + POWERPLANT CONTROLS | | | | 1 | | 1 | 1 | | 1 |
| .00 | SPONTANEOUS-IMPROPER ACTION | | | | 1 | | 1 | 1 | | 1 |
| | SUBTOTAL | | | | 2 | | 2 | 2 | | 2 |
| ** PERSONNEL ** | | | | | | | | | | |
| | FLIGHT INSTRUCTOR | | | | | | | | | |
| | MAINTENANCE, SERVICING, INSPECTION | | | | | | | | | |
| | IMPROPER MAINTENANCE(MAINTENANCE PERSONNEL) | | | | 1 | | 1 | 1 | | 1 |
| | INADEQUATE MAINTENANCE AND INSPECTION | 1 | | 1 | 3 | | 3 | 4 | | 4 |
| | OPERATIONAL SUPERVISORY PERSONNEL | | | | | | | | | |
| | INADEQUATE SUPERVISION/TRAINING OF RAMP CREWS | | 1 | 1 | | | | | 1 | 1 |
| | WEATHER PERSONNEL | | | | | | | | | |
| | INCORRECT WEATHER FORECAST | | | | | 1 | 1 | 1 | 1 | 1 |
| | TRAFFIC CONTROL PERSONNEL | | | | | | | | | |
| | AIRPORT SUPERVISORY PERSONNEL | | | | | | | | | |
| | AIRWAYS FACILITIES PERSONNEL | | | | | | | | | |
| | PRODUCTION-DESIGN | | | | | | | | | |
| | MISCELLANEOUS-PERSONNEL | | | | | | | | | |
| | PILOT OF OTHER AIRCRAFT | 1 | | 1 | 1 | | 1 | 2 | | 2 |
| | GROUND CREWMAN | 1 | | 1 | 1 | | 1 | 2 | | 2 |
| | PASSENGER | 1 | | 1 | 8 | | 8 | 9 | | 9 |
| | DIRECT ENTRIES | | | | 1 | | 1 | 1 | | 1 |
| | THIRD PILOT | | | | | | | | | |

CAUSE/FACTOR TABLE

PERSONNEL (CONTINUED)

| | FATAL ACCIDENTS | | | NONFATAL ACCIDENTS | | | ALL ACCIDENTS | | |
|---|-----------------|--------|-------|--------------------|--------|-------|---------------|--------|-------|
| | CAUSE | FACTOR | TOTAL | CAUSE | FACTOR | TOTAL | CAUSE | FACTOR | TOTAL |
| OTHER | | | | 1 | | 1 | 1 | | 1 |
| FLIGHT ENGINEER | | | | | | | | | |
| OTHER FLIGHT PERSONNEL | | | | 2 | | 2 | 2 | | 2 |
| DISPATCHING | | | | | | | | | |
| SUBTOTAL | 4 | 1 | 5 | 18 | 1 | 19 | 22 | 2 | 24 |
| ** AIRFRAME ** | | | | | | | | | |
| WINGS | | | | | | | | | |
| OTHER | 1 | | 1 | | | | 1 | | 1 |
| FUSELAGE | | | | | | | | | |
| DOORS, DOOR FRAMES | | 1 | 1 | | | | | 1 | 1 |
| LANDING GEAR | | | | | | | | | |
| NORMAL RETRACTION/EXTENSION ASSEMBLY | | | | 3 | | 3 | 3 | | 3 |
| EMERGENCY/EXTENSION ASSEMBLY | | | | 3 | | 3 | 3 | | 3 |
| WHEELS, TIRES, AXLES | | | | 1 | | 1 | 1 | | 1 |
| FLIGHT CONTROL SURFACES | | | | | | | | | |
| SUBTOTAL | 1 | 1 | 2 | 7 | | 7 | 8 | 1 | 9 |
| ** POWERPLANT ** | | | | | | | | | |
| ENGINE STRUCTURE | | | | | | | | | |
| CYLINDER ASSEMBLY | | | | 1 | | 1 | 1 | | 1 |
| IGNITION SYSTEM | | | | | | | | | |
| FUEL SYSTEM | | | | | | | | | |
| LINES AND FITTINGS | | | | 1 | | 1 | 1 | | 1 |
| LUBRICATING SYSTEM | | | | | | | | | |
| COOLING SYSTEM | | | | | | | | | |
| PROPELLER AND ACCESSORIES | | | | | | | | | |
| EXHAUST SYSTEM | | | | | | | | | |
| ENGINE ACCESSORIES | | | | | | | | | |
| ENGINE CONTROLS-COCKPIT | | | | | | | | | |
| POWERPLANT-INSTRUMENTS | | | | | | | | | |
| MISCELLANEOUS | | | | | | | | | |
| REDUCTION GEAR ASSEMBLY | | | | | | | | | |
| COMPRESSOR ASSEMBLY | | | | | | | | | |
| BEARING, ROTOR SHAFT | | | | 1 | | 1 | 1 | | 1 |
| COMBUSTION ASSEMBLY | | | | | | | | | |
| TURBINE ASSEMBLY | | | | | | | | | |
| ACCESSORY DRIVE ASSEMBLY | | | | | | | | | |
| LUBRICATING SYSTEM | | | | | | | | | |
| FUEL SYSTEM | | | | | | | | | |
| SAFETY SYSTEM | | | | | | | | | |
| IGNITION SYSTEM | | | | | | | | | |
| TORQUEMETER | | | | | | | | | |
| AIR BLEED | | | | | | | | | |
| EXHAUST SYSTEM | | | | | | | | | |
| THRUST REVERSER | | | | | | | | | |
| PROPELLER SYSTEM | | | | | | | | | |
| CONSTANT SPEED DRIVE | | | | | | | | | |
| POWER LEVER | | | | | | | | | |
| PROPELLER LEVER | | | | | | | | | |
| REVERSE THRUST LEVER | | | | | | | | | |
| ENGINE INDICATING EQUIPMENT | | | | | | | | | |
| ENGINE INSTALLATION | | | | | | | | | |
| SUBTOTAL | | | | 3 | | 3 | 3 | | 3 |
| ** SYSTEMS ** | | | | | | | | | |
| ELECTRICAL SYSTEM | | | | | | | | | |
| HYDRAULIC SYSTEM | | | | | | | | | |
| FLIGHT CONTROL SYSTEMS | | | | | | | | | |
| ANTI-ICING, DE-ICING SYSTEMS | | | | | | | | | |
| AIR CONDITION, HEATING AND PRESSURIZATION | | | | | | | | | |
| AUTO PILOT | | | | | | | | | |
| OTHER | | | | 1 | | 1 | 1 | | 1 |
| FIRE WARNING SYSTEM | | | | | | | | | |
| FIRE EXTINGUISHER SYSTEM | | | | | | | | | |
| OXYGEN SYSTEM | | | | | | | | | |

SYSTEMS (CON

OTHER SYSTEM

SUBTOTAL

** ROTORCRA

ROTOR ASSEMB

OTHER

TRANSMISSION

FLIGHT CONTRI

MISCELLANEOU

SUBTOTAL

** AIRPORTS,

AIRPORT FACIL

APPROACH LI

AIRPORT CONDI

WET RUNWAY

ICE/SLUSH C

AIRWAYS FACIL

SUBTOTAL

** WEATHER *

LOW CEILING

RAIN

FOG

ICING CONDI

UNFAVORABLE

SUDDEN WIND

TURBULENCE

TURBULENCE,

OBSTRUCTION

THUNDERSTOR

SUBTOTAL

** TERRAIN *

HIGH OBSTRU

SUBTOTAL

** MISCELLAN

EVASIVE MANI

FOREIGN MATI

SUBTOTAL

GRAND TOI

** MISCELLANE

CHECKLIST-FA

INSTRUMENTS-

SEAT BELT NO

LANDED ON FO

IMPROPERLY S

FATIGUE FRAG

HYDRAULIC FA

THRUST REVER

WINDSHIELD,

IMPROPER ALI

SEPARATION I

FIRE IN ENGI

CORRODED/COR

IDENTS

TOR TOTAL

CAUSE/FACTOR TABLE

SYSTEMS (CONTINUED)

| FATAL ACCIDENTS | | | NONFATAL ACCIDENTS | | | ALL ACCIDENTS | | |
|-----------------|--------|-------|--------------------|--------|-------|---------------|--------|-------|
| CAUSE | FACTOR | TOTAL | CAUSE | FACTOR | TOTAL | CAUSE | FACTOR | TOTAL |

OTHER SYSTEMS

SUBTOTAL

** ROTORCRAFT **

ROTOR ASSEMBLIES

OTHER
TRANSMISSION ROTOR DRIVE SYSTEM
FLIGHT CONTROL SYSTEMS
MISCELLANEOUS UNITS AND ASSEMBLIES

SUBTOTAL

** AIRPORTS/AIRWAYS/FACILITIES **

AIRPORT FACILITIES

APPROACH LIGHTING
AIRPORT CONDITIONS
WET RUNWAY
ICE/SLUSH ON RUNWAY
AIRWAYS FACILITIES

SUBTOTAL

** WEATHER **

LOW CEILING

RAIN
FOG
ICING CONDITIONS-INCLUDES SLEET, FREEZING RAIN, ETC
UNFAVORABLE WIND CONDITIONS
SUDDEN WINDSHIFT
TURBULENCE IN FLIGHT, CLEAR AIR
TURBULENCE, ASSOCIATED W/CLOUDS, THUNDERSTORMS
OBSTRUCTIONS TO VISION
THUNDERSTORM ACTIVITY

SUBTOTAL

** TERRAIN **

HIGH OBSTRUCTIONS

SUBTOTAL

** MISCELLANEOUS **

EVASIVE MANEUVER TO AVOID COLLISION
FOREIGN MATERIAL AFFECTING NORMAL OPERATIONS

SUBTOTAL

GRAND TOTAL

** MISCELLANEOUS ACTS, CONDITIONS **

CHECKLIST-FAILED TO USE
INSTRUMENTS-MISREAD OR FAILED TO READ
SEAT BELT NOT FASTENED
LANDED ON FOAMED RUNWAY
IMPROPERLY SECURED
FATIGUE FRACTURE
HYDRAULIC FAILURE
THRUST REVERSAL-ASYMMETRICAL
WINDSHIELD, DIRTY, FOGGY, ETC-RESTRICTED VISION
IMPROPER ALIGNMENT/ADJUSTMENT
SEPARATION IN FLIGHT
FIRE IN ENGINE
CORRODED/CORROSION

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 | 1 | | 1 | | | | 1 | | 1 |
| AIRFRAME ICE | | | | 1 | | 1 | 1 | | 1 |
| SUNGLARE | 1 | | 1 | | | | 1 | | 1 |
| LACK OF LUBRICATION-SPECIFIC PART, NOT SYSTEM | | | | 1 | | 1 | 1 | | 1 |
| SIMULATED CONDITIONS | | | | 1 | | 1 | 1 | | 1 |
| MISSING | | | | | 1 | 1 | | 1 | 1 |
| HYDROPLANING ON WET RUNWAY | | | | | 3 | 3 | | 3 | 3 |
| SEAT BELT SIGN OFF | | | | | 7 | 7 | 2 | 7 | 9 |
| OVERLOAD FAILURE | 1 | | 1 | | | | 1 | | 1 |
| MATERIAL FAILURE | | 1 | 1 | 1 | | 1 | 1 | 1 | 2 |
| LEAK/LEAKAGE | | | | 1 | | 1 | 1 | | 1 |
| IMPROPERLY INSTALLED | | | | 1 | | 1 | 1 | | 1 |
| JAMMED | | | | 2 | | 2 | 2 | | 2 |
| SEAT BELT SIGN ON | | | | | 1 | 1 | | 1 | 1 |

DIRECT ENTRY CAUSES

PERSONNEL-SPONTANEOUS IMPROPER ACTION.

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

ACCIDENTS, ACCIDENT RATES AND FATALITIES
U. S. CERTIFICATED ROUTE AND SUPPLEMENTAL AIR CARRIERS

DATE: 10/1/55

ALL ACCIDENTS
 SE FACTOR TOTAL
 1
 2
 3
 4
 5
 6
 7
 8
 9
 10
 11
 12
 13
 14
 15
 16
 17
 18
 19
 20
 21
 22
 23
 24
 25
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 27
 28
 29
 30
 31
 32
 33
 34
 35
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 37
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 42
 43
 44
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 46
 47
 48
 49
 50

ACCIDENTS, ACCIDENT RATES AND FATALITIES
U. S. CERTIFICATED ROUTE AND SUPPLEMENTAL AIR CARRIERS

(ALL OPERATIONS)

1958 - 1968

| Year | Accidents | | Fatalities | | Aircraft Miles Flown | Accident Rate Per 1 Million Miles Flown | | |
|-----------|-----------|-------|--------------------|-------|----------------------|---|-------|------|
| | Total | Fatal | Passg. Crew Others | Total | | Total | Fatal | |
| 1958..... | 91 | 14 | 128 | 29 | 3 | 160 | .084 | .013 |
| 1959..... | 101 | 18 | 271 | 61 | 8 | 340 | .087 | .016 |
| 1960..... | 90 | 17 a/ | 429 | 57 | 13 | 499 | .079 | .012 |
| 1961..... | 84 | 11 | 275 | 35 | 1 | 311 | .076 | .010 |
| 1962..... | 70 | 10 | 279 | 48 | 3 | 330 | .059 | .008 |
| 1963..... | 77 | 13 | 223 | 41 | 0 | 264 | .063 | .011 |
| 1964..... | 79 | 13 | 202 | 35 | 1 | 238 | .058 | .009 |
| 1965..... | 83 | 9 | 226 | 35 | 0 | 261 | .054 | .006 |
| 1966..... | 75 | 8 | 137 | 27 | 108 | 272 | .042 | .005 |
| 1967..... | 70 | 12 | 229 | 39 | 18 | 286 | .032 | .006 |
| 1968..... | 71 | 15 b/ | 306 | 37 | 6 | 349 | .028 | .005 |

Note: Sabotage accidents occurring 1/6/60, 5/22/62, and 5/7/64 are included in all computations except rates.

- a/ Includes 3 midair collisions nonfatal to Air Carrier occupants, excluded in fatal accident rates.
- b/ Includes 2 midair collisions nonfatal to Air Carrier occupants, excluded in fatal accident rates.
- c/ Nonrevenue miles of Supplemental Air Carriers are not reported.

ACCIDENTS, ACCIDENT RATES AND FATALITIES

U. S. CERTIFICATED ROUTE CARRIERS

(ALL OPERATIONS)

1958 - 1968

| Year | Accidents | | Fatalities | | Aircraft Miles Flown | Accident Rate Per 1 Million Miles Flown | |
|-----------|-----------|------------------|----------------|--------|-------------------------|--|--------------------|
| | Total | Fatal | Passg. Crew | Others | | Total Accidents | Fatal Accidents |
| 1958..... | 85 | 13 | 128 | 27 3 | 1,045,439,000 | .081 | .012 |
| 1959..... | 93 | 17 | 270 | 59 8 | 1,112,703,000 | .084 | .015 |
| 1960..... | 82 | 13 ^{a/} | 336 | 46 11 | 1,077,745,000 | .075 | .009 |
| 1961..... | 78 | 8 | 124 | 24 1 | 1,056,059,000 | .073 | .007 |
| 1962..... | 63 | 9 | 279 | 45 3 | 1,117,104,000 | .055 | .007 |
| 1963..... | 66 | 10 | 222 | 37 0 | 1,180,620,000 | .056 | .008 |
| 1964..... | 70 | 12 | 200 | 33 1 | 1,286,029,000 | .054 | .009 |
| 1965..... | 73 | 8 | 226 | 30 0 | 1,473,744,000 | .050 | .005 |
| 1966..... | 69 | 6 | 59 | 20 107 | 1,683,547,000 | .041 | .004 |
| 1967..... | 66 | 11 | 229 | 36 18 | 2,083,668,000 | .032 | .005 |
| 1968..... | 62 | 14 ^{a/} | 305 | 37 6 | 2,385,309,000 | .026 | .005 |

Note: Sabotage accidents occurring 1/6/60, 5/22/62 and 5/7/64 are included in all computations except rates.

^{a/} Includes 2 midair collisions nonfatal to Air Carrier occupants, excluded in fatal accident rates.

Note: Sabotage accidents occurring 1/6/60, 5/22/62 and 5/7/64 are included in all computations except rates.

a/ Includes 2 midair collisions nonfatal to Air Carrier occupants, excluded in fatal accident rates.

ACCIDENTS, ACCIDENT RATES
CERTIFICATED ROUTE AIR CARRIERS
ALL SCHEDULED SERVICE
1958 - 1968

| Year | Accidents | | Miles Flown | Hours Flown | Number of Departures | Per 1 Million Miles | | Accident Rates | | Per 100,000 Hours | | Per 100,000 Departures | | | |
|-----------|-----------|-------|---------------|-------------|----------------------|---------------------|-----------|----------------|-----------|-------------------|-----------|------------------------|-----------|-----------|-----------|
| | Total | Fatal | | | | Total | Fatal | Total | Fatal | Total | Fatal | Total | Fatal | Total | Fatal |
| | | | | | | Accidents | Accidents | Accidents | Accidents | Accidents | Accidents | Accidents | Accidents | Accidents | Accidents |
| 1958..... | 67 | 8 | 972,988,000 | 4,338,900 | 3,633,348 | .068 | .008 | 1.544 | .184 | 1.844 | .220 | | | | |
| 1959..... | 78 | 14 | 1,030,252,000 | 4,503,000 | 3,912,178 | .075 | .013 | 1.732 | .310 | 1.993 | .357 | | | | |
| 1960..... | 72 | 12 | 997,923,699 | 4,088,650 | 3,856,477 | .071 | .009 | 1.736 | .220 | 1.841 | .233 | | | | |
| 1961..... | 66 | 6 | 969,656,382 | 3,654,503 | 3,750,364 | .068 | .006 | 1.806 | .164 | 1.760 | .160 | | | | |
| 1962..... | 47 | 6 | 1,009,683,730 | 3,491,174 | 3,660,245 | .046 | .005 | 1.318 | .143 | 1.257 | .137 | | | | |
| 1963..... | 54 | 6 | 1,094,524,929 | 3,604,228 | 3,787,779 | .049 | .005 | 1.498 | .166 | 1.426 | .158 | | | | |
| 1964..... | 59 | 11 | 1,189,135,380 | 3,774,771 | 3,954,083 | .049 | .008 | 1.537 | .265 | 1.467 | .253 | | | | |
| 1965..... | 65 | 8 | 1,353,499,382 | 4,071,987 | 4,197,489 | .048 | .006 | 1.596 | .196 | 1.549 | .191 | | | | |
| 1966..... | 56 | 5 | 1,482,273,113 | 4,232,982 | 4,373,229 | .038 | .003 | 1.323 | .118 | 1.281 | .114 | | | | |
| 1967..... | 54 | 8 | 1,833,562,999 | 4,924,080 | 4,945,969 | .029 | .004 | 1.097 | .162 | 1.092 | .162 | | | | |
| 1968..... | 56 | 13 | 2,146,037,985 | 5,521,931 | 5,299,987 | .026 | .005 | 1.014 | .199 | 1.057 | .208 | | | | |

Note: Sabotage accidents occurring 1/6/60, 5/22/62, and 5/7/64 are included in all computations except rates.

a/ Includes 2 midair collisions, nonfatal to Air Carrier occupants, excluded in fatal accident rates.

ACCIDENTS, FATALITIES, FATALITY RATES
U. S. CERTIFICATED ROUTE AIR CARRIERS
SCHEDULED DOMESTIC AND INTERNATIONAL PASSENGER SERVICE

1958 - 1968

| Year | Accidents | | Fatalities | | Passengers Carried | Passenger-Miles Flown | Passenger Fatality Rate Per 100 Million Passenger-Miles |
|--------------|-----------|-------|------------|------------|--------------------|-----------------------|---|
| | Total | Fatal | Passg. | Crew Total | | | |
| 1958 a/..... | 54 | 6 | 124 | 15 | 48,853,324 | 32,497,133,000 | 0.382 |
| 1959..... | 67 | 10 | 268 | 42 | 56,002,094 | 37,765,609,000 | 0.710 |
| 1960..... | 67 | 12 b/ | 336 | 42 | 57,886,566 | 40,484,908,000 | 0.758 |
| 1961..... | 58 | 5 | 124 | 11 | 58,411,977 | 41,701,560,000 | 0.298 |
| 1962..... | 43 | 5 | 158 | 25 | 62,548,399 | 45,853,343,000 | 0.264 |
| 1963..... | 49 | 5 | 121 | 24 | 71,437,828 | 52,703,333,000 | 0.230 |
| 1964..... | 53 | 9 | 200 | 26 | 81,762,273 | 61,022,488,000 | 0.261 |
| 1965..... | 63 | 7 | 226 | 27 | 94,662,314 | 71,796,399,000 | 0.315 |
| 1966..... | 53 | 4 | 59 | 13 | 109,390,556 | 83,142,197,000 | 0.071 |
| 1967..... | 51 | 8 | 226 | 24 | 132,088,038 | 103,381,996,000 | 0.219 |
| 1968..... | 53 | 13 b/ | 305 | 34 | 150,162,701 | 119,612,578,000 | 0.255 |

Note: Passenger deaths occurring in sabotage accidents are included in the passenger fatality column, but excluded in the computation of passenger fatality rates; 1960-29; 1962-37; 1964-41.

a/ Excludes Alaskan Carriers.

b/ Includes 2 midair collisions, nonfatal to Air Carrier occupants, excluded in fatal accident rates.

ACCIDENTS, FATALITIES, FATALITY RATES
U. S. CERTIFICATED ROUTE AIR CARRIERS
SCHEDULED DOMESTIC PASSENGER SERVICE

a/ Excludes Alaskan Carriers.
 b/ Includes 2 midair collisions, nonfatal to Air Carrier occupants, excluded in fatal accident rates.

