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CIVIL AERONAUTICS BOARD ANNUAL REVIEWS

OF U. S. AIR CARRIER ACCIDENTS

FOR CALENDAR YEARS 1953 - 1957

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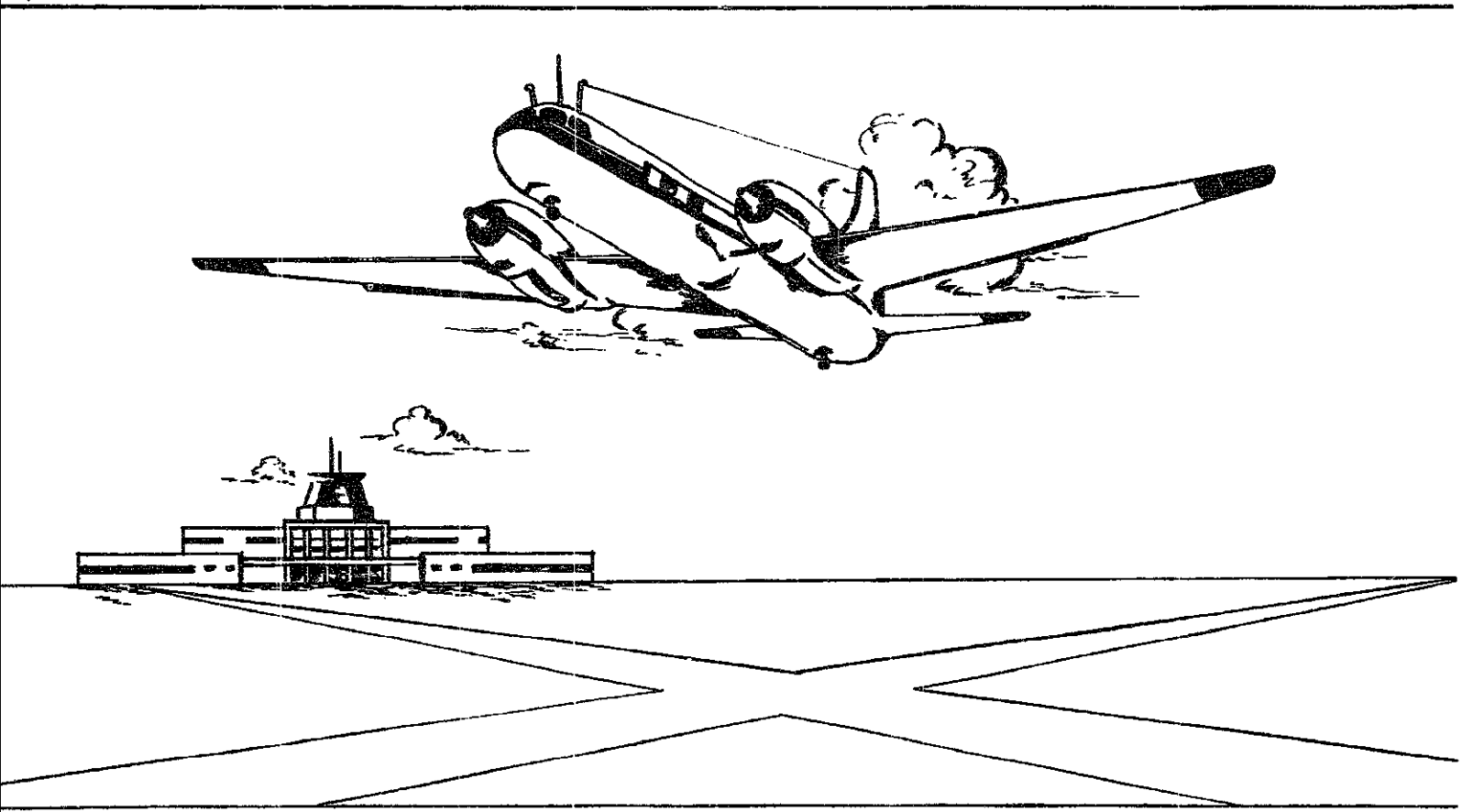
ACCIDENTS IN U. S. CIVIL AIR CARRIER AND GENERAL AVIATION OPERATIONS

Calendar Year 1957

FIXED-WING AIRCRAFT IN EXCESS OF 12,500 POUNDS CERTIFICATED TAKE-OFF WEIGHT, HELICOPTERS, AND ALL ALASKAN AIR CARRIERS



CIVIL AERONAUTICS BOARD
BUREAU OF SAFETY

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AUGUST 29, 1958

FOREWORD

The purpose of this report is to furnish statistics on the aircraft accidents that occurred in Air Carrier operations and in certain categories of General Aviation operations during the calendar year 1957. It furnishes information on types of accidents, safety rates, causal factors, and related data.

The report is divided into two parts:

PART I deals with U. S. Air Carrier accidents and safety records

PART II deals with General Aviation accidents involving fixed-wing aircraft having a gross certificated takeoff weight in excess of 12,500 pounds, and helicopters.

Note: Effective January 1, 1954, the Civil Aeronautics Board delegated to the Civil Aeronautics Administration the investigating and reporting of accidents involving fixed-wing aircraft of 12,500 pounds and lower certificated takeoff weight, except those used in Alaskan Air Carrier operations. For information concerning accidents in this category, inquiries should be directed to the CAA.

The aircraft accidents dealt with in this report are those that occurred incident to flight, that is, between the time an engine or engines are started for the purpose of commencing flight until the aircraft comes to rest with all engines stopped. An aircraft accident is an accident which occurs during the starting or warming up of an engine or engines, or operation of an aircraft, which results in serious or fatal injury to one or more persons or in substantial damage to any aircraft. Whenever serious or fatal injury results from contact with a rotating propeller which is installed on an aircraft it shall be considered an aircraft accident. In this report, however, propeller accidents to persons are not included in the statistics and safety rates relating to passenger fatalities in Air Carrier passenger operations.

The statistical details of accident factors cited in the report are based on investigations and analyses by the Bureau of Safety, Civil Aeronautics Board. All information relating to passenger-miles, plane-miles, and passengers flown in Air Carrier operations were prepared and furnished by the Board's Office of Carrier Accounts and Statistics. The Office of Planning, Research and Development, Civil Aeronautics Administration, is the source of the exposure (hours flown) in the General Aviation operations included in the report.

A brief description of the aircraft accidents that served as a basis for this report are contained in the publication, "Resume of U. S. Civil Air Carrier and General Aviation Aircraft Accidents," released June 30, 1958, by the CAB.

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