ACCIDENTS, FATALITIES, FATALITY RATES
 U. S. CERTIFICATED ROUTE AIR CARRIERS
 SCHEDULED DOMESTIC PASSENGER SERVICE

1958 - 1968

| Year | Accidents | | Fatalities | | Passengers Carried | Passenger-Miles Flown | Passenger Fatality Rate Per 100 Million Passenger-Miles Flown |
|--------------------------|-----------|------------------|------------|------------|--------------------|-----------------------|---|
| | Total | Fatal | Passg. | Crew Total | | | |
| 1958 ^{a/} | 42 | 4 | 114 | 15 | 44,580,984 | 26,266,401,000 | 0.434 |
| 1959..... | 61 | 9 | 209 | 33 | 51,002,218 | 30,435,495,000 | 0.687 |
| 1960..... | 62 | 10 ^{b/} | 326 | 37 | 52,391,708 | 31,851,753,000 | 0.932 |
| 1961..... | 56 | 5 | 124 | 11 | 52,712,556 | 32,547,998,000 | 0.381 |
| 1962..... | 35 | 5 | 158 | 25 | 55,949,948 | 35,287,129,000 | 0.343 |
| 1963..... | 39 | 4 | 48 | 16 | 63,924,577 | 40,263,416,000 | 0.119 |
| 1964..... | 45 | 6 | 106 | 14 | 72,987,736 | 46,044,743,000 | 0.141 |
| 1965..... | 55 | 6 | 205 | 18 | 84,466,884 | 54,254,616,000 | 0.378 |
| 1966..... | 50 | 4 | 59 | 13 | 97,745,566 | 62,964,948,000 | 0.094 |
| 1967..... | 43 | 8 | 226 | 24 | 118,663,542 | 78,911,773,000 | 0.286 |
| 1968..... | 42 | 11 ^{b/} | 258 | 24 | 134,434,632 | 91,668,180,000 | 0.281 |

Note: Passenger deaths occurring in sabotage accidents are included in the passenger fatality column, but excluded in the computation of passenger fatality rates; 1960-29; 1962-37; 1964-41.

a/ Excludes Alaskan Carriers.
 b/ Includes 2 midair collisions nonfatal to Air Carrier occupants.

ACCIDENTS, FATALITIES, FATALITY RATES
U. S. CERTIFICATED ROUTE AIR CARRIERS

SCHEDULED INTERNATIONAL PASSENGER SERVICE

1958 - 1968

| Year | Accidents | | Fatalities | | Passengers Carried | Passenger-Miles Flown | Passenger Fatality Rate Per 100 Million Passenger-Miles Flown |
|--------------------------|-----------|-------|-------------|-------|--------------------|-----------------------|---|
| | Total | Fatal | Passg. Crew | Total | | | |
| 1958 ^{a/} | 12 | 2 | 10 | 0 | 4,272,340 | 6,230,732,000 | 0.160 |
| 1959..... | 6 | 1 | 59 | 9 | 4,999,876 | 7,330,114,000 | 0.804 |
| 1960..... | 5 | 2 | 10 | 5 | 5,494,858 | 8,633,155,000 | 0.115 |
| 1961..... | 2 | 0 | 0 | 0 | 5,699,421 | 9,153,562,000 | 0 |
| 1962..... | 8 | 0 | 0 | 0 | 6,598,451 | 10,566,214,000 | 0 |
| 1963..... | 10 | 1 | 73 | 8 | 7,513,251 | 12,439,917,000 | 0.586 |
| 1964..... | 8 | 3 | 94 | 12 | 8,774,537 | 14,977,745,000 | 0.627 |
| 1965..... | 8 | 1 | 21 | 9 | 10,195,430 | 17,541,783,000 | 0.119 |
| 1966..... | 3 | 0 | 0 | 0 | 11,644,990 | 20,177,249,000 | 0 |
| 1967..... | 8 | 0 | 0 | 0 | 13,424,496 | 24,470,223,000 | 0 |
| 1968..... | 11 | 2 | 47 | 10 | 15,728,069 | 27,944,398,000 | 0.168 |

^{a/} Excludes Alaskan Carriers.

ACCIDENTS, ACCIDENT RATES AND FATALITIES

U. S. SUPPLEMENTAL AIR CARRIERS

a/ Excludes Alaskan Carriers.

ACCIDENTS, ACCIDENT RATES AND FATALITIES

U. S. SUPPLEMENTAL AIR CARRIERS

(ALL OPERATIONS)

1958 - 1968

| Year | Accidents | | Fatalities | | Aircraft Miles Flown | Accident Rate Per 1 Million Miles Flown | | | |
|-----------|-----------|-------|-----------------------|-------|-------------------------|--|--------------------|------|------|
| | Total | Fatal | Passg. Crew Others | Total | | Total Accidents | Fatal Accidents | | |
| 1958..... | 6 | 1 | 0 | 2 | 0 | 2 | .153 | .025 | |
| 1959..... | 8 | 1 | 1 | 2 | 0 | 3 | .186 | .023 | |
| 1960..... | 8 | 4 | a/ | 93 | 11 | 2 | 106 | .152 | .057 |
| 1961..... | 6 | 3 | 151 | 11 | 0 | 162 | 47,983,000 | .125 | .062 |
| 1962..... | 7 | 1 | 0 | 3 | 0 | 3 | 53,270,000 | .131 | .019 |
| 1963..... | 11 | 3 | 1 | 4 | 0 | 5 | 50,692,000 | b/ | .059 |
| 1964..... | 9 | 1 | 2 | 2 | 0 | 4 | 50,838,000 | b/ | .020 |
| 1965..... | 10 | 1 | 0 | 5 | 0 | 5 | 62,651,000 | b/ | .016 |
| 1966..... | 6 | 2 | 78 | 7 | 1 | 86 | 84,911,000 | b/ | .024 |
| 1967..... | 4 | 1 | 0 | 3 | 0 | 3 | 96,071,000 | b/ | .010 |
| 1968..... | 9 | 1 | 1 | 0 | 0 | 1 | 113,540,000 | b/ | .009 |

a/ Includes 1 midair collision nonfatal to Air Carrier occupants.

b/ Nonrevenue miles not reported.

ACCIDENTS, FATALITIES, FATALITY RATES
 U. S. SUPPLEMENTAL AIR CARRIERS
PASSENGER OPERATIONS (CIVIL AND MILITARY)

1958 - 1968

| | <u>Accidents</u> | | <u>Fatalities</u> | | <u>Passengers Carried</u> | <u>Passenger-Miles Flown</u> | <u>Passenger Fatality Rate Per 100 Million Passenger-Miles Flown</u> |
|-----------|------------------|--------------|-------------------|-------------------|---------------------------|------------------------------|--|
| | <u>Total</u> | <u>Fatal</u> | <u>Passg.</u> | <u>Crew Total</u> | | | |
| 1958..... | 2 | 0 | 0 | 0 | 676,072 | 1,152,988,000 | 0 |
| 1959..... | 5 | 1 | 1 | 2 | 895,518 | 1,629,556,000 | 0.06 |
| 1960..... | 3 | 2 | 93 | 9 | 1,057,933 | 2,207,595,000 | 4.21 |
| 1961..... | 2 | 2 | 151 | 9 | 978,171 | 1,543,027,000 | 9.79 |
| 1962..... | 1 | 0 | 0 | 0 | 823,383 | 1,789,154,000 | 0 |
| 1963..... | 2 | 0 | 0 | 0 | NA | 1,533,810,000 | 0 |
| 1964..... | 0 | 0 | 0 | 0 | 674,489 | 1,502,018,000 | 0 |
| 1965..... | 0 | 0 | 0 | 0 | 1,060,206 | 2,489,173,000 | 0 |
| 1966..... | 1 | 1 | 78 | 5 | 1,597,911 | 4,125,445,000 | 1.89 |
| 1967..... | 0 | 0 | 0 | 0 | 2,315,820 | 5,995,901,000 | 0 |
| 1968..... | 3 | 1 | 1 | 0 | 2,669,466 | 8,885,783,000 | 0.01 |

TYPE OF ACCIDENT VS P

| TYPE OF ACCIDENT | STATIC | | | | | TAXI | | | | | TAKEOFF | | | | | | | | | | | | | | | | | | |
|---------------------------------------|--------------------|------------------|--------------|----------------------------------|----------|------------|----------------------|-------------|------------------------|--------------------------|----------------------|--------------------------|--------------------------|----------------------|----------|----------|---------------|------------|-----------|----------|--------------------------------|-------------------------------|-------|-----------------|---------------|------------|---------------|----------|---|
| | Starting engine(s) | Idling engine(s) | Engine runup | Idling taxies * not operating | Other | To takeoff | From landing to taxi | Ground taxi | Ground taxi to taxi | Ground taxi to taxi * | Aerial taxi, other * | Aerial taxi to taxi * | Aerial taxi from taxi | Aerial taxi, other * | Other | Run | Initial climb | Vertical * | Running * | Absorbed | Absorbed vertical takeoff * | Absorbed turning takeoff * | Other | Climb to cruise | Normal cruise | Descending | Holding (IFR) | Other | |
| Ground - waterloop, swerve | | | | | | 1 | | | | | | | | | | 1 | | | | | | | | | | | | | |
| 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 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| One airborne | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 |
| Both on ground ** | 1 | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | |
| Collision With Ground/Water | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Controlled | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Uncontrolled | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Collision With | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Wires/poles | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Trees | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Residence(s) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Other buildings | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fence, fenceposts | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Electronic towers | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Runway or approach lights | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Airport hazard | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Animals | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Crop | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Flagman, loader | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ditches | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Snowbank | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Parked aircraft | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Automobile | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dirt bank | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Other | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bird strike | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Stall | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Spin | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Spiral | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mush | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fire or Explosion | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| In flight | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| On ground | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Airframe Failure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| In flight | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| On ground | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Engine tearaway | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Engine failure or malfunction | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Propeller/Rotor Failure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Propeller | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tail rotor | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Main rotor | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Propeller/Rotor accident to person | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Jet intake/exhaust accident to person | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Propeller/Jet/Rotor Blast | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Turbulence | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hail damage to aircraft | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lightning strike | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Evasive maneuver | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Uncontrolled altitude deviations | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ditching | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Missing aircraft, not recovered | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Other | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Undetermined | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TOTAL | 4 | 2 | 1 | 1 | 1 | | | | | | | | | | 2 | 2 | | | 2 | | | | | | | 1 | 23 | 8 | |

* Rotorcraft only (Unattended, engines not running)
 ** Collision between U.S. Air Carrier Aircraft counted as one accident/phase of operation in totals

Section II

BRIEFS OF ACCIDENTS

NATIONAL TRANSPORTATION SAFETY BOARD

DEPARTMENT OF TRANSPORTATION

WASHINGTON, D. C. 20591

BRIEFS OF ACCIDENTS

U. S. AIR CARRIERS

ALL OPERATIONS

1968

| FILE | DATE | LOCATION | AIRCRAFT DATA | INJURIES F S M/N | FLIGHT PURPOSE | PILOT DATA |
|--------|-----------------------|---|---|--------------------------|--|--|
| 1-0001 | 1/1/68 TIME - 0035 | MCGUIRE AFB, NJ | DOUGLAS DC-8F N4906C DAMAGE-SUBSTANTIAL | CR- 0 0 9 PX- 0 0 183 | MIL CONTRACT PASSENGER INTL | AIRLINE TRANSPORT, AGE 49, 12861 TOTAL HOURS, 3090 IN TYPE, INSTRUMENT RATED. |
| | | NAME OF AIRPORT - MCGUIRE AFB OPERATOR - CAPITOL AIRWAYS, INC. TYPE OF ACCIDENT GROUND-WATER LOOP-SERVE | | | | |
| | | PROBABLE CAUSE PILOT IN COMMAND - FAILED TO MAINTAIN DIRECTIONAL CONTROL AIRPORTS/AIRWAYS/FACILITIES - AIRPORT CONDITIONS: ICE/SLUSH ON RUNWAY REMARKS- ACFT WHEELS LOST RNMV TRACTION DURING TURN TO ALIGN ACFT WITH TAKEOFF RNMV. SNO CYRD GLZ ICE ON RNMV | | | | |
| | | | | | PHASE OF OPERATION TAXI: TO TAKEOFF | |

BRIEFS OF ACCIDENTS

| FILE | DATE | LOCATION | AIRCRAFT DATA | INJURIES | | | FLIGHT PURPOSE | PILOT DATA |
|--------|---------|------------------------------------|--|----------|---|-----|---------------------|--|
| | | | | F | S | M/N | | |
| 1-0002 | 1/28/68 | BENTON HARBOR, MICH TIME - 1755 | CONVAIR 440 N2041 DAMAGE-SUBSTANTIAL | CR- 0 | 0 | 3 | SCHED DOM PASSG SRV | AIRLINE TRANSPORT, AGE 38, 11029 TOTAL HOURS, 4809 IN TYPE, INSTRUMENT RATED. |

NAME OF AIRPORT - ROSS
OPERATOR - NORTH CENTRAL AIRLINES, INC.
TYPE OF ACCIDENT
COLLISION WITH GROUND/WATER: CONTROLLED
GEAR COLLAPSED

PHASE OF OPERATION
LANDING: FINAL APPROACH
LANDING: FINAL APPROACH

PROBABLE CAUSE
PILOT IN COMMAND - MISJUDGED ALTITUDE
MISCELLANEOUS ACTS, CONDITIONS - INSTRUMENTS-MISREAD OR FAILED TO READ
FACTOR
MISCELLANEOUS ACTS, CONDITIONS - OVERLOAD FAILURE
MISCELLANEOUS ACTS, CONDITIONS - SEPARATION IN FLIGHT
WEATHER - LOW CEILING
WEATHER - FOG
WEATHER BRIEFING - COMPANY DISPATCH
WEATHER FORECAST - FORECAST SUBSTANTIALLY CORRECT
EMERGENCY CIRCUMSTANCES - PRECAUTIONARY LANDING ON AIRPORT
SUSPECTED OR KNOWN AIRCRAFT DAMAGE

SKY CONDITION
OVERCAST
VISIBILITY AT ACCIDENT SITE
1 MILE OR LESS
OBSTRUCTIONS TO VISION AT ACCIDENT SITE
FOG
TYPE OF WEATHER CONDITIONS
BELOW MINIMUMS
REMARKS- PLTS MISREAD ALTIMETER. ACFT STRUCK LAKE MICH, LOST NOSE GR. SUCCESSFUL GO AROUND AND LNDG AT OMARE.

CEILING AT ACCIDENT SITE
400
PRECIPITATION AT ACCIDENT SITE
NONE
TEMPERATURE-F
38
TYPE OF FLIGHT PLAN
IFR

BRIEFS OF ACCIDENTS

| FILE | DATE | LOCATION | AIRCRAFT DATA | INJURIES | | | FLIGHT PURPOSE | PILOT DATA |
|--------|--------|----------------------------|--|----------|---|-----|---------------------|--|
| | | | | F | S | M/N | | |
| 1-0003 | 5/3/68 | DAWSON, TEX TIME - 1548 | LOCKHEED L-188 N9707C DAMAGE-DESTROYED | CR- 5 | 0 | 0 | SCHED DOM PASSG SRV | AIRLINE TRANSPORT, AGE 46, 10890 TOTAL HOURS. |

BRIEFS OF ACCIDENTS

| FILE | DATE | LOCATION | AIRCRAFT DATA | INJURIES | | | FLIGHT PURPOSE | PILOT DATA |
|--------|-----------------------|-------------|--|-----------|------------|-------|---------------------|--|
| | | | | F | S | M/N | | |
| 1-0003 | 5/3/68 TIME - 1548 | DAWSON, TEX | LOCKHEED L-188 N9707C DAMAGE-DESTROYED | CR- 5 0 0 | PX- 80 0 0 | 0 0 0 | SCHED DOM PASSG SRV | AIRLINE TRANSPORT, AGE 46, 10890 TOTAL HOURS, 1380 IN TYPE, INSTRUMENT RATED. |

OPERATOR - BRANIFF AIRWAYS, INC.
 TYPE OF ACCIDENT
 TURBULENCE
 AIRFRAME FAILURE: IN FLIGHT

PHASE OF OPERATION
 IN FLIGHT: NORMAL CRUISE
 IN FLIGHT: OTHER

PROBABLE CAUSE

PILOT IN COMMAND - IMPROPER IN-FLIGHT DECISIONS OR PLANNING
 PILOT IN COMMAND - EXCEEDED DESIGNED STRESS LIMITS OF AIRCRAFT
 AIRFRAME - WINGS: OTHER
 MISCELLANEOUS ACTS, CONDITIONS - OVERLOAD FAILURE
 WEATHER - TURBULENCE, ASSOCIATED W/ CLOUDS, THUNDERSTORMS
 FACTOR

MISCELLANEOUS ACTS, CONDITIONS - SEPARATION IN FLIGHT
 WEATHER BRIEFING - SELF-HELP, PILOT CHECKED WEATHER DATA
 WEATHER FORECAST - FORECAST SUBSTANTIALLY CORRECT

SKY CONDITION

UNKNOWN/NOT REPORTED
 VISIBILITY AT ACCIDENT SITE
 UNKNOWN/NOT REPORTED
 OBSTRUCTIONS TO VISION AT ACCIDENT SITE
 UNKNOWN/NOT REPORTED
 TYPE OF FLIGHT PLAN
 IFR

CEILING AT ACCIDENT SITE
 UNKNOWN/NOT REPORTED
 PRECIPITATION AT ACCIDENT SITE
 HAIL, RAIN
 TYPE OF WEATHER CONDITIONS
 IFR

REMARKS- DURG ATTEMPTD RECOVERY FROM UNUSUAL ATTITUDE INDUCED BY TSTM TURB,R WING FAILED IN OVERLOAD.

| | | | | | | | | |
|--------|-----------------------|------------------|--|-----------|------------|-----------|---------------------|--|
| 1-0004 | 3/3/68 TIME - 2257 | WASH,NATL.APT,DC | LOCKHEED 188C N135US DAMAGE-NONE | CR- 0 0 6 | PX- 0 0 77 | OT- 0 1 0 | SCHED DOM PASSG SRV | AIRLINE TRANSPORT, AGE 37, 13489 TOTAL HOURS, 2375 IN TYPE, INSTRUMENT RATED. |
|--------|-----------------------|------------------|--|-----------|------------|-----------|---------------------|--|

NAME OF AIRPORT - WASH,NATL
 OPERATOR - NORTHWEST AIRLINES, INC.
 TYPE OF ACCIDENT
 PROPELLER/ROTOR ACCIDENT TO PERSON

PHASE OF OPERATION
 STATIC: IDLING ENGINE(S)

PROBABLE CAUSE

PERSONNEL - MISCELLANEOUS-PERSONNEL: GROUND CREWMAN
 REMARKS- RAMP SERVICE MAN RAN INTO NO.4 PROP, OTHER ENGS SHUT DOWN. CREW WAITING FOR APU.

| | | | | | | | | |
|--------|------------------------|-----------------|---|-----------|------------|-------|---------------------|--|
| 1-0005 | 5/22/68 TIME - 1651 | PARAMOUNT,CALIF | SIKORSKY S-61L N303Y DAMAGE-DESTROYED | CR- 3 0 0 | PX- 20 0 0 | 0 0 0 | SCHED DOM PASSG SRV | AIRLINE TRANSPORT, AGE 45, 12096 TOTAL HOURS, 4208 IN TYPE, NOT INSTRU- MENT RATED. |
|--------|------------------------|-----------------|---|-----------|------------|-------|---------------------|--|

OPERATOR - LOS ANGELES AIRWAY, INC.
 TYPE OF ACCIDENT
 MISCELLANEOUS
 COLLISION WITH GROUND/WATER: UNCONTROLLED
 FIRE AFTER IMPACT
 REMARKS- PRELIM DATA. UNDER INVESTIGATION. STRIKES BY ROTOR BLADES DESTROYED STRUCTURAL INTEGRITY OF ACFT.

PHASE OF OPERATION
 IN FLIGHT: NORMAL CRUISE
 IN FLIGHT: UNCONTROLLED DESCENT

BRIEFS OF ACCIDENTS

FILE DATE LOCATION AIRCRAFT DATA INJURIES FLIGHT PURPOSE PILOT DATA

1-0006 3/2/68 NR. APPLETON, OHIO BOEING 727 CR- 0 2 4 SCHED DOM PASSG SRV AIRLINE TRANSPORT, AGE
 TIME - 1241 N8161G PX- 0 0 85 45, 18490 TOTAL HOURS,
 DAMAGE-NONE 1380 IN TYPE, INSTRUMENT
 RATED.

OPERATOR - EASTERN AIR LINES, INC.
 TYPE OF ACCIDENT
 EVASIVE MANEUVER

PROBABLE CAUSE
 PHASE OF OPERATION
 IN FLIGHT: DESCENDING

MISCELLANEOUS - EVASIVE MANEUVER TO AVOID COLLISION
 REMARKS- ON TOP OF OVC, VIS UNRSTD. TFC ADVY ISSUED, UNID ACFT 2 MI. ACFT 1ST SEEN BY N8161G CREW AT ABOUT 1 MI

1-0007 1/13/68 NO. PACIFIC OCEAN BOEING 707 CR- 0 0 9 SCHED INTERNATL PASSG SRV ATR, FLIGHT INSTR., AGE
 TIME - 0400 N715PA PX- 0 2 56 52, 18107 TOTAL HOURS,
 DAMAGE-NONE 4607 IN TYPE, INSTRUMENT
 RATED.

OPERATOR - PAN AMERICAN WORLD AIRWAYS, INC.
 TYPE OF ACCIDENT
 TURBULENCE

PROBABLE CAUSE
 PHASE OF OPERATION
 IN FLIGHT: NORMAL CRUISE

WEATHER - TURBULENCE, ASSOCIATED W/ CLOUDS, THUNDERSTORMS
 PERSONNEL - MISCELLANEOUS-PERSONNEL: PASSENGER

FACTOR
 MISCELLANEOUS ACTS, CONDITIONS - SEAT BELT NOT FASTENED
 WEATHER BRIEFING - COMPANY DISPATCH
 WEATHER FORECAST - WEATHER SLIGHTLY WORSE THAN FORECAST

SKY CONDITION
 UNKNOWN/NOT REPORTED
 CEILING AT ACCIDENT SITE
 UNKNOWN/NOT REPORTED

VISIBILITY AT ACCIDENT SITE
 UNKNOWN/NOT REPORTED
 PRECIPITATION AT ACCIDENT SITE
 UNKNOWN/NOT REPORTED

OBSTRUCTIONS TO VISION AT ACCIDENT SITE
 UNKNOWN/NOT REPORTED
 TYPE OF FLIGHT PLAN
 IFR

REMARKS- PAX WERE PREVIOUSLY ADVISED TO KEEP SEAT BELTS LOOSELY FASTENED. RADAR DID NOT SHOW RETURN.

1-0008 2/15/68 CHATTANOOGA, TENN DOUGLAS DC-6 CR- 0 0 3 TRAINING ATR, FLIGHT INSTR., AGE
 TIME - 0920 N1906H PX- 0 0 0 37, 10192 TOTAL HOURS,
 DAMAGE-SUBSTANTIAL 4573 IN TYPE, INSTRUMENT
 RATED.

NAME OF AIRPORT - LOVELL
 OPERATOR - DELTA AIR LINES, INC.
 TYPE OF ACCIDENT
 GEAR RETRACTED

PROBABLE CAUSE
 PHASE OF OPERATION
 TAKEDOFF: RUN

PERSONNEL - THIRD PILOT: OTHER
 PERSONNEL - SPONTANEOUS IMPROPER ACTION.
 REMARKS- PLT RIDING IN JUMP SEAT INADVERTENTLY RAISED GR.

BRIEFS OF ACCIDENTS

| FILE | DATE | LOCATION | AIRCRAFT DATA | INJURIES F S M/N | FLIGHT PURPOSE | PILOT DATA |
|--------|------------------------|--|--|------------------------|-----------------------|---|
| 1-0009 | 4/28/68 TIME - 0523 | ATLANTIC CITY, NJ | DOUGLAS DC-8 N1820 DAMAGE-DESTROYED | CR- 0 2 2 PX- 0 0 0 | 2 2 TRAINING | AIRLINE TRANSPORT, AGE 42, 13849 TOTAL HOURS, 1756 IN TYPE, INSTRUMENT RATED. |
| | | NAME OF AIRPORT - ATLANTIC CITY OPERATOR - CAPITOL AIRWAYS, INC. TYPE OF ACCIDENT ENGINE FAILURE OR MALFUNCTION COLLIDED WITH: DITCHES | | | | |
| | | PROBABLE CAUSE MISCELLANEOUS ACTS, CONDITIONS - SIMULATED CONDITIONS DUAL STUDENT - IMPROPER OPERATION OF POWERPLANT & POWERPLANT CONTROLS DUAL STUDENT - SPONTANEOUS-IMPROPER ACTION PARTIAL POWER LOSS - PARTIAL LOSS OF POWER - 2 ENGINES FIRE AFTER IMPACT REMARKS- A/S WENT BELOW VMC ON SIM 2 ENG LNDG. PLT MISUSED POWER, LOST CONTROL. ACFT LND OFF RNMW, STRUCK DITCH | | | | |
| | | | | | | PHASE OF OPERATION LANDING: TRAFFIC PATTERN-CIRCLING LANDING: ROLL |
| 1-0010 | 5/17/68 TIME - 0715 | VENETIE, ALAS | PILATUS PC6-H2 N2851T DAMAGE-SUBSTANTIAL | CR- 0 0 1 PX- 0 0 0 | 1 SCHED DOM CARGO SRV | COMMERCIAL, AGE 42, 8972 TOTAL HOURS, 9 IN TYPE, INSTRUMENT RATED. |
| | | NAME OF AIRPORT - VENETIE OPERATOR - WIEN CONSOLIDATED AIRLINES, INC. TYPE OF ACCIDENT GROUND-WATER LOOP-SERVE COLLIDED WITH: DITCHES | | | | |
| | | PROBABLE CAUSE PILOT IN COMMAND - FAILED TO MAINTAIN DIRECTIONAL CONTROL FACTOR WEATHER - SUDDEN WINDSHIFT WEATHER BRIEFING - UNKNOWN/NOT REPORTED WEATHER FORECAST - UNKNOWN/NOT REPORTED | | | | |
| | | SKY CONDITION CLEAR VISIBILITY AT ACCIDENT SITE 5 OR OVER OBSTRUCTIONS TO VISION AT ACCIDENT SITE NONE WIND VELOCITY-KNOTS 10 TYPE OF FLIGHT PLAN VFR | | | | |
| | | REMARKS- QUARTERING TAILWIND 10K GUSTING TO 15K. | | | | |
| | | | | | | CEILING AT ACCIDENT SITE UNLIMITED PRECIPITATION AT ACCIDENT SITE NONE WIND DIRECTION-DEGREES 360 TYPE OF WEATHER CONDITIONS VFR |

BRIEFS OF ACCIDENTS

FILE DATE LOCATION AIRCRAFT DATA INJURIES FLIGHT PILOT DATA
 F S M/N PURPOSE

1-0011 8/4/68 MILWAUKEE, WIS CONVAIR 580 CR- 0 1 3 SCHED DOM PASSG SRV AIRLINE TRANSPORT, AGE
 TIME - 0848 N4634S PX- 0 0 8 42, 12163 TOTAL HOURS,
 DAMAGE-SUBSTANTIAL DT- 3 0 0 364 IN TYPE, INSTRUMENT
 RATED.

OPERATOR - NORTH CENTRAL AIRLINES, INC.
 TYPE OF ACCIDENT
 COLLISION WITH AIRCRAFT: BOTH IN FLIGHT
 PHASE OF OPERATION
 IN FLIGHT: DESCENDING

PROBABLE CAUSE

COPILOT - IMPROPER IN-FLIGHT DECISIONS OR PLANNING
 PILOT IN COMMAND - INADEQUATE SUPERVISION OF FLIGHT
 WEATHER - OBSTRUCTIONS TO VISION
 MISCELLANEOUS ACTS, CONDITIONS - WINDSHIELD, DIRTY, FOGGY, ETC. - RESTRICTED VISION
 MISCELLANEOUS - FOREIGN MATERIAL AFFECTING NORMAL OPERATIONS
 MISCELLANEOUS ACTS, CONDITIONS - SUNGLARE
 WEATHER BRIEFING - COMPANY DISPATCH
 WEATHER FORECAST - UNKNOWN/NOT REPORTED

SKY CONDITION

BROKEN
 VISIBILITY AT ACCIDENT SITE
 4 MILES OR LESS
 OBSTRUCTIONS TO VISION AT ACCIDENT SITE
 HAZE
 TYPE OF FLIGHT PLAN
 IFR
 CEILING AT ACCIDENT SITE
 UNKNOWN/NOT REPORTED
 PRECIPITATION AT ACCIDENT SITE
 NONE
 TYPE OF WEATHER CONDITIONS
 VFR

SPECIAL DATA

SEGMENTS OF AVIATION INVOLVED - SMALL US GEN. AV. - US AIR CARRIER
 CONTROLLING AGENCY - APPROACH CONTROL - LANDING
 TRAFFIC ADVISORY ISSUED - BY APPROACH CONTROL
 CONTROL ZONE/AREA - NO
 EVASIVE ACTION TAKEN - NO
 REMARKS- INSECT SMEARS AND METRO CONDS REDUCED VISUAL DETECT CPTY. RADAR ISSUED, CRM DID NOT REQ AVOID VECT.
 RADAR CTL/SURVEILLANCE - UNDER RADAR CONTACT
 CONTROLLED/UNCONTROLLED AIRPORT - CONTROLLED AIRPORT
 CONVERGENCE ANGLE-DEGREES - 42

1-0011 8/4/68 MILWAUKEE, WIS CESSNA 150 CR- 1 0 0 NONCOMMERCIAL PRIVATE, AGE 19, 184
 TIME - 0848 N8742S PX- 2 0 0 PLEASURE TOTAL HOURS, 3 IN TYPE,
 DAMAGE-DESTROYED OT- 0 1 11 NOT INSTRUMENT RATED.

TYPE OF ACCIDENT

COLLISION WITH AIRCRAFT: BOTH IN FLIGHT
 PHASE OF OPERATION
 IN FLIGHT: NORMAL CRUISE

PROBABLE CAUSE

PERSONNEL - MISCELLANEOUS-PERSONNEL: PILOT OF OTHER AIRCRAFT

SPECIAL DATA

SEGMENTS OF AVIATION INVOLVED - SMALL US GEN. AV. - US AIR CARRIER
 CONTROLLING AGENCY - NO CONTROL
 TRAFFIC ADVISORY ISSUED - BY GROUND CONTROL
 CONTROL ZONE/AREA - NO
 EVASIVE ACTION TAKEN - NO
 REMARKS- N4634S STRUCK N8742S IN FLIGHT.
 RADAR CTL/SURVEILLANCE - NOT UNDER RADAR CONTACT
 CONTROLLED/UNCONTROLLED AIRPORT - CONTROLLED AIRPORT
 CONVERGENCE ANGLE-DEGREES - 42

BRIEFS OF ACCIDENTS

| FILE | DATE | LOCATION | AIRCRAFT DATA | INJURIES | | | FLIGHT PURPOSE | PILOT DATA |
|--------|------------------------|---------------|---|----------|---|-----|-----------------------|---|
| | | | | F | S | M/N | | |
| 1-0012 | 3/27/68 TIME - 1757 | ST. LOUIS, MO | CESSNA 150F N8669G DAMAGE-DESTROYED | CR- 2 | 0 | 0 | INSTRUCTIONAL DUAL | COMMERCIAL, FL-INSTR. AGE 31, 381 TOTAL HOURS, UNK/NR IN TYPE, NOT INSTRUMENT RATED. |

NAME OF AIRPORT - LAMBERT FIELD
 TYPE OF ACCIDENT
 COLLISION WITH AIRCRAFT: BOTH IN FLIGHT

PHASE OF OPERATION
 LANDING: TRAFFIC PATTERN-CIRCLING

PROBABLE CAUSE
 PILOT IN COMMAND - IMPROPER IN-FLIGHT DECISIONS OR PLANNING
 PERSONNEL - MISCELLANEOUS-PERSONNEL: PILOT OF OTHER AIRCRAFT
 MISCELLANEOUS ACTS, CONDITIONS - CONGESTED TRAFFIC-PATTERN

SPECIAL DATA
 SEGMENTS OF AVIATION INVOLVED - SMALL US GEN. AV. - US AIR CARRIER
 CONTROLLING AGENCY - TOWER
 TRAFFIC ADVISORY ISSUED - BY LOCAL CONTROL
 CONTROL ZONE/AREA - YES
 EVASIVE ACTION TAKEN - NO
 REMARKS- PLT DID NOT INFORM TWR OF ACFT PROGRESS INTO TFC PATTERN. LACK OF VIGILANCE IN PATTERN.

| | | | | | | | | |
|--------|------------------------|---------------|---|-------|---|---|---------------------|---|
| 1-0012 | 3/27/68 TIME - 1757 | ST. LOUIS, MO | DOUGLAS DC-9 N970Z DAMAGE-SUBSTANTIAL | CR- 0 | 0 | 5 | SCHED DOM PASSG SRV | AIRLINE TRANSPORT, AGE 53, 24127 TOTAL HOURS, 800 IN TYPE, INSTRUMENT RATED. |
|--------|------------------------|---------------|---|-------|---|---|---------------------|---|

NAME OF AIRPORT - LAMBERT FIELD
 OPERATOR - OZARK AIR LINES, INC.
 TYPE OF ACCIDENT
 COLLISION WITH AIRCRAFT: BOTH IN FLIGHT

PHASE OF OPERATION
 LANDING: TRAFFIC PATTERN-CIRCLING

PROBABLE CAUSE
 PILOT IN COMMAND - FAILED TO SEE AND AVOID OTHER AIRCRAFT
 MISCELLANEOUS ACTS, CONDITIONS - CONGESTED TRAFFIC-PATTERN
 PERSONNEL - MISCELLANEOUS-PERSONNEL: PILOT OF OTHER AIRCRAFT

SPECIAL DATA
 SEGMENTS OF AVIATION INVOLVED - SMALL US GEN. AV. - US AIR CARRIER
 CONTROLLING AGENCY - TOWER
 TRAFFIC ADVISORY ISSUED - BY LOCAL CONTROL
 CONTROL ZONE/AREA - YES
 EVASIVE ACTION TAKEN - YES
 REMARKS- CREW FAILED TO SIGHT CESSNA N8669G AFTER TFC ADV. LACK OF VIGILANCE IN PATTERN.

BRIEFS OF ACCIDENTS

FILE DATE LOCATION AIRCRAFT DATA INJURIES FLIGHT PURPOSE PILOT DATA

1-0013 1/1/68 OXFORD MISS MARTIN 404 CR- 0 0 3 FERRY AIRLINE TRANSPORT, AGE
 TIME - 2300 N251S PX- 0 0 0 35, 9500 TOTAL HOURS,
 DAMAGE-DESTROYED 1400 IN TYPE, INSTRUMENT
 RATED.

NAME OF AIRPORT - UNIVERSITY-OXFORD
 OPERATOR - SOUTHERN AIRWAYS, INC.
 TYPE OF ACCIDENT
 UNDERSHOOT
 GEAR COLLAPSED

PHASE OF OPERATION
 LANDING: FINAL APPROACH
 LANDING: LEVEL OFF/TOUCHDOWN

PROBABLE CAUSE
 COPILOT - MISJUDGED DISTANCE AND ALTITUDE
 PILOT IN COMMAND - MISJUDGED DISTANCE AND ALTITUDE
 PILOT IN COMMAND - INADEQUATE SUPERVISION OF FLIGHT
 FACTOR
 AIRPORTS/AIRWAYS/FACILITIES - AIRPORT FACILITIES: APPROACH LIGHTING
 MISCELLANEOUS ACTS, CONDITIONS - OVERLOAD FAILURE
 FIRE AFTER IMPACT
 REMARKS- NO RMY APPROACH LIGHTS.

1-0014 8/10/68 CHARLESTON, W VA FAIRCHILD FH-227 CR- 3 0 0 SCHED DOM PASSG SRY ATR-FLIGHT INSTR., AGE
 TIME - 0757 N712U PX- 32 2 0 40, 6884 TOTAL HOURS,
 DAMAGE-DESTROYED 3722 IN TYPE, INSTRUMENT
 RATED.

NAME OF AIRPORT - KANAWHA COUNTY
 OPERATOR - PIEDMONT AVIATION, INC.
 TYPE OF ACCIDENT
 UNDERSHOOT
 COLLIDED WITH: TREES

PHASE OF OPERATION
 LANDING: FINAL APPROACH
 LANDING: FINAL APPROACH

PROBABLE CAUSE
 PILOT IN COMMAND - MISJUDGED DISTANCE AND ALTITUDE
 PILOT IN COMMAND - DELAYED IN INITIATING GO-AROUND
 FACTOR
 WEATHER - FOG
 WEATHER BRIEFING - BRIEFING RECEIVED-METHOD UNKNOWN
 WEATHER FORECAST - FORECAST SUBSTANTIALLY CORRECT

SKY CONDITION
 PARTIAL OBSCURATION
 VISIBILITY AT ACCIDENT SITE
 1/4 MILE OR LESS
 OBSTRUCTIONS TO VISION AT ACCIDENT SITE
 FOG
 TYPE OF FLIGHT PLAN
 IFR

CEILING AT ACCIDENT SITE
 UNKNOWN/NOT REPORTED
 PRECIPITATION AT ACCIDENT SITE
 NONE
 TYPE OF WEATHER CONDITIONS
 IFR

FIRE AFTER IMPACT
 REMARKS- UNRECOGNIZED LOSS OF ALTITUDE ORIENTATION DURING FINAL PORTION OF APCH INTO SHALLOW, DENSE FOG.

BRIEFS OF ACCIDENTS

FILE DATE LOCATION AIRCRAFT DATA INJURIES FLIGHT PURPOSE PILOT DATA

1-0015 3/20/68 EVANSVILLE, IND CONVAIR 440 CR- 0 0 3 SCHED DOM PASSG SRY
 TIME - 2007 N4820C

BRIEFS OF ACCIDENTS

| FILE | DATE | LOCATION | AIRCRAFT DATA | INJURIES F S M/N | FLIGHT PURPOSE | PILOT DATA |
|--|------------------------|-----------------|--|-------------------------|---------------------|--|
| 1-0015 | 3/20/68 TIME - 2007 | EVANSVILLE, IND | CONVAIR 440 N4820C DAMAGE--SUBSTANTIAL | CR- 0 0 3 PX- 0 0 39 | SCHED DOM PASSG SRV | AIRLINE TRANSPORT, AGE 35, 7000 TOTAL HOURS, 2000 IN TYPE, UNK/NR INSTRUMENT RATED. |
| <p>NAME OF AIRPORT - DRESS MEMORIAL OPERATOR - DELTA AIR LINES, INC. TYPE OF ACCIDENT ENGINE FAILURE OR MALFUNCTION OVERSHOOT</p> <p>PHASE OF OPERATION IN FLIGHT: NORMAL CRUISE LANDING: LEVEL OFF/TOUCHDOWN</p> <p>PROBABLE CAUSE POWERPLANT - ENGINE STRUCTURE: CYLINDER ASSEMBLY MISCELLANEOUS ACTS, CONDITIONS - MATERIAL FAILURE PILOT IN COMMAND - MISJUDGED DISTANCE AND SPEED FACTOR</p> <p>WEATHER - LOW CEILING WEATHER - RAIN AIRPORTS/AIRWAYS/FACILITIES - AIRPORT CONDITIONS: WET RUNWAY PARTIAL POWER LOSS - PARTIAL LOSS OF POWER - 1 ENGINE WEATHER BRIEFING - COMPANY DISPATCH WEATHER FORECAST - FORECAST SUBSTANTIALLY CORRECT EMERGENCY CIRCUMSTANCES - PRECAUTIONARY LANDING ON AIRPORT</p> <p>SKY CONDITION BROKEN VISIBILITY AT ACCIDENT SITE 3 MILES OR LESS OBSTRUCTIONS TO VISION AT ACCIDENT SITE NONE WIND DIRECTION-DEGREES 10 TYPE OF WEATHER CONDITIONS IFR</p> <p>REMARKS- EXHAUST VALVE IN NUMBER 15 CYLINDER. PILOT STARTED SINGLE ENG GO AROUND AND ABORTED.</p> <p>CEILING AT ACCIDENT SITE 700 PRECIPITATION AT ACCIDENT SITE RAIN RELATIVE BEARING OF WIND TAIL WIND 158-202 DEGREES WIND VELOCITY-KNOTS 12 TYPE OF FLIGHT PLAN IFR</p> | | | | | | |
| 1-0016 | 8/14/68 TIME - 0935 | COMPTON, CALIF | SIKORSKY S-61L N300Y DAMAGE--DESTROYED | CR- 3 0 0 PX- 18 0 0 | SCHED DOM PASSG SRV | AIRLINE TRANSPORT, AGE 32, 5877 TOTAL HOURS, 4300 IN TYPE, INSTRUMENT RATED. |
| <p>OPERATOR - LOS ANGELES AIRWAY, INC. TYPE OF ACCIDENT PROPELLER/ROTOR FAILURE: MAIN ROTOR COLLISION WITH GROUND/WATER: UNCONTROLLED</p> <p>PROBABLE CAUSE ROTORCRAFT - ROTOR ASSEMBLIES: OTHER MISCELLANEOUS ACTS, CONDITIONS - FATIGUE FRACTURE PERSONNEL - MAINTENANCE, SERVICING, INSPECTION: INADEQUATE MAINTENANCE AND INSPECTION FACTOR MISCELLANEOUS ACTS, CONDITIONS - SEPARATION IN FLIGHT FIRE AFTER IMPACT REMARKS- FATIGUE ORIGIN IN AREA OF SUBSTANDARD HARDNESS AND INADEQUATE SHOT PEENING ON M/R BLADE SPINDLE.</p> <p>PHASE OF OPERATION IN FLIGHT: NORMAL CRUISE IN FLIGHT: UNCONTROLLED DESCENT</p> | | | | | | |

BRIEFS OF ACCIDENTS

| FILE | DATE | LOCATION | AIRCRAFT DATA | INJURIES F S M/N | FLIGHT PURPOSE | PILOT DATA |
|--------|------------------------|----------------------|---------------------------------------|-------------------------|---------------------|--|
| 1-0017 | 5/13/68 TIME - 1727 | NR. MASON CITY, IOWA | BOEING 720B N7549AA DAMAGE-NONE | CR- 0 0 7 PX- 0 1 77 | SCHED DOM PASSG SRV | CERTIFICATE UNKNOWN, AGE UNK/NR, UNK/NR TOTAL HOURS, UNK/NR IN TYPE, UNK/NR INSTRUMENT RATED. |

OPERATOR - AMERICAN AIRLINES, INC.
TYPE OF ACCIDENT
TURBULENCE

PROBABLE CAUSE
WEATHER - TURBULENCE IN FLIGHT, CLEAR AIR
FACTOR

MISCELLANEOUS ACTS, CONDITIONS - SEAT BELT SIGN OFF
WEATHER BRIEFING - COMPANY DISPATCH
WEATHER FORECAST - FORECAST SUBSTANTIALLY CORRECT

SKY CONDITION
BROKEN
VISIBILITY AT ACCIDENT SITE

5 OR OVER
OBSTRUCTIONS TO VISION AT ACCIDENT SITE

NONE
TYPE OF FLIGHT PLAN

IFR
REMARKS- CREW WARNED PAX TO KEEP SEAT BELTS FASTENED DUE TO POSSIBLE TURB.

PHASE OF OPERATION
IN FLIGHT: NORMAL CRUISE

CEILING AT ACCIDENT SITE
5000
PRECIPITATION AT ACCIDENT SITE
NONE
TYPE OF WEATHER CONDITIONS
VFR

| | | | | | | |
|--------|------------------------|-----------------|-------------------------------------|-------------------------|---------------------|--|
| 1-0018 | 8/10/68 TIME - 0030 | NR. HERNDON, VA | BOEING 737 N9011U DAMAGE-NONE | CR- 0 0 3 PX- 0 1 44 | SCHED DOM PASSG SRV | CERTIFICATE UNKNOWN, AGE UNK/NR, UNK/NR TOTAL HOURS, UNK/NR IN TYPE, UNK/NR INSTRUMENT RATED. |
|--------|------------------------|-----------------|-------------------------------------|-------------------------|---------------------|--|

OPERATOR - UNITED AIR LINES, INC.
TYPE OF ACCIDENT
MISCELLANEOUS

PROBABLE CAUSE
PERSONNEL - MISCELLANEOUS-PERSONNEL: PASSENGER
REMARKS- PAX FELL WHILE RETURNING TO SEAT FROM BLUE ROOM.

PHASE OF OPERATION
IN FLIGHT: DESCENDING

| | | | | | | |
|--------|------------------------|----------------|------------------------------------|-------------------------|---------------------|--|
| 1-0019 | 6/26/68 TIME - 0004 | COLUMBUS, OHIO | BOEING 727 N6805 DAMAGE-NONE | CR- 0 0 7 PX- 0 2 23 | SCHED DOM PASSG SRV | CERTIFICATE UNKNOWN, AGE UNK/NR, UNK/NR TOTAL HOURS, UNK/NR IN TYPE, UNK/NR INSTRUMENT RATED. |
|--------|------------------------|----------------|------------------------------------|-------------------------|---------------------|--|

NAME OF AIRPORT - PORT COLUMBUS
OPERATOR - AMERICAN AIRLINES, INC.
TYPE OF ACCIDENT
MISCELLANEOUS

PROBABLE CAUSE
PERSONNEL - MISCELLANEOUS-PERSONNEL: PASSENGER
EMERGENCY CIRCUMSTANCES - PRECAUTIONARY LANDING ON AIRPORT
FALSE FIRE WARNING
REMARKS- PAX JUMPED FROM WING. BROKEN WIRE FOUND SHORTED TO A FIRE WARNING ELEMENT CONNECTOR.

PHASE OF OPERATION
STATIC: PARKED-ENGINES NOT OPERATING

BRIEFS OF ACCIDENTS

| FILE | DATE | LOCATION | AIRCRAFT DATA | INJURIES F S M/N | FLIGHT PURPOSE | PILOT DATA |
|--------|------------------------|--------------|------------------------|------------------------|-------------------|-------------------|
| 1-0020 | 8/12/68 TIME - 0622 | JUNEAU, ALAS | GRUMMAN 6-21 N95431 | CR- 0 0 1 PX- 0 0 0 | FERRY | AIRLINE TRANSPORT |

EMERGENCY CIRCUMSTANCES - FALSE FIRE WARNING SHORTED TO A FIRE WARNING ELEMENT CONNECTOR.
 REMARKS- PX JUMPED FROM WING. BROKEN WIRE FOUND

BRIEFS OF ACCIDENTS

| FILE | DATE | LOCATION | AIRCRAFT DATA | INJURIES | | | FLIGHT PURPOSE | PILOT DATA |
|--------|------------------------|--------------|--|-----------|-------|-----|--|------------|
| | | | | F | S | M/N | | |
| 1-0020 | 8/12/68 TIME - 0622 | JUNEAU, ALAS | GRUMMAN G-21 N95431 DAMAGE-SUBSTANTIAL | CR- 0 0 1 | FERRY | | AIRLINE TRANSPORT, AGE 46, UNK/NR TOTAL HOURS, 366 IN TYPE, INSTRUMENT RATED. | |

NAME OF AIRPORT - JUNEAU SEADROME
 OPERATOR - ALASKA AIRLINES, INC.
 TYPE OF ACCIDENT
 WHEELS-DOWN LANDING IN WATER

PROBABLE CAUSE
 PILOT IN COMMAND - FAILED TO RETRACT LANDING GEAR
 FACTOR
 MISCELLANEOUS ACTS, CONDITIONS - CHECKLIST-FAILED TO USE

PHASE OF OPERATION
 LANDING: LEVEL OFF/TOUCHDOWN

| | | | | | | | |
|--------|------------------------|------------------|--|--------------------------------------|--------------------------------|--|--|
| 1-0021 | 6/12/68 TIME - 0719 | NR. DENVER, COLO | CESSNA 337 N2212X DAMAGE-SUBSTANTIAL | CR- 0 0 1 PX- 0 0 1 DT- 0 0 62 | MISCELLANEOUS POLICE PATROL | | COMMERCIAL, AGE 36, 5000 TOTAL HOURS, 200 IN TYPE, NOT INSTRUMENT RATED. |
|--------|------------------------|------------------|--|--------------------------------------|--------------------------------|--|--|

TYPE OF ACCIDENT
 COLLISION WITH AIRCRAFT: BOTH IN FLIGHT

PROBABLE CAUSE
 PERSONNEL - MISCELLANEOUS-PERSONNEL: PILOT OF OTHER AIRCRAFT

SPECIAL DATA
 SEGMENTS OF AVIATION INVOLVED - SMALL US GEN. AV.-US AIR CARRIER
 CONTROLLING AGENCY - NO CONTROL
 TRAFFIC ADVISORY ISSUED - NONE
 CONTROL ZONE/AREA - NO
 HORIZONTAL COLLISION ANGLE-DEGREES - 70
 EVASIVE ACTION TAKEN - NO
 REMARKS- LANDED AT ARPT, NO FURTHER DAMAGE.

PHASE OF OPERATION
 IN FLIGHT: DESCENDING

PHASE OF OPERATION
 IN FLIGHT: DESCENDING

| | | | | | | | |
|--------|------------------------|------------------|--------------------------------------|--------------------------------------|---------------------|--|--|
| 1-0021 | 6/12/68 TIME - 0719 | NR. DENVER, COLO | BOEING 727 N7086U DAMAGE-MINOR | CR- 0 0 7 PX- 0 0 55 DT- 0 0 2 | SCHED DOM PASSG SRV | | AIRLINE TRANSPORT, AGE 43, 16000 TOTAL HOURS, 2400 IN TYPE, INSTRUMENT RATED. |
|--------|------------------------|------------------|--------------------------------------|--------------------------------------|---------------------|--|--|

OPERATOR - UNITED AIR LINES, INC.
 TYPE OF ACCIDENT
 COLLISION WITH AIRCRAFT: BOTH IN FLIGHT

PROBABLE CAUSE
 PILOT IN COMMAND - FAILED TO SEE AND AVOID OTHER AIRCRAFT

SPECIAL DATA
 SEGMENTS OF AVIATION INVOLVED - SMALL US GEN. AV.-US AIR CARRIER
 CONTROLLING AGENCY - APPROACH CONTROL-LANDING
 TRAFFIC ADVISORY ISSUED - BY APPROACH CONTROL
 CONTROL ZONE/AREA - NO
 HORIZONTAL COLLISION ANGLE-DEGREES - 70
 EVASIVE ACTION TAKEN - YES
 REMARKS- LANDED AT ARPT, NO FURTHER DAMAGE.

PHASE OF OPERATION
 IN FLIGHT: DESCENDING

PHASE OF OPERATION
 IN FLIGHT: DESCENDING

BRIEFS OF ACCIDENTS

FILE DATE LOCATION AIRCRAFT DATA INJURIES FLIGHT PURPOSE PILOT DATA

1-0022 8/14/68 NR.PRESQUE ISLE,ME DOUGLAS DC-8 CR- 0 0 9 SCHEID INTERNATL PASSG SRV CERTIFICATE UNKNOWN, AGE UNK/NR, UNK/NR TOTAL HOURS, UNK/NR IN TYPE, UNK/NR INSTRUMENT RATED.

OPERATOR - PAN AMERICAN WORLD AIRWAYS, INC.
 TYPE OF ACCIDENT
 TURBULENCE

PHASE OF OPERATION
 IN FLIGHT: NORMAL CRUISE

PROBABLE CAUSE
 WEATHER - TURBULENCE IN FLIGHT, CLEAR AIR
 FACTOR
 MISCELLANEOUS ACTS, CONDITIONS - SEAT BELT SIGN OFF
 WEATHER BRIEFING - COMPANY DISPATCH
 WEATHER FORECAST - UNKNOWN/NOT REPORTED

SKY CONDITION
 CLEAR
 VISIBILITY AT ACCIDENT SITE
 5 OR OVER
 OBSTRUCTIONS TO VISION AT ACCIDENT SITE
 NONE
 TYPE OF FLIGHT PLAN
 IFR
 REMARKS- PAX FELL IN AISLE, FRACTURED LEFT FOOT.

CEILING AT ACCIDENT SITE
 UNLIMITED
 PRECIPITATION AT ACCIDENT SITE
 NONE
 TYPE OF WEATHER CONDITIONS
 VFR

1-0023 3/21/68 CHICAGO, ILL BOEING 727 CR- 0 1 2 SCHEID DOM CARGO SRV AIRLINE TRANSPORT, AGE 40, 10500 TOTAL HOURS, 1033 IN TYPE, INSTRUMENT RATED.

NAME OF AIRPORT - OHARE INTL
 OPERATOR - UNITED AIR LINES, INC.
 TYPE OF ACCIDENT
 COLLIDED WITH: DITCHES

PHASE OF OPERATION
 TAKEOFF: ABORTED

PROBABLE CAUSE
 PILOT IN COMMAND - DELAYED ACTION IN ABORTING TAKEOFF
 FACTOR
 COPILOT - MISUSED OR FAILED TO USE FLAPS
 FIRE AFTER IMPACT
 REMARKS- CO PLT SET FLAPS 2 DEG, VICE 5 DEG, ARMED T/D WRNG HORN SOUNDED, PLT CONT T/O, ABORTED AFTER LIFTOFF.

1-0024 10/25/68 HANDOVER, NH FAIRCHILD 227 CR- 2 0 1 SCHEID DOM PASSG SRV AIRLINE TRANSPORT, AGE 52, 7449 TOTAL HOURS, 1182 IN TYPE, INSTRUMENT RATED.

NAME OF AIRPORT - LEBANON REGIONAL
 OPERATOR - NORTHEAST AIRLINES, INC.
 TYPE OF ACCIDENT
 COLLISION WITH GROUND/WATER: CONTROLLED
 FIRE AFTER IMPACT
 REMARKS- PRELIMINARY DATA, UNDER INVESTIGATION.

PHASE OF OPERATION
 LANDING: INITIAL APPROACH

BRIEFS OF ACCIDENTS

| FILE | DATE | LOCATION | AIRCRAFT DATA | | INJURIES | | FLIGHT PURPOSE | PILOT DATA |
|--------|-----------------------|--------------------|----------------------|-------------------------|---------------------|-------|--|------------|
| | | | F | S M/N | F | S M/N | | |
| 1-0025 | 6/9/68 TIME - 1351 | SALT LAKE CITY, UT | BOEING 727 N7418U | CR- 0 0 6 PX- 0 1 85 | SCHED DOM PASSG SRV | | AIRLINE TRANSPORT, AGE 36, 7477 TOTAL HOURS, 153 IN TYPE, INSTRUMENT RATED. | |

NAME OF AIRPORT - SALT LAKE CITY
OPERATOR - UNITED AIR LINES, INC.
TYPE OF ACCIDENT
GEAR COLLAPSED

PROBABLE CAUSE
PILOT IN COMMAND - MISJUDGED SPEED
FACTOR

AIRPORTS/AIRWAYS/FACILITIES - AIRPORT CONDITIONS: WET RUNWAY
MISCELLANEOUS ACTS, CONDITIONS - OVERLOAD FAILURE
WEATHER - RAIN
WEATHER BRIEFING - COMPANY DISPATCH
WEATHER FORECAST - FORECAST SUBSTANTIALLY CORRECT

SKY CONDITION
BROKEN/LOWER SCATTERED
VISIBILITY AT ACCIDENT SITE
5 OR OVER
OBSTRUCTIONS TO VISION AT ACCIDENT SITE
NONE
WIND DIRECTION-DEGREES
280

TYPE OF WEATHER CONDITIONS
VFR

REMARKS- NORMAL LNDG ACCOMPLISHED. PLT WAITED TOO LATE TO SLOW ACFT FOR TURNOFF. TSTM IN AREA.

PHASE OF OPERATION
LANDING: ROLL

CEILING AT ACCIDENT SITE
3500
PRECIPITATION AT ACCIDENT SITE
RAIN
RELATIVE BEARING OF WIND
LEFT QUARTERING HEAD WIND 293-337 DEGREES
WIND VELOCITY-KNOTS
12

TYPE OF FLIGHT PLAN
IFR

| | | | | | | | |
|--------|------------------------|------------------|----------------------|-------------------------|---------------------|--|--|
| 1-0026 | 10/5/68 TIME - 0930 | NR., JAMAICA, NY | BOEING 707 N385US | CR- 0 0 5 PX- 0 1 89 | SCHED DOM PASSG SRV | | CERTIFICATE UNKNOWN, AGE UNK/NR, UNK/NR TOTAL HOURS, UNK/NR IN TYPE, UNK/NR INSTRUMENT RATED. |
|--------|------------------------|------------------|----------------------|-------------------------|---------------------|--|--|

OPERATOR - NORTHWEST AIRLINES, INC.
TYPE OF ACCIDENT
MISCELLANEOUS

PROBABLE CAUSE

PERSONNEL - MISCELLANEOUS-PERSONNEL: PASSENGER
REMARKS- SEAT BELT SIGN ON. PAX LEFT SEAT AND TRIPPED OVER BRIEF CASE PLACED IN AISLE BY FELLOW PAX.

PHASE OF OPERATION
IN FLIGHT: DESCENDING

BRIEFS OF ACCIDENTS

FILE DATE LOCATION AIRCRAFT DATA INJURIES FLIGHT PILOT DATA
 F S M/N PURPOSE

I-0027 7/11/68 MR. PHILIPSBURG, PA BOEING 727 CR- 0 2 5 SCHED DOM PASSG SRV CERTIFICATE UNKNOWN, AGE
 TIME - 1310 N894TM N894TM PX- 0 0 34 HOURS, UNK/NR IN TYPE,
 DAMAGE-NONE UNK/NR INSTRUMENT RATED.

OPERATOR - TRANS WORLD AIRLINES, INC.
 TYPE OF ACCIDENT
 TURBULENCE

PHASE OF OPERATION
 IN FLIGHT: NORMAL CRUISE

PROBABLE CAUSE

PERSONNEL - OTHER FLIGHT PERSONNEL
 WEATHER - TURBULENCE ASSOCIATED W/ CLOUDS, THUNDERSTORMS
 WEATHER BRIEFING - COMPANY DISPATCH
 WEATHER FORECAST - UNKNOWN/NOT REPORTED

SKY CONDITION

OBSCURATION
 VISIBILITY AT ACCIDENT SITE
 ZERO

CEILING AT ACCIDENT SITE
 UNKNOWN/NOT REPORTED
 PRECIPITATION AT ACCIDENT SITE
 UNKNOWN/NOT REPORTED
 TYPE OF WEATHER CONDITIONS
 IFR

OBSTRUCTIONS TO VISION AT ACCIDENT SITE
 UNKNOWN/NOT REPORTED
 TYPE OF FLIGHT PLAN
 IFR

REMARKS- UNABLE TO CHNG ATC CLNC. PENETRATED CUMULUS LINE. SEAT BELT SIGN ON CREW AND PAX WARNED.

BRIEFS OF ACCIDENTS

| FILE | DATE | LOCATION | AIRCRAFT DATA | INJURIES | | | FLIGHT PURPOSE | PILOT DATA |
|--------|---------|------------------------|---|-----------|---------------------|-----|----------------|---|
| | | | | F | S | M/N | | |
| 1-0028 | 6/24/68 | NR. SIOUX FALLS, S DAK | CONVAIR 580 N482AC DAMAGE-SUBSTANTIAL | CR- 0 0 3 | SCHED DOM PASSG SRV | | | AIRLINE TRANSPORT, AGE 45, 16810 TOTAL HOURS, 150 IN TYPE, INSTRUMENT RATED. |

OPERATOR - NORTH CENTRAL AIRLINES, INC.
 TYPE OF ACCIDENT
 COLLIDED WITH: ELECTRONIC TOWERS
 PROPELLER/ROTOR FAILURE: PROPELLER

PHASE OF OPERATION
 LANDING: INITIAL APPROACH
 LANDING: INITIAL APPROACH

PROBABLE CAUSE
 PILOT IN COMMAND - IMPROPER IFR OPERATION
 FACTOR

WEATHER - LOW CEILING
 WEATHER - THUNDERSTORM ACTIVITY
 TERRAIN - HIGH OBSTRUCTIONS
 MISCELLANEOUS ACTS, CONDITIONS - SEPARATION IN FLIGHT
 WEATHER BRIEFING - COMPANY DISPATCH
 WEATHER FORECAST - FORECAST SUBSTANTIALLY CORRECT
 EMERGENCY CIRCUMSTANCES - PRECAUTIONARY LANDING ON AIRPORT
 SUSPECTED OR KNOWN AIRCRAFT DAMAGE

SKY CONDITION
 OVERCAST/LOWER SCATTERED
 VISIBILITY AT ACCIDENT SITE
 1 MILE OR LESS
 OBSTRUCTIONS TO VISION AT ACCIDENT SITE
 FOG
 WIND VELOCITY-KNOTS
 13
 TYPE OF FLIGHT PLAN
 IFR
 FIRE AFTER IMPACT
 REMARKS- STRUCK TV TOWER GUY WIRE AVOIDING TSM ACTIVITY. PLT EXCEEDED CLNC LIMITS. LFT PROP SEPARATED. LND OK

| | | | | | | | | |
|--------|---------|------------------|------------------------------------|-----------|---------------------|--|--|---|
| 1-0029 | 9/23/68 | SPRINGFIELD, ILL | BOEING 727 N1981 DAMAGE-NONE | CR- 0 0 7 | SCHED DOM PASSG SRV | | | AIRLINE TRANSPORT, AGE 46, 11000 TOTAL HOURS, 275 IN TYPE, INSTRUMENT RATED. |
|--------|---------|------------------|------------------------------------|-----------|---------------------|--|--|---|

NAME OF AIRPORT - CAPITAL
 OPERATOR - AMERICAN AIRLINES, INC.
 TYPE OF ACCIDENT
 MISCELLANEOUS

PHASE OF OPERATION
 STATIC: PARKED-ENGINES NOT OPERATING

PROBABLE CAUSE
 PERSONNEL - MISCELLANEOUS-PERSONNEL: PASSENGER
 EMERGENCY CIRCUMSTANCES - PRECAUTIONARY LANDING ON AIRPORT
 REMARKS- PX INJURED WHEN THEY JUMPED OR SLID FROM LEADING EDGE OF WINGS. POSSIBILITY OF DYNAMITE ABOARD.

BRIEFS OF ACCIDENTS

| FILE | DATE | LOCATION | AIRCRAFT DATA | INJURIES | | | FLIGHT PURPOSE | PILOT DATA |
|--|------------------------|---------------|---|-----------|------------|-----|------------------------|--|
| | | | | F | S | M/N | | |
| 1-0030 | 3/2/68 TIME - 0158 | SEATTLE, WASH | LOCKHEED 188C N182H DAMAGE-NONE | CR- 0 0 5 | PX- 0 1 81 | | MILITARY CTR PASSG DOM | AIRLINE TRANSPORT, AGE 42, 10405 TOTAL HOURS, 944 IN TYPE, INSTRUMENT RATED. |
| <p>NAME OF AIRPORT - BOEING FIELD OPERATOR - AMERICAN FLYERS AIRLINES CORP. TYPE OF ACCIDENT PROPELLER/ROTOR ACCIDENT TO PERSON</p> <p>PHASE OF OPERATION STATIC: IDLING ENGINE(S)</p> <p>PROBABLE CAUSE PERSONNEL - MISCELLANEOUS-PERSONNEL: PASSENGER PILOT IN COMMAND - FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES, ETC. REMARKS- BOARDING PX THRU FORWARD DOOR WITH ENGINES RUNNING. PX RAN UNDER LEFT WING INTO TURNING PROP.</p> | | | | | | | | |
| 1-0031 | 2/29/68 TIME - 2345 | BOSTON, MASS | BRITISH AC 1-11 N5032 DAMAGE--SUBSTANTIAL | CR- 0 0 4 | PX- 0 0 39 | | SCHED DOM PASSG SRV | AIRLINE TRANSPORT, AGE UNK/NR, 10000 TOTAL HOURS, 1000 IN TYPE, INSTRUMENT RATED. |
| <p>NAME OF AIRPORT - LOGAN OPERATOR - AMERICAN AIRLINES, INC. TYPE OF ACCIDENT GROUND-WATER LOOP-SWERVE GEAR COLLAPSED</p> <p>PHASE OF OPERATION LANDING: ROLL LANDING: ROLL</p> <p>PROBABLE CAUSE COPILOT - IMPROPER OPERATION OF BRAKES AND/OR FLIGHT CONTROLS PILOT IN COMMAND - INADEQUATE SUPERVISION OF FLIGHT FACTOR</p> <p>MISCELLANEOUS ACTS, CONDITIONS - OVERLOAD FAILURE AIRPORTS/AIRWAYS/FACILITIES - AIRPORT CONDITIONS: ICE/SLUSH ON RUNWAY WEATHER - UNFAVORABLE WIND CONDITIONS WEATHER BRIEFING - COMPANY DISPATCH WEATHER FORECAST - FORECAST SUBSTANTIALLY CORRECT</p> <p>SKY CONDITION OBSCURATION VISIBILITY AT ACCIDENT SITE 3/4 MILE OR LESS</p> <p>OBSTRUCTIONS TO VISION AT ACCIDENT SITE NONE</p> <p>WIND VELOCITY-KNOTS 20</p> <p>TYPE OF FLIGHT PLAN IFR</p> <p>REMARKS- DIRECTIONAL CONTROL NOT ESTABLISHED BEFORE REVERSING. 3/4 IN. SLUSH ON RNMV. WIND VBL 20K GUST TO 32K</p> | | | | | | | | |

BRIEFS OF ACCIDENTS

| FILE | DATE | LOCATION | AIRCRAFT DATA | INJURIES F S M/N | FLIGHT PURPOSE | PILOT DATA |
|--------|-------------------------|----------------|---|--------------------------|---|---|
| 1-0032 | 6/28/68 TIME - 1246 | NR. VICHY, MO | DOUGLAS DC-3 N6898D DAMAGE-MINOR | CR- 0 0 4 PX- 1 0 22 | NS/CTR REVENUE PASSG DOM | AIRLINE TRANSPORT, AGE 48, 18672 TOTAL HOURS, 11000 IN TYPE, INSTRUMENT RATED. |
| | | | OPERATOR - PURDUE AIRLINES, INC. TYPE OF ACCIDENT MISCELLANEOUS | | PHASE OF OPERATION IN FLIGHT: NORMAL CRUISE | |
| | | | PROBABLE CAUSE PERSONNEL - MISCELLANEOUS-PERSONNEL: PASSENGER FACTOR | | | |
| | | | AIRFRAME - FUSELAGE: DOORS, DOOR FRAMES MISCELLANEOUS ACTS, CONDITIONS - MATERIAL FAILURE | | | |
| | | | REMARKS- PAX INADVERTENTLY OPENED AIR STAIR DOOR IN FLT. SAFETY CHAIN FAILED AT EYE BOLT, AND PAX FELL OUT. | | | |
| 1-0033 | 12/24/68 TIME - 2012 | BRADFORD, PA | CONVAIR 580 N5802 DAMAGE-DESTROYED | CR- 2 2 0 PX- 18 24 1 | SCHED DOM PASSG SRV | AIRLINE TRANSPORT, AGE 39, 6701 TOTAL HOURS, 1477 IN TYPE, INSTRUMENT RATED. |
| | | | NAME OF AIRPORT - BRADFORD OPERATOR - ALLEGHENY AIRLINES, INC. | | PHASE OF OPERATION LANDING: INITIAL APPROACH | |
| | | | TYPE OF ACCIDENT COLLIDED WITH: TREES FIRE AFTER IMPACT | | | |
| | | | REMARKS- PRELIMINARY DATA UNDER INVESTIGATION. | | | |
| 1-0034 | 1/27/68 TIME - 0532 | OAKLAND, CALIF | BOEING 707 N371WA DAMAGE-SUBSTANTIAL | CR- 0 0 9 PX- 0 0 1 | FERRY | ATR, FLIGHT INSTR., AGE 47, 20086 TOTAL HOURS, 1171 IN TYPE, INSTRUMENT RATED. |
| | | | NAME OF AIRPORT - OAKLAND OPERATOR - WORLD AIRWAYS, INC. | | PHASE OF OPERATION TAKEOFF: RUN | |
| | | | TYPE OF ACCIDENT GROUND-WATER LOOP-SERVE | | | |
| | | | PROBABLE CAUSE COPILOT - FAILED TO MAINTAIN DIRECTIONAL CONTROL PILOT IN COMMAND - INADEQUATE SUPERVISION OF FLIGHT FACTOR | | | |
| | | | AIRPORTS/AIRWAYS/FACILITIES - AIRPORT CONDITIONS: WET RUNWAY REMARKS- CAPT FAILED TO TAKE CORRECTIVE ACTION IN TIME. | | | |

BRIEFS OF ACCIDENTS

FILE DATE LOCATION AIRCRAFT DATA INJURIES FLIGHT PURPOSE PILOT DATA
F S M/N

1-0035 1/28/68 NR.HILO,HAWAII CONVAIR 640 CR- 0 0 3 SCHED DOM PASSG SRV AIRLINE TRANSPORT, AGE
TIME - 1415 N5510K PX- 0 1 41 DAMAGE-NONE 47, 19350 TOTAL HOURS,
875 IN TYPE, INSTRUMENT
RATED.

OPERATOR - HAWAIIAN AIRLINES, INC.
TYPE OF ACCIDENT
TURBULENCE

PHASE OF OPERATION
IN FLIGHT: NORMAL CRUISE

PROBABLE CAUSE
PERSONNEL - MISCELLANEOUS-PERSONNEL: PASSENGER
MISCELLANEOUS ACTS, CONDITIONS - SEAT BELT NOT FASTENED
WEATHER - TURBULENCE, ASSOCIATED W/ CLOUDS, THUNDERSTORMS
WEATHER BRIEFING - BRIEFED BY WEATHER BUREAU PERSONNEL, BY PHONE
WEATHER FORECAST - FORECAST SUBSTANTIALLY CORRECT

SKY CONDITION
OVERCAST/LOWER SCATTERED
VISIBILITY AT ACCIDENT SITE
ZERO
OBSTRUCTIONS TO VISION AT ACCIDENT SITE
NONE
TYPE OF FLIGHT PLAN
IFR
REMARKS- SEAT BELT SIGN ON. PAX INADVERTENTLY RELEASED SEAT BELT DURING TURB, WAS THROWN FROM SEAT.
CEILING AT ACCIDENT SITE
10000
PRECIPITATION AT ACCIDENT SITE
HAIL
TYPE OF WEATHER CONDITIONS
VFR

1-0036 11/23/68 NR.CACHIMBO,BRAZIL BOEING 707 CR- 0 1 8 SCHED INTERNATL PASSG SRV CERTIFICATE UNKNOW, AGE
TIME - 0240 N428PA PX- 0 0 0 DAMAGE-NONE HOURS, UNK/NR IN TYPE,
UNK/NR INSTRUMENT RATED.

OPERATOR - PAN AMERICAN WORLD AIRWAYS, INC.
TYPE OF ACCIDENT
TURBULENCE
REMARKS- INVESTIGATION UNDER JURISDICTION OF GOVT OF BRAZIL, NO OF PAX ABD UNREPORTED. SCTD TSTMS.

PHASE OF OPERATION
IN FLIGHT: NORMAL CRUISE

1-0037 8/7/68 BOSTON, MASS BOEING 727 CR- 0 0 6 SCHED DOM PASSG SRV AIRLINE TRANSPORT, AGE
TIME - 1336 N7419U PX- 0 0 77 DAMAGE-SUBSTANTIAL 42, 10689 TOTAL HOURS,
667 IN TYPE, INSTRUMENT
RATED.

NAME OF AIRPORT - LOGAN
OPERATOR - UNITED AIR LINES, INC.
TYPE OF ACCIDENT
UNDERSHOOT
GEAR COLLAPSED

PHASE OF OPERATION
LANDING: FINAL APPROACH
LANDING: LEVEL OFF/TOUCHDOWN

PROBABLE CAUSE
PILOT IN COMMAND - MISJUDGED DISTANCE, SPEED, AND ALTITUDE
PILOT IN COMMAND - IMPROPER LEVEL OFF
FACTOR
AIRPORTS/AIRWAYS/FACILITIES - AIRPORT CONDITIONS: WET RUNWAY
MISCELLANEOUS ACTS, CONDITIONS - OVERLOAD FAILURE
REMARKS- LANDED ABOUT 2300 FT SHORT OF DISPLACED RMY THRESHOLD. LFT GR BEAM ATTACH FITTING FAILED.

FILE DATE LOCATION AIRCRAFT DATA INJURIES FLIGHT PURPOSE PILOT DATA
F S M/N

FAIRPORTS/AIRWAYS/PACIFIC AIRLINES - OVERLOAD PLACED RNMV THRESHOLD, CA
 MISCELLANEOUS ACTS, CONDITIONS - SHORT OF DISPLACED RNMV THRESHOLD, CA
 REMARKS- LANDED ABOUT 2300 FT

BRIEFS OF ACCIDENTS

PILOT DATA

| FILE | DATE | LOCATION | AIRCRAFT DATA | INJURIES | | | FLIGHT PURPOSE | PILOT DATA |
|--------|---------|-----------------|---|----------|---|-----|---------------------|--|
| | | | | F | S | M/N | | |
| 1-0038 | 12/2/68 | PEDRO BAY, ALAS | FAIRCHILD F-27B N49058 DAMAGE-DESTROYED | CR- 3 | 0 | 0 | SCHED DOM PASSG SRV | AIRLINE TRANSPORT, AGE 37, 10557 TOTAL HOURS, 5357 IN TYPE, INSTRUMENT RATED. |

OPERATOR - WIEN CONSOLIDATED AIRLINES, INC.
 TYPE OF ACCIDENT - AIRFRAME FAILURE: IN FLIGHT
 FIRE AFTER IMPACT
 REMARKS- PRELIMINARY DATA. UNDER INVESTIGATION.

PHASE OF OPERATION
 IN FLIGHT: DESCENDING

| | | | | | | | | |
|--------|----------|------------------|--|-------|---|---|---------------------|--|
| 1-0039 | 12/27/68 | SIoux CITY, IOWA | DOUGLAS DC- 9 N974Z DAMAGE-DESTROYED | CR- 0 | 3 | 1 | SCHED DOM PASSG SRV | AIRLINE TRANSPORT, AGE 48, 19146 TOTAL HOURS, 63 IN TYPE, INSTRUMENT RATED. |
|--------|----------|------------------|--|-------|---|---|---------------------|--|

NAME OF AIRPORT - SIOUX CITY
 OPERATOR - OZARK AIR LINES, INC.
 TYPE OF ACCIDENT - STALL

PHASE OF OPERATION
 TAKEOFF: INITIAL CLIMB

PROBABLE CAUSE
 PILOT IN COMMAND - INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING
 MISCELLANEOUS ACTS, CONDITIONS - AIRFRAME ICE
 FACTOR

PILOT IN COMMAND - FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES, ETC.
 WEATHER - LOW CEILING
 WEATHER - ICING CONDITIONS - INCLUDES SLEET, FREEZING RAIN, ETC.
 WEATHER BRIEFING - UNKNOWN/NOT REPORTED
 WEATHER FORECAST - FORECAST SUBSTANTIALLY CORRECT

SKY CONDITION
 BROKEN
 VISIBILITY AT ACCIDENT SITE
 3 MILES OR LESS
 OBSTRUCTIONS TO VISION AT ACCIDENT SITE
 FOG
 TYPE OF FLIGHT PLAN
 IFR
 REMARKS- T/D MADE WITH KNOWN AIRFRAME ICING.

| | | | | | | | | |
|--------|----------|--------------|--|-------|---|---|---------------------|---|
| 1-0040 | 12/27/68 | CHICAGO, ILL | CONVAIR 580 N2045 DAMAGE-DESTROYED | CR- 3 | 0 | 1 | SCHED DOM PASSG SRV | AIRLINE TRANSPORT, AGE UNK/NR, 10973 TOTAL HOURS, 123 IN TYPE, INSTRUMENT RATED. |
|--------|----------|--------------|--|-------|---|---|---------------------|---|

NAME OF AIRPORT - CHICAGO-OHARE
 OPERATOR - NORTH CENTRAL AIRLINES, INC.
 TYPE OF ACCIDENT - STALL
 FIRE AFTER IMPACT
 REMARKS- PRELIM DATA. UNDER INVESTIGATION.

PHASE OF OPERATION
 LANDING: GO-AROUND

BRIEFS OF ACCIDENTS

PILOT DATA

FILE DATE LOCATION AIRCRAFT DATA INJURIES FLIGHT PURPOSE AIRLINE TRANSPORT, AGE
 I-0041 9/27/68 CHERRY POINT, NC DOUGLAS DC-7C CR- 0 1 2 MILITARY CTR CARGO DOM 51, 14549 TOTAL HOURS,
 TIME - 0241 N7466 PX- 0 0 0 DAMAGE-DESTROYED 2461 IN TYPE, INSTRUMENT
 RATED.

NAME OF AIRPORT - CHERRY PT MCAS
 OPERATOR - UNIVERSAL AIRLINES, INC.
 TYPE OF ACCIDENT
 COLLISION WITH GROUND/WATER: CONTROLLED

PHASE OF OPERATION
 LANDING: FINAL APPROACH

PROBABLE CAUSE
 PILOT IN COMMAND - IMPROPER IFR OPERATION
 FACTOR
 PILOT IN COMMAND - FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES, ETC.
 WEATHER - LOW CEILING
 WEATHER - FOG
 WEATHER BRIEFING - BRIEFED BY FLIGHT SERVICE PERSONNEL, BY PHONE
 WEATHER FORECAST - FORECAST SUBSTANTIALLY CORRECT

SKY CONDITION
 OBSCURATION
 VISIBILITY AT ACCIDENT SITE
 1/2 MILE OR LESS
 OBSTRUCTIONS TO VISION AT ACCIDENT SITE
 FOG
 TYPE OF WEATHER CONDITIONS
 IFR
 FIRE AFTER IMPACT
 REMARKS- PLT DID NOT INITIATE GO AROUND WHEN RNNY NOT IN SIGHT. F/O DID NOT WARN PLT AT WEA MINIMUMS.

CEILING AT ACCIDENT SITE
 100
 PRECIPITATION AT ACCIDENT SITE
 NONE
 TEMPERATURE-F
 69
 TYPE OF FLIGHT PLAN
 IFR

1-0042 7/25/68 MORGANTOWN, WV CONVAIR 580 CR- 0 0 5 SCHED DOM PASSG SRV AIRLINE TRANSPORT, AGE
 TIME - 2034 N5817 PX- 0 0 41 DAMAGE-SUBSTANTIAL 50, 22100 TOTAL HOURS,
 1850 IN TYPE, INSTRUMENT
 RATED.

NAME OF AIRPORT - MORGANTOWN
 OPERATOR - ALLEGHENY AIRLINES, INC.
 TYPE OF ACCIDENT
 GEAR COLLAPSED

PROBABLE CAUSE
 AIRFRAME - LANDING GEAR: WHEELS, TIRES, AXLES
 MISCELLANEOUS ACTS, CONDITIONS - MISSING
 MISCELLANEOUS ACTS, CONDITIONS - IMPROPERLY INSTALLED
 MISCELLANEOUS ACTS, CONDITIONS - IMPROPERLY INSTALLED
 PERSONNEL - MAINTENANCE, SERVICING, INSPECTION: INADEQUATE MAINTENANCE AND INSPECTION
 WHEEL HIT NO 2 PROP.

REMARKS- DEFECTIVE THREADS ON INNER AXLE OF RT MAIN GR. RETAINING NUT CAME OFF. WHEEL HIT NO 2 PROP.

PHASE OF OPERATION
 LANDING: ROLL

BRIEFS OF ACCIDENTS

| FILE | DATE | LOCATION | AIRCRAFT DATA | INJURIES F S M/N | FLIGHT PURPOSE | PILOT DATA |
|--------|-----------------------|------------|---|-------------------------|---------------------|--|
| 1-0043 | 8/5/68 TIME - 2100 | ELWOOD, PA | SUD AVIATN SE 210 N1005 DAMAGE-NONE | CR- 0 1 4 PX- 0 0 47 | SCHED DOM PASSG SRV | AIRLINE TRANSPORT, AGE 44. 11245 TOTAL HOURS. 2937 IN TYPE, INSTRUMENT RATED. |

OPERATOR - UNITED AIR LINES, INC.
TYPE OF ACCIDENT
TURBULENCE

PROBABLE CAUSE
WEATHER - TURBULENCE IN FLIGHT, CLEAR AIR
FACTOR
MISCELLANEOUS ACTS, CONDITIONS - SEAT BELT SIGN OFF
WEATHER BRIEFING - COMPANY DISPATCH
WEATHER FORECAST - FORECAST SUBSTANTIALLY CORRECT

SKY CONDITION
CLEAR
VISIBILITY AT ACCIDENT SITE
5 OR OVER
OBSTRUCTIONS TO VISION AT ACCIDENT SITE
NONE
TYPE OF FLIGHT PLAN
IFR

REMARKS- TWO SHARP JOLTS OF TURBULENCE ENCOUNTERED.

PHASE OF OPERATION
IN FLIGHT: DESCENDING

CEILING AT ACCIDENT SITE
UNLIMITED
PRECIPITATION AT ACCIDENT SITE
NONE
TYPE OF WEATHER CONDITIONS
VFR

| | | | | | | |
|--------|-----------------------|------------------|---|------------------------|------------------------|--|
| 1-0044 | 7/2/68 TIME - 1811 | PHILADELPHIA, PA | DOUGLAS DC-78F N762Z DAMAGE-SUBSTANTIAL | CR- 0 0 3 PX- 0 0 0 | MILITARY CTR CARGO DOM | AIRLINE TRANSPORT, AGE 51, 19616 TOTAL HOURS. 7095 IN TYPE, INSTRUMENT RATED. |
|--------|-----------------------|------------------|---|------------------------|------------------------|--|

NAME OF AIRPORT - PHILADELPHIA INTL
OPERATOR - UNIVERSAL AIRLINES, INC.
TYPE OF ACCIDENT
GROUND-WATER LOOP-SERVE
GEAR COLLAPSED

PROBABLE CAUSE
PILOT IN COMMAND - FAILED TO MAINTAIN DIRECTIONAL CONTROL
PILOT IN COMMAND - IMPROPER OPERATION OF POWERPLANT & POWERPLANT CONTROLS
MISCELLANEOUS ACTS, CONDITIONS - THRUST REVERSAL-ASYMMETRICAL
FACTOR
AIRPORTS/AIRWAYS/FACILITIES - AIRPORT CONDITIONS: WET RUNWAY
MISCELLANEOUS ACTS, CONDITIONS - HYDROPLANING ON WET RUNWAY
MISCELLANEOUS ACTS, CONDITIONS - OVERLOAD FAILURE
FIRE AFTER IMPACT
REMARKS- ASYMMETRICAL POWER APPLIED DURING REVERSING PHASE OF LGD. NO 1 PROP CIRCUIT BREAKER DEACTIVATED.

PHASE OF OPERATION
LANDING: ROLL
LANDING: ROLL

BRIEFS OF ACCIDENTS

| FILE | DATE | LOCATION | AIRCRAFT DATA | INJURIES | | | FLIGHT PURPOSE | PILOT DATA |
|--------|-------------------------|-----------------|---|----------|---|-----|-------------------------|--|
| | | | | F | S | M/N | | |
| 1-0045 | 12/26/68 TIME - 0615 | ANCHORAGE, ALAS | BOEING 707 N799PA DAMAGE--DESTROYED | CR- 3 | 0 | 0 | MIL CONTRACT CARGO INTL | AIRLINE TRANSPORT, AGE 47, 15207 TOTAL HOURS, 3970 IN TYPE, INSTRUMENT RATED. |

NAME OF AIRPORT - ELMENDORF AFB
 OPERATOR - PAN AMERICAN WORLD AIRWAYS, INC.
 TYPE OF ACCIDENT - STALL
 FIRE AFTER IMPACT
 REMARKS- PRELIMINARY DATA UNDER INVESTIGATION.

PHASE OF OPERATION
 TAKEOFF: INITIAL CLIMB

| | | | | | | | | |
|--------|------------------------|--------------------|--------------------------------------|-------|---|---|-----------------------------|--|
| 1-0046 | 9/14/68 TIME - 1920 | NO. ATLANTIC OCEAN | BOEING 707 N757PA DAMAGE--NONE | CR- 0 | 0 | 0 | 9 SCHED INTERNATL PASSG SRV | AIRLINE TRANSPORT, AGE 45, 10946 TOTAL HOURS, 3869 IN TYPE, INSTRUMENT RATED. |
|--------|------------------------|--------------------|--------------------------------------|-------|---|---|-----------------------------|--|

OPERATOR - PAN AMERICAN WORLD AIRWAYS, INC.
 TYPE OF ACCIDENT - TURBULENCE

PHASE OF OPERATION
 IN FLIGHT: NORMAL CRUISE

PROBABLE CAUSE
 WEATHER - TURBULENCE ASSOCIATED W/ CLOUDS, THUNDERSTORMS
 WEATHER BRIEFING - COMPANY DISPATCH
 WEATHER FORECAST - FORECAST SUBSTANTIALLY CORRECT

SKY CONDITION - SCATTERED
 VISIBILITY AT ACCIDENT SITE - 5 OR OVER
 OBSTRUCTIONS TO VISION AT ACCIDENT SITE - NONE
 TYPE OF FLIGHT PLAN - IFR
 REMARKS- INSUFFICIENT TIME FOR PAX RET TO SEATS WHEN SEAT BELT SIGN WAS TURNED ON.

CEILING AT ACCIDENT SITE - 39000
 PRECIPITATION AT ACCIDENT SITE - NONE
 TYPE OF WEATHER CONDITIONS - VFR

| | | | | | | | | |
|--------|-------------------------|-------------------|--|-------|---|---|-----------------------|--|
| 1-0047 | 11/19/68 TIME - 0123 | MARTINSBURG, W VA | BOEING 707 N7599 DAMAGE--SUBSTANTIAL | CR- 0 | 0 | 0 | 7 SCHED DOM PASSG SRV | AIRLINE TRANSPORT, AGE 52, 20500 TOTAL HOURS, 3900 IN TYPE, INSTRUMENT RATED. |
|--------|-------------------------|-------------------|--|-------|---|---|-----------------------|--|

OPERATOR - AMERICAN AIRLINES, INC.
 TYPE OF ACCIDENT - FIRE OR EXPLOSION
 ENGINE FAILURE OR MALFUNCTION

PHASE OF OPERATION
 IN FLIGHT: CLIMB TO CRUISE
 IN FLIGHT: CLIMB TO CRUISE

PROBABLE CAUSE
 POWERPLANT - COMPRESSOR ASSEMBLY: BEARING, ROTOR SHAFT
 MISCELLANEOUS ACTS, CONDITIONS - LACK OF LUBRICATION--SPECIFIC PART, NOT SYSTEM FACTOR
 MISCELLANEOUS ACTS, CONDITIONS - FIRE IN ENGINE
 EMERGENCY CIRCUMSTANCES - PRECAUTIONARY LANDING ON AIRPORT
 SUSPECTED OR KNOWN AIRCRAFT DAMAGE
 REMARKS- NO.1 ENG OIL SUPPLY LINE FAILED. ENG DISINTEGRATED, DAMAGED FUEL TANK, HYD SUPPLY LINE, FLAP, FUSELAGE

BRIEFS OF ACCIDENTS

| FILE | DATE | LOCATION | AIRCRAFT DATA | INJURIES F S M/N | FLIGHT PURPOSE | PILOT DATA |
|--------|------------------------|------------|--|-------------------------|---------------------|---|
| I-0048 | 3/23/68 TIME - 1427 | JAMAICA,NY | DOUGLAS DC-8 N8780R DAMAGE-SUBSTANTIAL | CR- 0 0 9 PX- 0 0 60 | SCHED DOM PASSG SRV | AIRLINE TRANSPORT, AGE 46, 21561 TOTAL HOURS, 365 IN TYPE, INSTRUMENT RATED. |

NAME OF AIRPORT - JFK INTL
OPERATOR - EASTERN AIR LINES, INC.
TYPE OF ACCIDENT
WHEELS-UP

PROBABLE CAUSE

AIRFRAME - LANDING GEAR: NORMAL RETRACTION/EXTENSION ASSEMBLY
AIRFRAME - LANDING GEAR: EMERGENCY/EXTENSION ASSEMBLY
MISCELLANEOUS ACTS, CONDITIONS - JAMMED
MISCELLANEOUS ACTS, CONDITIONS - CORRODED/CORROSION
PERSONNEL - MAINTENANCE, SERVICING, INSPECTION: INADEQUATE MAINTENANCE AND INSPECTION
EMERGENCY CIRCUMSTANCES - PRECAUTIONARY LANDING ON AIRPORT
SUSPECTED MECHANICAL DISCREPANCY
UNUSUAL NOISE

PHASE OF OPERATION
LANDING: LEVEL OFF/TOUCHDOWN

REMARKS- THREADED JOINT OF RT GR ACTUATING CYL ROD END FAILED, PREVENTED GR FROM LOCKING DOWN.

| | | | | | | |
|--------|------------------------|--------------------|--|-------------------------|---------------------|--|
| I-0049 | 7/20/68 TIME - 1106 | NR. BILLINGS, MONT | LOCKHEED 188C N130US DAMAGE-NONE | CR- 0 2 3 PX- 0 1 15 | SCHED DOM PASSG SRV | AIRLINE TRANSPORT, AGE 38, 5000 TOTAL HOURS, 700 IN TYPE, INSTRUMENT RATED. |
|--------|------------------------|--------------------|--|-------------------------|---------------------|--|

OPERATOR - NORTHWEST AIRLINES, INC.
TYPE OF ACCIDENT
TURBULENCE

PROBABLE CAUSE

WEATHER - TURBULENCE IN FLIGHT, CLEAR AIR
FACTOR
PERSONNEL - WEATHER PERSONNEL: INCORRECT WEATHER FORECAST
WEATHER BRIEFING - COMPANY DISPATCH
WEATHER FORECAST - WEATHER CONSIDERABLY WORSE THAN FORECAST

PHASE OF OPERATION
IN FLIGHT: NORMAL CRUISE

SKY CONDITION

CLEAR
VISIBILITY AT ACCIDENT SITE
5 OR OVER
OBSTRUCTIONS TO VISION AT ACCIDENT SITE
NONE
WIND DIRECTION-DEGREES
290
TYPE OF WEATHER CONDITIONS
VFR

CEILING AT ACCIDENT SITE
UNLIMITED
PRECIPITATION AT ACCIDENT SITE
NONE
TEMPERATURE-F
69
WIND VELOCITY-KNOTS
24
TYPE OF FLIGHT PLAN
NONE

REMARKS- MTN WAVE EFFECT NOT FCST. SEAT BELT SIGN ON.

BRIEFS OF ACCIDENTS

| FILE | DATE | LOCATION | AIRCRAFT DATA | INJURIES | | | FLIGHT PURPOSE | PILOT DATA |
|--------|-----------------------|--------------|-------------------------------------|-------------------------|-------|-------|---------------------|---|
| | | | | F | S | M/N | | |
| 1-0050 | 4/2/68 TIME - 1425 | YAKIMA, WASH | BOEING 727 N7407U DAMAGE-NONE | CR- 0 0 6 PX- 0 1 57 | 0 0 0 | 0 0 0 | SCHED DOM PASSG SRV | AIRLINE TRANSPORT, AGE 43, 12692 TOTAL HOURS, 429 IN TYPE, INSTRUMENT RATED. |

OPERATOR - UNITED AIR LINES, INC.
TYPE OF ACCIDENT
TURBULENCE

PROBABLE CAUSE
WEATHER - TURBULENCE IN FLIGHT, CLEAR AIR
WEATHER BRIEFING - COMPANY DISPATCH
WEATHER FORECAST - FORECAST SUBSTANTIALLY CORRECT

SKY CONDITION
OVERCAST
VISIBILITY AT ACCIDENT SITE
5 OR OVER
OBSTRUCTIONS TO VISION AT ACCIDENT SITE
NONE
TYPE OF FLIGHT PLAN
IFR

PHASE OF OPERATION
IN FLIGHT: NORMAL CRUISE

CEILING AT ACCIDENT SITE
12000
PRECIPITATION AT ACCIDENT SITE
NONE
TYPE OF WEATHER CONDITIONS
VFR

| | | | | | | | | |
|--------|-------------------------|-------------------|---------------------------------------|--------------------------------------|-------|-------|---------------------|--|
| 1-0051 | 11/19/68 TIME - 1940 | MINNEAPOLIS, MINN | LOCKHEED 188 N1284S DAMAGE-NONE | CR- 0 0 7 PX- 0 0 59 OT- 1 0 0 | 0 0 0 | 0 0 0 | SCHED DOM PASSG SRV | AIRLINE TRANSPORT, AGE 33, 3875 TOTAL HOURS, 489 IN TYPE, INSTRUMENT RATED. |
|--------|-------------------------|-------------------|---------------------------------------|--------------------------------------|-------|-------|---------------------|--|

NAME OF AIRPORT - WOLD-CHAMBERLAIN
OPERATOR - NORTHWEST AIRLINES, INC.
TYPE OF ACCIDENT
PROPELLER/ROTOR ACCIDENT TO PERSON

PROBABLE CAUSE
PERSONNEL - MISCELLANEDUS--PERSONNEL: GROUND CREWMAN
FACTOR
PERSONNEL - OPERATIONAL SUPERVISORY PERSONNEL: INADEQUATE SUPERVISION/TRAINING OF RAMP CREWS
REMARKS- CARGO HANDLER WALKED INTO NR 4 PROP. POSSIBLE GLARE FROM RAMP LTS. EMPLOYEE WAS A RECENT HIRE.

PHASE OF OPERATION
STATIC: IDLING ENGINES

BRIEFS OF ACCIDENTS

| FILE | DATE | LOCATION | AIRCRAFT DATA | INJURIES | | | FLIGHT PURPOSE | PILOT DATA |
|--------|---------|------------------|---|----------|-----|--------|--|------------|
| | | | | F | S | M/N | | |
| 1-0052 | 1/11/68 | INTERNATL WATERS | DOUGLAS DC-6A N90782 DAMAGE-MINOR | CR- 0 | I 6 | NS/CTR | REVENUE CARGO INTL AIRLINE TRANSPORT, AGE 39, 10800 TOTAL HOURS, 97 IN TYPE, INSTRUMENT RATED. | |

OPERATOR - SOUTHERN AIR TRANSPORT, INC.
 TYPE OF ACCIDENT
 TURBULENCE

PROBABLE CAUSE
 WEATHER - TURBULENCE IN FLIGHT, CLEAR AIR
 WEATHER BRIEFING - COMPANY DISPATCH
 WEATHER FORECAST - UNKNOWN/NOT REPORTED

SKY CONDITION
 OVERCAST
 VISIBILITY AT ACCIDENT SITE
 5 OR OVER
 OBSTRUCTIONS TO VISION AT ACCIDENT SITE
 NONE
 TYPE OF FLIGHT PLAN
 IFR

REMARKS- ACCDT LOCATION, 133 MI NW OF RANGOON, BURMA. OFF DUTY CREW MEMBER THROWN FROM BUNK.

CEILING AT ACCIDENT SITE
 16000
 PRECIPITATION AT ACCIDENT SITE
 NONE
 TYPE OF WEATHER CONDITIONS
 VFR

PHASE OF OPERATION
 IN FLIGHT: NORMAL CRUISE

| | | | | | | | |
|--------|---------|-------------|--------------------------------------|-------|------|---------------------------|---|
| 1-0053 | 1/28/68 | N. ATLANTIC | DOUGLAS DC8 N818PA DAMAGE-NONE | CR- 0 | 0 10 | SCHED INTERNATL PASSG SRV | AIRLINE TRANSPORT, AGE UNK/NR, 20384 TOTAL HOURS, 5715 IN TYPE, INSTRUMENT RATED. |
|--------|---------|-------------|--------------------------------------|-------|------|---------------------------|---|

OPERATOR - PAN AMERICAN WORLD AIRWAYS, INC.
 TYPE OF ACCIDENT
 TURBULENCE

PROBABLE CAUSE
 WEATHER - TURBULENCE IN FLIGHT, CLEAR AIR
 PERSONNEL - MISCELLANEOUS-PERSONNEL: PASSENGER
 WEATHER BRIEFING - UNKNOWN/NOT REPORTED
 WEATHER FORECAST - UNKNOWN/NOT REPORTED

SKY CONDITION
 UNKNOWN/NOT REPORTED
 VISIBILITY AT ACCIDENT SITE
 UNKNOWN/NOT REPORTED
 OBSTRUCTIONS TO VISION AT ACCIDENT SITE
 UNKNOWN/NOT REPORTED
 TYPE OF FLIGHT PLAN
 IFR

REMARKS- PX SAID HAD SEAT BELT FASTENED LOOSELY, NO INSTRUCTIONS. CREW SAID SEAT BELT SIGN ON ANNOUNCEMENT MADE.

PHASE OF OPERATION
 IN FLIGHT: NORMAL CRUISE

CEILING AT ACCIDENT SITE
 UNKNOWN/NOT REPORTED
 PRECIPITATION AT ACCIDENT SITE
 UNKNOWN/NOT REPORTED
 TYPE OF WEATHER CONDITIONS
 UNKNOWN/NOT REPORTED

BRIEFS OF ACCIDENTS

| FILE | DATE | LOCATION | AIRCRAFT DATA | INJURIES | | | FLIGHT PURPOSE | PILOT DATA |
|--------|------------------------|---------------|---|-------------------------|---|-----|---------------------|---|
| | | | | F | S | M/N | | |
| 1-0054 | 6/30/68 TIME - 1156 | MEMPHIS, TENN | CONVAIR 340 N4813C DAMAGE-SUBSTANTIAL | CR- 0 0 3 PX- 0 0 23 | 0 | 0 | SCHED DOM PASSG SRV | AIRLINE TRANSPORT, AGE 36, 6497 TOTAL HOURS, 1130 IN TYPE, INSTRUMENT RATED. |

NAME OF AIRPORT - MEMPHIS METRO
OPERATOR - DELTA AIR LINES, INC.
TYPE OF ACCIDENT
WHEELS-UP

PROBABLE CAUSE
AIRFRAME - LANDING GEAR: NORMAL RETRACTION/EXTENSION ASSEMBLY
AIRFRAME - LANDING GEAR: EMERGENCY/EXTENSION ASSEMBLY
MISCELLANEOUS ACTS, CONDITIONS - JAMMED
MISCELLANEOUS ACTS, CONDITIONS - IMPROPER ALIGNMENT/ADJUSTMENT
PERSONNEL - MAINTENANCE, SERVICING, INSPECTION: INADEQUATE MAINTENANCE AND INSPECTION
EMERGENCY CIRCUMSTANCES - PRECAUTIONARY LANDING ON AIRPORT
SUSPECTED MECHANICAL DISCREPANCY

REMARKS- R LNDG GR DOOR YOKE MISALIGNED, CAUSED BENDING OF GR DOOR ACTUATOR ARM. JAMMED R GR DOOR CLOSED.

PHASE OF OPERATION
LANDING: LEVEL OFF/TOUCHDOWN

| | | | | | | | | |
|--------|-----------------------|--------------------|---|------------------------|---|---|-------|--|
| 1-0055 | 8/5/68 TIME - 2240 | TRAVIS AFBASE, CAL | BOEING 707 N322F DAMAGE-SUBSTANTIAL | CR- 0 0 3 PX- 0 0 0 | 0 | 0 | FERRY | AIRLINE TRANSPORT, AGE 51, 23000 TOTAL HOURS, 2400 IN TYPE, INSTRUMENT RATED. |
|--------|-----------------------|--------------------|---|------------------------|---|---|-------|--|

NAME OF AIRPORT - TRAVIS AFBASE
OPERATOR - FLYING TIGER LINE, INC.
TYPE OF ACCIDENT
FIRE OR EXPLOSION: ON GROUND

PROBABLE CAUSE
POWERPLANT - FUEL SYSTEM: LINES AND FITTINGS
MISCELLANEOUS ACTS, CONDITIONS - IMPROPERLY SECURED
PERSONNEL - MAINTENANCE, SERVICING, INSPECTION: IMPROPER MAINTENANCE (MAINTENANCE PERSONNEL)
FACTOR
MISCELLANEOUS ACTS, CONDITIONS - FIRE IN ENGINE
REMARKS- FUEL LINE FITTING SEPARATED FROM NR 4 ENG FUEL PUMP HOUSING. ENG CAUGHT FIRE DURING REVERSE THRUST

PHASE OF OPERATION
LANDING: ROLL

| | | | | | | | | |
|--------|-----------------------|-----------------|---|---------------------------------------|---|---|---------------------|--|
| 1-0056 | 9/6/68 TIME - 2008 | CLEVELAND, OHIO | LOCKHEED L-188 N6121 DAMAGE-SUBSTANTIAL | CR- 0 0 3 PX- 0 0 36 OT- 0 0 55 | 0 | 0 | SCHED DOM PASSG SRV | AIRLINE TRANSPORT, AGE 39, 9610 TOTAL HOURS, 1250 IN TYPE, UNK/NR INSTRUMENT RATED. |
|--------|-----------------------|-----------------|---|---------------------------------------|---|---|---------------------|--|

NAME OF AIRPORT - CLEVELAND-HOPKINS
OPERATOR - AMERICAN AIRLINES, INC.
TYPE OF ACCIDENT
COLLISION WITH AIRCRAFT: BOTH ON GROUND

PROBABLE CAUSE
PILOT IN COMMAND - MISJUDGED CLEARANCE
REMARKS- LFT WING TIP HIT RT OUTBOARD PORTION OF WING OF N7206U.

PHASE OF OPERATION
TAXI: FROM LANDING

BRIEFS OF ACCIDENTS

| FILE | DATE | LOCATION | AIRCRAFT DATA | INJURIES F S M/N | FLIGHT PURPOSE | PILOT DATA |
|---|------------------------|-----------------|--|---------------------------------------|-------------------------|---|
| 1-0056 | 9/6/68 TIME - 2008 | CLEVELAND, OHIO | BOEING 720 N7206U DAMAGE-SUBSTANTIAL | CR- 0 0 8 PX- 0 0 47 OT- 0 0 39 | SCHED DOM PASSG SRV | AIRLINE TRANSPORT, AGE 46, 14600 TOTAL HOURS, 302 IN TYPE, INSTRUMENT RATED. |
| <p>NAME OF AIRPORT - CLEVELAND-HOPKINS OPERATOR - UNITED AIR LINES, INC. TYPE OF ACCIDENT COLLISION WITH AIRCRAFT: BOTH ON GROUND PROBABLE CAUSE PERSONNEL - MISCELLANEOUS-PERSONNEL: PILOT OF OTHER AIRCRAFT</p> | | | | | | |
| 1-0057 | 6/3/68 TIME - 0910 | FLUSHING, NY | BOEING 727 N831TM DAMAGE-SUBSTANTIAL | CR- 0 1 6 PX- 0 0 95 | SCHED DOM PASSG SRV | AIRLINE TRANSPORT, AGE 35, 7637 TOTAL HOURS, 253 IN TYPE, INSTRUMENT RATED. |
| <p>NAME OF AIRPORT - LA GUARDIA OPERATOR - TRANS WORLD AIRLINES, INC. TYPE OF ACCIDENT UNDERSHOOT COLLIDED WITH: RUNWAY OR APPROACH LIGHTS PROBABLE CAUSE PILOT IN COMMAND - MISJUDGED DISTANCE AND ALTITUDE FACTOR PILOT IN COMMAND - DELAYED IN INITIATING GO-AROUND EMERGENCY CIRCUMSTANCES - PRECAUTIONARY LANDING ON AIRPORT SUSPECTED OR KNOWN AIRCRAFT DAMAGE REMARKS- CAPT FAILED TO ARREST DESCENT, STRUCK APCH LIGHT PIER, LA GUARDIA. FURTHER DAMAGE ON LDG JFK ARPT.</p> | | | | | | |
| 1-0058 | 6/24/68 TIME - 1555 | SAIGON, VIETNAM | CANADAIR CL-44 N6035A DAMAGE-SUBSTANTIAL | CR- 0 0 4 PX- 0 0 3 | MIL CONTRACT CARGO INTL | AIRLINE TRANSPORT, AGE 48, UNK/NR TOTAL HOURS, UNK/NR IN TYPE, INSTRU- MENT RATED. |
| <p>NAME OF AIRPORT - TAN SON NHUT OPERATOR - AIRLIFT INTERNATIONAL, INC. TYPE OF ACCIDENT HARD LANDING REMARKS- INVESTIGATION UNDER THE JURISDICTION OF THE GOVT OF VIETNAM.</p> | | | | | | |

BRIEFS OF ACCIDENTS

| FILE | DATE | LOCATION | AIRCRAFT DATA | INJURIES | | | FLIGHT PURPOSE | PILOT DATA |
|--------|---------|----------------|-------------------------------------|----------|---|-----|---------------------|--|
| | | | | F | S | M/N | | |
| 1-0059 | 7/23/68 | LAFAYETTE, IND | BOEING 707 N355US DAMAGE-NONE | CR- 0 | 1 | 6 | SCHED DOM PASSG SRV | AIRLINE TRANSPORT, AGE 46, 18347 TOTAL HOURS, 1667 IN TYPE, INSTRUMENT RATED. |

OPERATOR - NORTHWEST AIRLINES, INC.
TYPE OF ACCIDENT
TURBULENCE

PHASE OF OPERATION
IN FLIGHT: NORMAL CRUISE

PROBABLE CAUSE
PERSONNEL - OTHER FLIGHT PERSONNEL
MISCELLANEOUS ACTS, CONDITIONS - SEAT BELT NOT FASTENED
WEATHER - TURBULENCE ASSOCIATED W/ CLOUDS, THUNDERSTORMS
WEATHER BRIEFING - COMPANY DISPATCH
WEATHER FORECAST - FORECAST SUBSTANTIALLY CORRECT

SKY CONDITION
UNKNOWN/NOT REPORTED
VISIBILITY AT ACCIDENT SITE
UNKNOWN/NOT REPORTED
OBSTRUCTIONS TO VISION AT ACCIDENT SITE
NONE
TYPE OF FLIGHT PLAN
IFR
REMARKS- CABIN ATTENDANT WAS NOT SEATED. SEAT BELT SIGN ON.

CEILING AT ACCIDENT SITE
UNKNOWN/NOT REPORTED
PRECIPITATION AT ACCIDENT SITE
THUNDERSTORM
TYPE OF WEATHER CONDITIONS
IFR

| | | | | | | | | |
|--------|--------|------------------|---|-------|---|---|------------------------|---|
| 1-0060 | 6/8/68 | LITTLE ROCK, ARK | ARMSTRONG AM-650 N602Z DAMAGE-SUBSTANTIAL | CR- 0 | 0 | 3 | MILITARY CTR CARGO DOM | AIRLINE TRANSPORT, AGE 28, 8500 TOTAL HOURS, 2931 IN TYPE, INSTRUMENT RATED. |
|--------|--------|------------------|---|-------|---|---|------------------------|---|

NAME OF AIRPORT - LITTLE ROCK AFB
OPERATOR - UNIVERSAL AIRLINES, INC.
TYPE OF ACCIDENT
WHEELS-UP

PHASE OF OPERATION
LANDING: LEVEL OFF/TOUCHDOWN

PROBABLE CAUSE
AIRFRAME - LANDING GEAR: NORMAL RETRACTION/EXTENSION ASSEMBLY
AIRFRAME - LANDING GEAR: EMERGENCY/EXTENSION ASSEMBLY
MISCELLANEOUS ACTS, CONDITIONS - HYDRAULIC FAILURE
MISCELLANEOUS ACTS, CONDITIONS - OVERLOAD FAILURE
MISCELLANEOUS ACTS, CONDITIONS - LEAK/LEAKAGE
FACTOR
MISCELLANEOUS ACTS, CONDITIONS - LANDED ON FOAMED RUNWAY
EMERGENCY CIRCUMSTANCES - PRECAUTIONARY LANDING ON AIRPORT
SUSPECTED MECHANICAL DISCREPANCY
REMARKS- HYD LINE SEPARATED DUE TO OVERLOAD RESULTING FROM FAILURE OF DRAG STAY MOUNTING BOLTS IN R MAIN GR

PAGE 28

BRIEFS OF ACCIDENTS

| FILE | DATE | LOCATION | AIRCRAFT DATA | INJURIES | | | FLIGHT PURPOSE | PILOT DATA |
|--------|---------|------------|-------------------------|----------|---|-----|---------------------|------------|
| | | | | F | S | M/N | | |
| 1-0061 | 9/28/68 | MIAMI, FLA | DOUGLAS DC-7C N356AI | CR- 0 | 0 | 4 | SCHED DOM PASSG SRV | |

BRIEFS OF ACCIDENTS

| FILE | DATE | LOCATION | AIRCRAFT DATA | | INJURIES F S M/N | FLIGHT PURPOSE | PILOT DATA | |
|---|-------------------------|--------------------|--|---------------------------|---------------------|---------------------------|--|--|
| | | | | | | | | |
| 1-0061 | 9/28/68 TIME - 1804 | MIAMI, FLA | DOUGLAS DC-7C N356AL DAMAGE--SUBSTANTIAL | CR- 0 0 4 PX- 0 0 0 | | SCHED DOM CARGO SRV | 44, 15674 TOTAL HOURS, 1604 IN TYPE, INSTRUMENT RATED. | |
| <p>NAME OF AIRPORT - MIAMI INTL OPERATOR - AIRLIFT INTERNATIONAL, INC. TYPE OF ACCIDENT GEAR COLLAPSED</p> <p>PROBABLE CAUSE PILOT IN COMMAND - INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING SYSTEMS - AUTO PILOT: OTHER FACTOR</p> <p>MISCELLANEOUS ACTS-CONDITIONS - OVERLOAD FAILURE AIRPORTS/AIRWAYS/FACILITIES - AIRPORT CONDITIONS: WET RUNWAY REMARKS- UNABLE TO ROTATE.CONTROLS LOCKED BY ENGAGED AUTO-PILOT.OVERRAN RNMV.NOSE GR BROKE DUE TO SIDE LOAD</p> <p>PHASE OF OPERATION TAKEOFF: ABORTED</p> | | | | | | | | |
| 1-0062 | 6/13/68 TIME - 0058 | CALCUTTA, INDIA | BOEING 707 N798PA DAMAGE--DESTROYED | CR- 1 0 8 PX- 5 0 48 | | SCHED INTERNATL PASSG SRV | CERTIFICATE UNKNOWN, AGE 45, 5392 TOTAL HOURS, 2475 IN TYPE, UNK/NR INSTRUMENT RATED. | |
| <p>NAME OF AIRPORT - DUM DUM OPERATOR - PAN AMERICAN WORLD AIRWAYS, INC. TYPE OF ACCIDENT UNDERSHOOT COLLIDED WITH: BUILDING(S) FIRE AFTER IMPACT REMARKS- PRELIM DATA. INVESTIGATION UNDER JURISDICTION OF GOVT OF INDIA.</p> <p>PHASE OF OPERATION LANDING: FINAL APPROACH LANDING: ROLL</p> | | | | | | | | |
| 1-0063 | 12/12/68 TIME - 2202 | CARACAS, VENEZUELA | BOEING 707 N494PA DAMAGE--DESTROYED | CR- 9 0 0 PX- 42 0 0 | | SCHED INTERNATL PASSG SRV | CERTIFICATE UNKNOWN, AGE UNK/NR, UNK/NR TOTAL HOURS, UNK/NR IN TYPE, UNK/NR INSTRUMENT RATED. | |
| <p>OPERATOR - PAN AMERICAN WORLD AIRWAYS, INC. TYPE OF ACCIDENT UNDERSHOOT COLLISION WITH GROUND/WATER: CONTROLLED REMARKS- INVESTIGATION UNDER JURISDICTION OF GOVT OF VENEZUELA</p> <p>PHASE OF OPERATION LANDING: FINAL APPROACH LANDING: FINAL APPROACH</p> | | | | | | | | |
| 1-0064 | 4/23/68 TIME - 0815 | QUITO, ECUADOR | DOUGLAS DC-8 N1804 DAMAGE--SUBSTANTIAL | CR- 0 0 13 PX- 0 0 151 | | SCHED INTERNATL PASSG SRV | AIRLINE TRANSPORT, AGE 56, 22407 TOTAL HOURS, 4530 IN TYPE, INSTRUMENT RATED. | |
| <p>NAME OF AIRPORT - QUITO OPERATOR - BRANIFF AIRWAYS, INC. TYPE OF ACCIDENT UNDERSHOOT COLLIDED WITH: DITCHES REMARKS- INVESTIGATION UNDER THE JURISDICTION OF THE GOVT OF ECUADOR.</p> <p>PHASE OF OPERATION LANDING: LEVEL OFF/TOUCHDOWN LANDING: ROLL</p> | | | | | | | | |

BRIEFS OF ACCIDENTS

| FILE | DATE | LOCATION | AIRCRAFT DATA | INJURIES | | FLIGHT PURPOSE | PILOT DATA |
|--|---------|--------------------------------------|--|-------------------------|-------|---------------------------|---|
| | | | | F | S M/N | | |
| I-0065 | 1/25/68 | KANDAHAR, AFG TIME - UNK/NR | BOEING 707 N427PA DAMAGE-NONE | CR- 0 1 8 PX- 0 1 67 | | SCHED INTERNATL PASSG SRV | AIRLINE TRANSPORT, AGE 58, 26183 TOTAL HOURS, 5117 IN TYPE, INSTRUMENT RATED. |
| OPERATOR - PAN AMERICAN WORLD AIRWAYS, INC. TYPE OF ACCIDENT TURBULENCE REMARKS- PRELIMINARY INFORMATION. UNDER INVESTIGATION | | | | | | | |
| I-0066 | 8/6/68 | NR. MINNEAPOLIS, MINN TIME - 0945 | DOUGLAS DC-8 N8010U DAMAGE-SUBSTANTIAL | CR- 0 0 9 PX- 0 2105 | | SCHED DOM PASSG SRV | AIRLINE TRANSPORT, AGE 47, 11000 TOTAL HOURS, 3327 IN TYPE, INSTRUMENT RATED. |
| OPERATOR - UNITED AIR LINES, INC. TYPE OF ACCIDENT TURBULENCE REMARKS- TOTAL ABOARD PRESUMED. UNDER INVESTIGATION. | | | | | | | |
| I-0067 | 10/3/68 | NR. FILLMORE, CALIF TIME - 1350 | BOEING 727 N7622U DAMAGE-NONE | CR- 0 1 3 PX- 0 0 40 | | SCHED DOM PASSG SRV | AIRLINE TRANSPORT, AGE 43, 12740 TOTAL HOURS, 460 IN TYPE, INSTRUMENT RATED. |
| OPERATOR - UNITED AIR LINES, INC. TYPE OF ACCIDENT TURBULENCE REMARKS- TOTAL ABOARD PRESUMED. UNDER INVESTIGATION | | | | | | | |
| I-0068 | 1/25/68 | ATLANTIC OCEAN TIME - 0307 | DOUGLAS DC-8 N4904C DAMAGE-NONE | CR- 0 2 6 PX- 0 1182 | | SCHED INTERNATL PASSG SRV | AIRLINE TRANSPORT, AGE 57, 20000 TOTAL HOURS, 500 IN TYPE, INSTRUMENT RATED. |
| OPERATOR - EASTERN AIR LINES, INC. TYPE OF ACCIDENT TURBULENCE REMARKS- PRELIMINARY INFORMATION. UNDER INVESTIGATION | | | | | | | |

BRIEFS OF ACCIDENTS

| FILE | DATE | LOCATION | AIRCRAFT DATA | INJURIES | | | FLIGHT PURPOSE | PILOT DATA |
|--------|------------------------|---------------|---------------------------------------|----------|---|-----|---------------------|---|
| | | | | F | S | M/N | | |
| 1-0069 | 6/12/68 TIME - 1315 | NR-NORFOLK,VA | DOUGLAS DC-8 N8775 DAMAGE-MINOR | CR-0 | 0 | 10 | SCHED DOM PASSG SRV | AIRLINE TRANSPORT, AGE 47, 19377 TOTAL HOURS, 620 IN TYPE, INSTRUMENT RATED. |

OPERATOR - EASTERN AIR LINES, INC.
 DEPARTURE POINT - INTENDED DESTINATION
 JFK INTL, NY - MIAMI, FLA
 TYPE OF ACCIDENT - TURBULENCE

PROBABLE CAUSE
 WEATHER - TURBULENCE, ASSOCIATED W/ CLOUDS, THUNDERSTORMS
 FACTOR
 PILOT IN COMMAND - FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES, ETC.
 MISCELLANEOUS ACTS, CONDITIONS - SEAT BELT SIGN ON
 WEATHER BRIEFING - COMPANY DISPATCH
 WEATHER FORECAST - FORECAST SUBSTANTIALLY CORRECT

PHASE OF OPERATION
 IN FLIGHT: NORMAL CRUISE

SKY CONDITION
 OVERCAST
 VISIBILITY AT ACCIDENT SITE
 ZERO
 OBSTRUCTIONS TO VISION AT ACCIDENT SITE
 NONE
 TYPE OF FLIGHT PLAN
 IFR

REMARKS- KNOWN TSTM ACTIVITY IN AREA. PLT DID NOT GIVE VERBAL WARNING TO PX AND CREW.

CEILING AT ACCIDENT SITE
 UNKNOWN/NOT REPORTED
 PRECIPITATION AT ACCIDENT SITE
 THUNDERSTORM
 TYPE OF WEATHER CONDITIONS
 VFR

| | | | | | | | | |
|--------|-----------------------|---------------|-------------------------------------|------|---|---|---------------------|--|
| 1-0070 | 7/5/68 TIME - 1317 | HECTOR, CALIF | BOEING 727 N828PC DAMAGE-NONE | CR-0 | 1 | 5 | SCHED DOM PASSG SRV | ATR, FLIGHT INSTR., AGE 49, 23000 TOTAL HOURS, 871 IN TYPE, INSTRUMENT RATED. |
|--------|-----------------------|---------------|-------------------------------------|------|---|---|---------------------|--|

PHASE OF OPERATION
 IN FLIGHT: NORMAL CRUISE

| | | | | | | | | |
|--------|-------------------------|-----------------|-------------------------------------|------|---|---|---------------------------|---|
| 1-0071 | 10/28/68 TIME - 1000 | N PACIFIC OCEAN | BOEING 707 N424PA DAMAGE-NONE | CR-0 | 1 | 9 | SCHED INTERNATL PASSG SRV | ATR, FLIGHT INSTR., AGE 57, 19300 TOTAL HOURS, 5238 IN TYPE, INSTRUMENT RATED. |
|--------|-------------------------|-----------------|-------------------------------------|------|---|---|---------------------------|---|

PHASE OF OPERATION
 IN FLIGHT: NORMAL CRUISE

AN ANALYSIS OF AIRCRAFT ACCIDENT DATA

U. S. AIR CARRIER OPERATIONS

1968

NATIONAL TRANSPORTATION SAFETY BOARD
Department of Transportation
Washington, D. C. 20591
February 10, 1970

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

AN ANALYSIS OF AIRCRAFT ACCIDENT DATA
U. S. AIR CARRIER OPERATIONS
1968

This report provides a compilation and a statistical analysis of aircraft accidents in U. S. Air Carrier operations that occurred during calendar year 1968. This compilation is in the form of several tables of statistical data which are attached as appendices. The analysis is contained in the following pages of narrative, with accompanying illustrative tables.

The analytical portion of this report presents data on accidents, fatalities, rates, and growth changes as percentage changes of the 1968 data compared with a base figure. The base figure was established by averaging the data for the 5-year period 1963-67. Such a presentation helps to eliminate annual variations inherent in accident report data and allows more meaningful comparisons than would the customary year-by-year comparisons. This base figure can also be used as a standard and can be compared with other periods. For instance, the 1962-66 base period can be compared with the 1963-67 base period in measuring growth; fatalities; accident rate; aircraft miles, hours, and departures; passengers carried; passenger-miles; and other important variables. Furthermore, if this method of analysis is used for several consecutive years, the Board will have a sound basis for analyzing and projecting trends dealing with both growth and accident indices.

It is important to note, however, that this report, which is comparison of 1 year's data with the base period data, does not provide the basis for trends and/or projections, any more than would a comparison of data from 2 individual years. This report and similar reports for 3 or 4 consecutive years will provide such a basis, however.

Highlights of the Annual Review of U. S. Air Carrier Accidents

Calendar Year 1968

I. The 1968 Review offers a new format for the accident briefs of certain types of accidents. Among the items of information included in the 1968 briefs that did not previously appear are: (1) The name of the airport (if the accident site is either on or within 5 miles of an airport); (2) Special weather data (when weather is cited as a probable cause or related factor in the accident); and (3) special midair collision data (appears only when "collision with aircraft: both in flight" is the type of accident - does not appear for ground collision or when one aircraft involved in the collision is airborne).

When an accident occurs either on or within 5 miles of an airport, the name of the airport is shown just above the "TYPE OF ACCIDENT" information.

The addition of the special weather data involves several additional entries which now appear at the bottom of briefs of accidents in which weather was a probable cause or a factor. These new data are: SKY CONDITION; VISIBILITY AT ACCIDENT SITE; OBSTRUCTIONS TO VISION AT ACCIDENT SITE; TYPE OF FLIGHT PLAN; CEILING AT ACCIDENT SITE; PRECIPITATION AT ACCIDENT SITE; and TYPE OF WEATHER CONDITIONS. As an example of the possible entries, note the accident brief identified by Docket No. 1-0014.

Similarly, special data are printed for accidents involving the collision of aircraft which are both in flight. The special data appearing in the briefs of such accidents are: SEGMENTS OF AVIATION INVOLVED; CONTROLLING AGENCY; TRAFFIC ADVISORY ISSUED; CONTROL ZONE/AREAS; EVASIVE ACTION TAKEN; RADAR CONTROL/SURVEILLANCE; CONTROLLED/UNCONTROLLED AIRPORT; and CONVERGENCE ANGLE-DEGREES. The accident brief identified by Docket No. 1-0012 provides examples of the possible entries.

II. The total and fatal accident rates per 100,000 aircraft-hours flown, all scheduled service (page 25 in the Review), reflected the high percentage of the total number of accidents in 1968 which were fatal. The total accident rate was the lowest ever recorded, while the fatal accident rate was the highest since 1964.

The aircraft accident figures presented on page 23 of the Review indicate that U. S. Air Carriers, in all operations, experienced more fatal accidents than in any year since 1960, and more passenger fatalities and total fatalities than in any year since 1960. The fatal accident rate per

million aircraft-miles flown, however, was as low as the rate for 1966, which was the lowest ever recorded.

III. In 1968, almost one out of every three air carrier accidents was associated with turbulence. Section II of this Analysis focuses upon turbulence accidents and, in order to bring the problem into perspective, examines the recent history of turbulence associated accidents. Section II examines many aspects of these accidents, such as the location and time of the accident, aircraft damage, and type of power of the aircraft involved. One important finding resulting from the turbulence study of the 111 accidents of this type from 1960-68 concerned the number of persons injured in such accidents. In 79 of the 110 accidents involving injury, only one person was injured, while in 19 accidents, only two persons were injured. Thus, in almost 90 percent of turbulence accidents involving injury, only one or two persons were injured.

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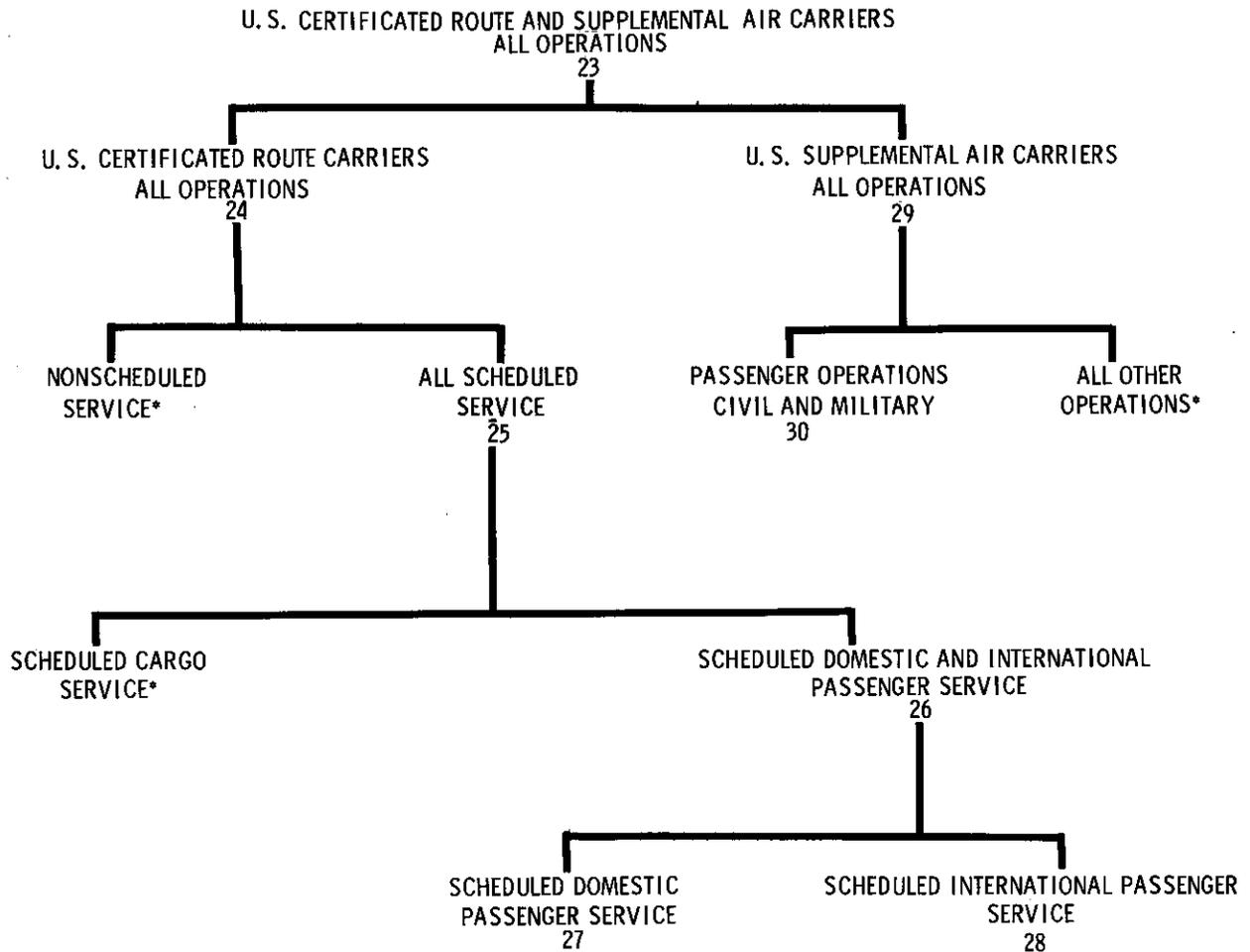
NON SCHEDULED SERVICE

SCHEDULED AIR SERVICE*

NOTE: CATEGORY

NOTE: NUMBER FC CATEGORY

CLASSIFICATION AND TYPE OF SERVICE U.S. AIR CARRIERS



NOTE: CATEGORIES MARKED WITH AN ASTERISK (*) ARE NOT SEPARATELY EXAMINED IN THIS ANALYSIS.

NOTE: NUMBER FOLLOWING EACH CATEGORY REFERS TO PAGE IN THE ANNUAL REVIEW DEALING WITH THE PARTICULAR CATEGORY OF SERVICE.

SECTION I
ANALYSIS BY CLASS OF CARRIER

U. S. CERTIFICATED ROUTE AND SUPPLEMENTAL AIR CARRIERS
ALL OPERATIONS
1968

In 1968, U. S. Certificated Route and Supplemental Air Carriers in all operations flew 2,498,848,000 aircraft miles, an increase of 55.72 percent over the 1963-67 base period average of 1,604,672,853 aircraft-miles per year. The total number of accidents decreased 7.55 percent, but fatal accidents increased 36.36 percent. Fatal injuries increased 32.1 percent. Since the accident and injury percentages did not increase to the same degree as aircraft-miles flown, it follows that the accident and fatality rates should decrease. The total accident rate per million aircraft-miles flown decreased 41.67 percent, while the fatal accident rate decreased over 28 percent and the fatality rate decreased almost 12 percent. In the 1967 Preliminary Analysis of Aircraft Accident Data, it was stated that this "decrease in total accidents coupled with an increase in fatal accidents is probably a reflection of the recent trend toward faster aircraft with increased passenger capacity". The data for 1968 tend to support this conclusion, for the ratio of fatal accidents to total accidents is the highest in the last 20 years.

ACCIDENTS, FATALITIES, RATES, AND GROWTH CHANGES FROM BASE (1963-67)

| | <u>Base</u> | <u>1968</u> | <u>Percentage Change</u> |
|-----------------------------|---------------|---------------|------------------------------|
| <u>Aircraft-Miles Flown</u> | 1,604,672,853 | 2,498,848,000 | +55.72% |
| <u>Accidents</u> | | | |
| Total Accidents | 76.8 | 71 | -7.55% |
| Fatal Accidents | 11.0 | 15a/ | +36.36% |
| <u>Fatal Injuries</u> | 264.2 | 349 | +32.10% |

a/ Include two midair collisions nonfatal to Air Carrier occupants, excluded in fatal accident rate.

Note: Nonrevenue miles of the Supplemental Air Carriers were not reported in 1963, 1964, 1965, 1966, and 1967, and were not used in determining the base figure.

Note: Sabotage accident occurring 5/7/64 (44 fatalities) is included in all computations except rates.

(Continued)

ACCIDENTS, FATALITIES, RATES, AND GROWTH CHANGES FROM BASE (1963-67)

| | <u>Base</u> | <u>1968</u> | <u>Percentage Change</u> |
|--|-------------|-------------|------------------------------|
| <u>Accident Rate Per Million Aircraft- Miles Flown</u> | | | |
| Total Accidents | 0.048 | .028 | -41.67% |
| Fatal Accidents | 0.007 | .005 | -28.57% |
| <u>Fatality Rate Per Million Aircraft- Miles Flown</u> | | | |
| | 0.159 | .140 | -11.95% |

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U. S. CERTIFICATED ROUTE AIR CARRIERS
ALL OPERATIONS
1968

During the base period 1963-67, U. S. Certificated Route Air Carriers in all operations flew an average of 1,541,520,654 aircraft-miles per year. In 1968, the figure was 2,385,309,000 aircraft-miles, representing an increase of 54.74 percent. The total number of accidents decreased 9.88 percent, while fatal accidents increased 48.94 percent. The number of fatal injuries increased 42.74 percent. As in 1967, accident rates per million aircraft-miles flown showed decreases, as did the fatality rate when compared with the base period.

ACCIDENTS, FATALITIES, RATES, AND GROWTH CHANGES FROM BASE (1963-67)

| | <u>Base</u> | <u>1968</u> | <u>Percentage Change</u> |
|---|---------------|------------------|------------------------------|
| <u>Aircraft-Miles Flown</u> | 1,541,520,654 | 2,385,309,000 | +54.74% |
| <u>Accidents</u> | | | |
| Total Accidents | 68.8 | 62 | -9.88% |
| Fatal Accidents | 9.4 | 14 ^{a/} | +48.94% |
| <u>Fatal Injuries</u> | 243.8 | 348 | +42.74% |
| <u>Accident Rates Per Million Aircraft- Miles Flown</u> | | | |
| Total Accidents | 0.045 | .026 | -42.22% |
| Fatal Accidents | 0.006 | .005 | -16.67% |
| <u>Fatality Rate Per Million Aircraft- Miles Flown</u> | 0.152 | .146 | - 4.27% |

a/ Includes two midair collisions nonfatal to Air Carrier occupants, excluded in fatal accident rates.

Note: Sabotage accident occurring 5/7/64 (44 fatalities) is included in all computations except rates.

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U. S. CERTIFICATED ROUTE AIR CARRIERS
ALL SCHEDULED SERVICE
1968

This segment of U. S. Air Carrier Operations showed a significant increase in aircraft activity. Aircraft-miles flown increased over 54 percent, while aircraft-hours and aircraft departures increased 33.98 percent and 24.66 percent, respectively. These percentage changes reflect the use of faster aircraft and the effects of changing route structures. The average aircraft in the base period flew a distance of 327 miles at 337 miles per hour, whereas in 1968, the average aircraft flew a distance of 405 miles at 388 miles per hour.

All rates reflecting total accidents showed marked decreases while the fatal accident rates either remained unchanged or showed moderate increases.

ACCIDENTS, ACCIDENT RATES, GROWTH CHANGES FROM BASE (1963-67)

| | <u>Base</u> | <u>1968</u> | <u>Percentage</u> <u>Change</u> |
|---|---------------|------------------|------------------------------------|
| <u>Aircraft-Miles Flown</u> | 1,390,599,161 | 2,146,037,985 | +54.33% |
| <u>Aircraft-Hours Flown</u> | 4,121,610 | 5,521,931 | +33.98% |
| <u>Aircraft Departures</u> | 4,251,710 | 5,299,987 | +24.66% |
| <u>Accidents</u> | | | |
| Total Accidents | 57.6 | 56 | - 2.78% |
| Fatal Accidents | 7.6 | 13 ^{a/} | +71.05% |
| <u>Accident Rates Per</u> <u>Million Aircraft-</u> <u>Miles Flown</u> | | | |
| Total Accidents | .041 | .026 | -36.59% |
| Fatal Accidents | .005 | .005 | Unchanged |
| <u>Accident Rates Per</u> <u>100,000 Aircraft-</u> <u>Hours Flown</u> | | | |
| Total Accidents | 1.398 | 1.014 | -27.47% |
| Fatal Accidents | .184 | .199 | + 8.15% |
| <u>Accident Rates Per</u> <u>100,000 Aircraft</u> <u>Departures</u> | | | |
| Total Accidents | 1.355 | 1.057 | -21.99% |
| Fatal Accidents | .179 | .208 | +16.20% |

a/ Includes two midair collisions nonfatal to Air Carrier occupants, excluded in fatal accident rate.

Note: Sabotage accident occurring 5/7/64 is included in all computations except rates.

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U. S. CERTIFICATED ROUTE AIR CARRIERS
SCHEDULED DOMESTIC AND INTERNATIONAL PASSENGER SERVICE

1968

Scheduled Domestic and International Passenger Service of the U. S. Certificated Route Air Carriers in 1968 showed a significant increase (53.43 percent) over the base period in the number of passengers carried. Passenger-miles flown also increased (60.75 percent) from the base period figure of 74.4 billion to 119.6 billion in 1968. The total number of accidents was down slightly (1.49 percent), but the number of fatal accidents almost doubled, showing an increase of about 97 percent. Passenger fatalities, up over 83 percent, nearly kept pace with the rise in fatal accidents, indicating that the concern for survivability in fatal crashes noted in the 1967 Preliminary Analysis of Aircraft Accident Data was well founded. Two of the 13 fatal accidents in 1968 were midair collisions which were nonfatal to Air Carrier occupants and which did not prevent the Air Carrier aircraft from making safe landings. Discarding these two accidents, the percentage change between the base period and 1968 is a 66.7-percent increase, which, when compared with the 83.29-percent increase in passenger fatalities, is further evidence of the continuing problem of crash survivability.

ACCIDENTS, ACCIDENT RATES, GROWTH CHANGES FROM BASE (1963-67)

| | <u>Base</u> | <u>1968</u> | <u>Percentage Change</u> |
|---|----------------|------------------|------------------------------|
| <u>Passengers Carried</u> | 97,868,202 | 150,162,701 | + 53.43% |
| <u>Passenger-Miles Flown</u> | 74,409,282,600 | 119,612,578,000 | + 60.75% |
| <u>Accidents</u> | | | |
| Total Accidents | 53.8 | 53 | - 1.49% |
| Fatal Accidents | 6.6 | 13 ^{a/} | + 96.97% |
| <u>Fatal Injuries</u> | | | |
| Passengers | 166.4 | 305 | + 83.29% |
| Crew | 22.8 | 34 | + 49.12% |
| Others | 1.2 | 6 | +400.00% |
| Total | 190.4 | 345 | + 81.20% |
| <u>Passenger Fatality Rate Per 100 Million Passenger- Miles Flown</u> | 0.213 | .255 | + 19.72% |

^{a/} Includes two midair collisions nonfatal to Air Carrier occupants.

Note: Passenger deaths occurring in sabotage accident on 5/7/64 (41 fatalities) are included in all computations except rates.

U. S. CERTIFICATED ROUTE AIR CARRIERS
SCHEDULED DOMESTIC PASSENGER SERVICE

1968

U. S. Certificated Route Air Carriers engaged in Scheduled Domestic Passenger Service during 1968 carried 134,434,632 passengers, representing a significant increase (53.54 percent) over the base period figure of 87,557,661. Passenger-miles flown, however, showed a larger rate of increase, indicating that, for the second consecutive year, the average passenger was carried further (682 miles) per departure in 1968 than in the average base period year (646 miles). The total number of accidents decreased slightly, while the number of fatal accidents showed a marked increase of 96.43 percent. Fatal injuries to passengers increased from an average of 128.8 for the average base period year to 258 in 1968, indicating a 100.78-percent increase. Crew fatalities climbed 41.18 percent, while injuries to others climbed 500 percent from the base period figure of one. The total number of fatalities in 1968 increased 96.19 percent over the base period figure. The passenger fatality rate per 100 million passenger-miles flown increased 31.92 percent.

ACCIDENTS, ACCIDENT RATES, GROWTH CHANGES FROM BASE (1963-67)

| | <u>Base</u> | <u>1968</u> | <u>Percentage</u> <u>Change</u> |
|--|----------------|------------------|------------------------------------|
| <u>Passengers Carried</u> | 87,557,661 | 134,434,632 | +53.54% |
| <u>Passenger-Miles Flown</u> | 56,487,899,200 | 91,668,180,000 | +62.28% |
| <u>Accidents</u> | | | |
| Total Accidents | 46.4 | 42 | - 9.48% |
| Fatal Accidents | 5.6 | 11 ^{a/} | +96.43% |
| <u>Fatal Injuries</u> | | | |
| <u>Passengers</u> | 128.8 | 258 | +100.78% |
| <u>Crew</u> | 17.0 | 24 | + 41.18% |
| <u>Others</u> | 1.0 | 6 | +500.00% |
| Total | 146.8 | 288 | + 96.19% |
| <u>Passenger Fatality Rate</u> | | | |
| <u>Per 100 Million</u> <u>Passenger-Miles Flown</u> | 0.213 | 0.281 | +31.92% |

a/ Includes two midair collisions nonfatal to Air Carrier occupants.

Note: The 41 passenger fatalities which occurred in a 1964 sabotage accident are included in passenger fatalities but are excluded in the computation of passenger fatality rates.

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U. S. CERTIFICATED ROUTE AIR CARRIERS
SCHEDULED INTERNATIONAL PASSENGER SERVICE

1968

In 1968, U. S. Certificated Route Air Carriers engaged in Scheduled International Passenger Service showed large increases in activity indicators. The number of passengers carried increased 52.54 percent, while passenger-miles flown increased 55.91 percent. The total number of accidents increased 48.65 percent while the number of fatal accidents increased 100 percent from one in the base period year to two in 1968. Passenger fatalities increased 25 percent in 1968, while the total number of fatalities increased 30.73 percent. The passenger fatality rate per 100 million passenger-miles decreased 20 percent.

ACCIDENTS, FATALITIES, RATES, AND GROWTH CHANGES FROM BASE (1963-67)

| | <u>Base</u> | <u>1968</u> | <u>Percentage Change</u> |
|--|----------------|----------------|--------------------------|
| <u>Passengers Carried</u> | 10,310,540 | 15,728,069 | +52.54% |
| <u>Passenger-Miles Flown</u> | 17,922,869,600 | 27,944,398,000 | +55.91% |
| <u>Accidents</u> | | | |
| Total Accidents | 7.4 | 11 | +48.65% |
| Fatal Accidents | 1.0 | 2 | +100.00% |
| <u>Fatal Injuries</u> | | | |
| Passengers | 37.6 | 47 | +25.00% |
| Crew | 5.8 | 10 | +72.41% |
| Others | 0.2 | 0 | -100.00% |
| Total | 43.6 | 57 | +30.73% |
| <u>Passenger Fatality Rate</u> | | | |
| <u>Per 100 Million Passenger-Miles Flown</u> | 0.210 | .168 | -20.00% |

U. S. SUPPLEMENTAL AIR CARRIERS
ALL OPERATIONS
1968

The total number of accidents incurred by U. S. Supplemental Air Carriers in 1968 increased 50.00 percent, or about the increase in aircraft-miles flown (64.47 percent). All of the other indicators showed decreases. The number of fatal injuries decreased 95.15 percent, while the fatality rate per million aircraft-miles decreased almost 97 percent. The total accident rate and fatal accident rate showed decreases of 9.20 percent and 60.87 percent, respectively.

ACCIDENTS, FATALITIES, RATES, AND GROWTH CHANGES FROM BASE (1963-67)

| | <u>Base</u> | <u>1968</u> | <u>Percentage</u> <u>Change</u> |
|---|---------------|----------------|------------------------------------|
| <u>Aircraft-Miles Flown</u> | 69,032,600 a/ | 113,540,000 a/ | +64.47% |
| <u>Accidents</u> | | | |
| Total Accidents | 6.0 | 9 | +50.00% |
| Fatal Accidents | 1.6 | 1 | -37.50% |
| <u>Fatal Injuries</u> | 20.6 | 1 | -95.15% |
| <u>Accident Rates Per</u> <u>Million Aircraft-</u> <u>Miles Flown</u> | | | |
| Total Accidents | .087 | .079 | - 9.20% |
| Fatal Accidents | .023 | .009 | -60.87% |
| <u>Fatality Rate Per</u> <u>Million Aircraft-</u> <u>Miles Flown</u> | .298 | .009 | -96.98% |

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U. S. SUPPLEMENTAL AIR CARRIERS
PASSENGER OPERATIONS-CIVIL AND MILITARY
1968

In 1968, U. S. Supplemental Air Carriers engaged in Civil and Military Passenger Operations flew nearly 9 billion passenger-miles, representing a 183.96-percent increase over the 3,129,269,400 passenger-miles averaged during the base period of 1963-67 and approximately a 50-percent increase over the 6 billion passenger-miles flown in 1967. An increase of 108.63 percent in passengers carried in further evidence of the large increase in activity for 1968. The three accidents in 1968 brought a 400-percent increase in the total number of accidents in 1968, and the number of fatal accidents increased a like amount.

The extremely safe year in terms of rates, recorded by "Passenger Operations" helped to keep the fatal accident rate and fatality rate for "All Operations" down as well.

ACCIDENTS, FATALITIES, RATES, AND GROWTH CHANGES FROM BASE (1963-67)

| | <u>Base</u> | <u>1968</u> | <u>Percentage Change</u> |
|--------------------------------|---------------|---------------|------------------------------|
| <u>Passenger-Miles Flown</u> | 3,129,269,400 | 8,885,783,000 | +183.96% |
| <u>Passengers Carried</u> | 1,279,518 | 2,669,466 | +108.63% |
| <u>Accidents</u> | | | |
| Total Accidents | 0.6 | 3 | +400.00% |
| Fatal Accidents | 0.2 | 1 | +400.00% |
| <u>Fatal Injuries</u> | | | |
| Passengers | 15.6 | 1 | -93.59% |
| Crew | 1.0 | 0 | -100.00% |
| Others | 0 | 0 | Unchanged |
| Total | 16.6 | 1 | -93.98% |
| <u>Passenger Fatality Rate</u> | | | |
| <u>Per 100 Million</u> | | | |
| <u>Passenger-Miles Flown</u> | 0.499 | 0.011 | -97.80% |

SECTION II

AN ANALYSIS OF ACCIDENTS INVOLVING TURBULENCE

1960-68

In 1968, turbulence accidents^{1/} were more prevalent than in any previous year. Of the 71 accidents occurring in U. S. Air Carrier Operations in 1968, 21, or 29.58 percent, were turbulence accidents. Turbulence accidents accounted for a large percentage of the total number of accidents occurring during the period 1960-68. Of the 691 accidents in U. S. Air Carrier Operations during this period, 111, or 16.1 percent, were turbulence accidents. Thus while one out of every six total accidents during the period was a turbulence accident, it will be noted that only one out of 15 fatal accidents was a turbulence accident.

In most accidents involving turbulence, there is little or no damage to the aircraft. Of the 111 aircraft involved in turbulence accidents, 85 were undamaged. Six aircraft, however, were destroyed: two L-188's, an L-1049, a B-720, a DC-8, and a BAC-1-11. The four aircraft substantially damaged were a C-46, a DC-6, and two DC-8's. Twelve aircraft incurred minor damage, including four DC-8's, two B-720's, a DC-6, a DC-3, a CV-880, a CV-440, a Caravelle, and one L-749. In four accident reports, the damage to the aircraft was either unknown or not reported.

AIRCRAFT DAMAGE

| <u>YEAR</u> | <u>DESTROYED</u> | <u>SUBSTANTIAL</u> | <u>MINOR</u> | <u>NONE</u> | <u>UNKNOWN/ NOT REPORTED</u> | <u>TOTAL</u> |
|-------------|------------------|--------------------|--------------|-------------|----------------------------------|--------------|
| 1960 | 1 | 0 | 1 | 8 | 0 | 10 |
| 1961 | 0 | 0 | 1 | 3 | 2 | 6 |
| 1962 | 0 | 0 | 1 | 3 | 1 | 5 |
| 1963 | 1 | 1 | 2 | 10 | 1 | 15 |
| 1964 | 2 | 1 | 3 | 8 | 0 | 14 |
| 1965 | 0 | 1 | 0 | 13 | 0 | 14 |
| 1966 | 0 | 0 | 0 | 11 | 0 | 11 |
| 1967 | 1 | 0 | 3 | 11 | 0 | 15 |
| 1968 | 1 | 1 | 1 | 18 | 0 | 21 |
| Total | 6 | 4 | 12 | 85 | 4 | 111 |

^{1/} Turbulence accidents are defined as those accidents in which turbulence is cited as a probable cause or related factor, as well as those accidents in which turbulence is cited as a type of accident.

Turbulence accidents normally result in serious injury to only one or two persons. Six times in the 9-year period, however, such accidents have been catastrophic. On March 17, 1960, a Northwest Airlines Lockheed 188 crashed at Cannelton, Indiana, fatally injuring the 57 passengers and six crewmembers aboard. On February 12, 1963, a Boeing 720, also operated by Northwest Airlines, crashed near Miami, Florida, fatally injuring 35 passengers and the crew of eight. An Eastern Airlines DC-8 crashed on February 25, 1964, in Lake Ponchartrain, near New Orleans, Louisiana. All 58 persons aboard, including 51 passengers and seven crewmembers, died in the crash. On December 24, 1964, three crewmembers were fatally injured when a Lockheed 1049, operated by Flying Tiger Lines, crashed after taking off from San Francisco, California. On August 6, 1966, a Braniff BAC 1-11 crashed at Falls City, Nebraska, fatally injuring the 38 passengers and four crewmembers aboard. At Dawson, Texas, on May 3, 1968, however, the worst of the turbulence-associated accidents took place, when an L-188, operated by Braniff, crashed and fatally injured 80 passengers and five crewmembers. It is important to note that, in the foregoing accidents, turbulence was listed as a probable cause or as a contributing factor, and not as the probable cause. Thus, during the 9-year period, 262 passengers and 33 crewmembers died in six catastrophic crashes at least partially attributable to turbulence.

One additional fatality occurred on July 8, 1964, near Knoxville, Tennessee, when a United Air Lines Caravelle, with 54 persons aboard, encountered severe turbulence. One passenger was fatally injured when, as a result of the turbulence, she was hurled upward against the overhead rack and then to the floor. No other persons were injured, and the aircraft was undamaged.

In the 110 accidents in which persons received injury,^{2/} passengers only were injured^{3/} in 52 accidents, crewmembers only were injured in 41 accidents, and in 17 accidents, both passengers and crewmembers were injured. This is to say that passengers were injured in 69 of those 110 accidents, while crewmembers were injured in 58 accidents.

In 79 of the 110 accidents in which persons received serious or fatal injuries, only one person was injured. In each of 19 accidents, two persons were injured, while in each of seven accidents, three persons were injured. Six of the accidents involved injury to more than three persons, and all of these accidents were, as mentioned before, fatal to all aboard.

^{2/} One accident involved no injury to passengers or crew, but was reported as an accident because the aircraft sustained substantial damage.

^{3/} Includes fatal injuries.

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- Tennes:
- Texas.
- Virgini
- Vermont
- Washing
- Wyoming
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LOCATION OF TURBULENCE ACCIDENTS

U. S. AIR CARRIERS

ALL OPERATIONS

1960-68

| <u>LOCATION</u> | <u>ACCIDENTS</u> | |
|------------------------|------------------|--------------|
| | <u>TOTAL</u> | <u>FATAL</u> |
| Alabama | 2 | 0 |
| Alaska | 1 | 0 |
| Arizona | 1 | 0 |
| Arkansas | 1 | 0 |
| California | 8 | 1 |
| Colorado | 4 | 0 |
| Delaware | 1 | 0 |
| Florida | 13 | 1 |
| Georgia | 1 | 0 |
| Hawaii | 3 | 0 |
| Illinois | 5 | 0 |
| Iowa | 4 | 0 |
| Indiana | 3 | 1 |
| Kansas | 3 | 0 |
| Louisiana | 1 | 1 |
| Maine | 1 | 0 |
| Michigan | 2 | 0 |
| Minnesota | 2 | 0 |
| Montana | 3 | 0 |
| Nebraska | 5 | 1 |
| Nevada | 2 | 0 |
| New Jersey | 1 | 0 |
| New York | 4 | 1 |
| North Carolina | 4 | 0 |
| Oregon | 1 | 0 |
| Panama | 1 | 0 |
| Pennsylvania | 7 | 0 |
| South Dakota | 1 | 0 |
| Tennessee | 1 | 1 |
| Texas | 3 | 0 |
| Virginia | 2 | 0 |
| Vermont | 1 | 0 |
| Washington | 1 | 0 |
| Wyoming | 1 | 0 |
| Outside the U. S. | 17 | 0 |
| TOTAL | 111 | 7 |

SELECTED ACCIDENT DATA

TURBULENCE ACCIDENTS

U. S. AIR CARRIER OPERATIONS

1960-68

BY YEAR OF OCCURENCE

| <u>TOTAL ACCIDENTS</u> | <u>YEAR</u> | <u>TURBULENCE ACCIDENTS</u> |
|------------------------|-------------|-----------------------------|
| 90 | 1960 | 10 |
| 84 | 1961 | 6 |
| 70 | 1962 | 5 |
| 77 | 1963 | 15 |
| 79 | 1964 | 14 |
| 83 | 1965 | 14 |
| 75 | 1966 | 13 |
| 70 | 1967 | 13 |
| 71 | 1968 | 21 |

BY MONTH OF OCCURRENCE AND LOCATION

| <u>TOTAL TURBULENCE ACCIDENTS</u> | <u>MONTH OF OCCURRENCE</u> | <u>TURBULENCE ACCIDENTS- CONTIGUOUS UNITED STATES</u> |
|-----------------------------------|----------------------------|---|
| 14 | January | 7 |
| 4 | February | 3 |
| 8 | March | 7 |
| 7 | April | 6 |
| 11 | May | 11 |
| 9 | June | 9 |
| 14 | July | 14 |
| 16 | August | 13 |
| 11 | September | 7 |
| 5 | October | 3 |
| 7 | November | 4 |
| 5 | December | 5 |
| <u>111</u> | Total | <u>89</u> |

BY TYPE OF POWER

| <u>YEAR</u> | <u>PISTON</u> | <u>TURBOJET</u> | <u>TURBOPROP</u> | <u>TOTAL</u> |
|-------------|---------------|-----------------|------------------|--------------|
| 1960 | 5 | 4 | 1 | 10 |
| 1961 | 3 | 2 | 1 | 6 |
| 1962 | 2 | 3 | 0 | 5 |

BY TY

YEAR

1963

1964

1965

1966

1967

1968

Total

RATE BY

YEAR TU
AC

1960

1961

1962

1963

1964

1965

1966

1967

1968

TOTAL I

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dents occur
during the i
air carrier
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turbulence a
68 percent o
were involve

BY TYPE OF POWER (Cont'd)

| <u>YEAR</u> | <u>PISTON</u> | <u>TURBOJET</u> | <u>TURBOPROP</u> | <u>TOTAL</u> |
|-------------|---------------|-----------------|------------------|--------------|
| 1963 | 0 | 12 | 3 | 15 |
| 1964 | 6 | 7 | 1 | 14 |
| 1965 | 2 | 8 | 4 | 14 |
| 1966 | 1 | 10 | 2 | 13 |
| 1967 | 1 | 12 | 0 | 13 |
| 1968 | <u>1</u> | <u>17</u> | <u>3</u> | <u>21</u> |
| Total | 21 | 75 | 15 | 111 |

RATE BY AIRCRAFT HOURS AND MILES FLOWN

| <u>YEAR</u> | <u>TURBULENCE ACCIDENTS</u> | <u>AIRCRAFT-HOURS FLOWN</u> | <u>AIRCRAFT-MILES FLOWN (000)</u> | <u>TURBULENCE ACCIDENT RATE</u> | |
|-------------|-----------------------------|-----------------------------|-----------------------------------|--|---|
| | | | | <u>PER 100,000 AIRCRAFT-HRS. FLOWN</u> | <u>PER MILLION AIRCRAFT-MILES FLOWN</u> |
| 1960 | 10 | 4,661,418 | 1,130,069 | .215 | .009 |
| 1961 | 6 | 4,192,374 | 1,104,042 | .143 | .005 |
| 1962 | 5 | 4,111,724 | 1,170,374 | .122 | .004 |
| 1963 | 15 | 4,126,399 | 1,231,312 | .364 | .012 |
| 1964 | 14 | 4,312,764 | 1,336,867 | .325 | .010 |
| 1965 | 14 | 4,690,882 | 1,536,395 | .298 | .009 |
| 1966 | 13 | 5,104,984 | 1,768,458 | .255 | .007 |
| 1967 | 13 | 5,868,842 | 2,179,739 | .222 | .006 |
| 1968 | <u>21</u> | <u>6,404,260</u> | <u>2,498,848</u> | <u>.328</u> | <u>.008</u> |
| TOTAL | 111 | 43,473,647 | 13,956,104 | .255 | .008 |

The foregoing tables need little interpretation, but certain interesting items deserve comment. The rate of turbulence accidents has decreased steadily, with the exception of the year 1968, since 1963. Prior to 1963, about one out of every 11 accidents was a turbulence accident. From 1963-68, turbulence accidents accounted for about one out of every five total accidents. The effects of the climate in the continental United States is reflected by the table relating location to month of occurrence. Over 52 percent of the turbulence accidents occurring during the 9-year period in the contiguous United States occurred during the four month period of May through August. The changing nature of the air carrier fleet, as well as the special turbulence problems encountered by the faster and higher flying turbojet aircraft, are reflected in the table depicting turbulence accidents by type of power. Turbojet aircraft accounted for nearly 68 percent of the turbulence accidents during the period; turboprop aircraft were involved in 13.5 percent; piston aircraft in almost 19 percent.

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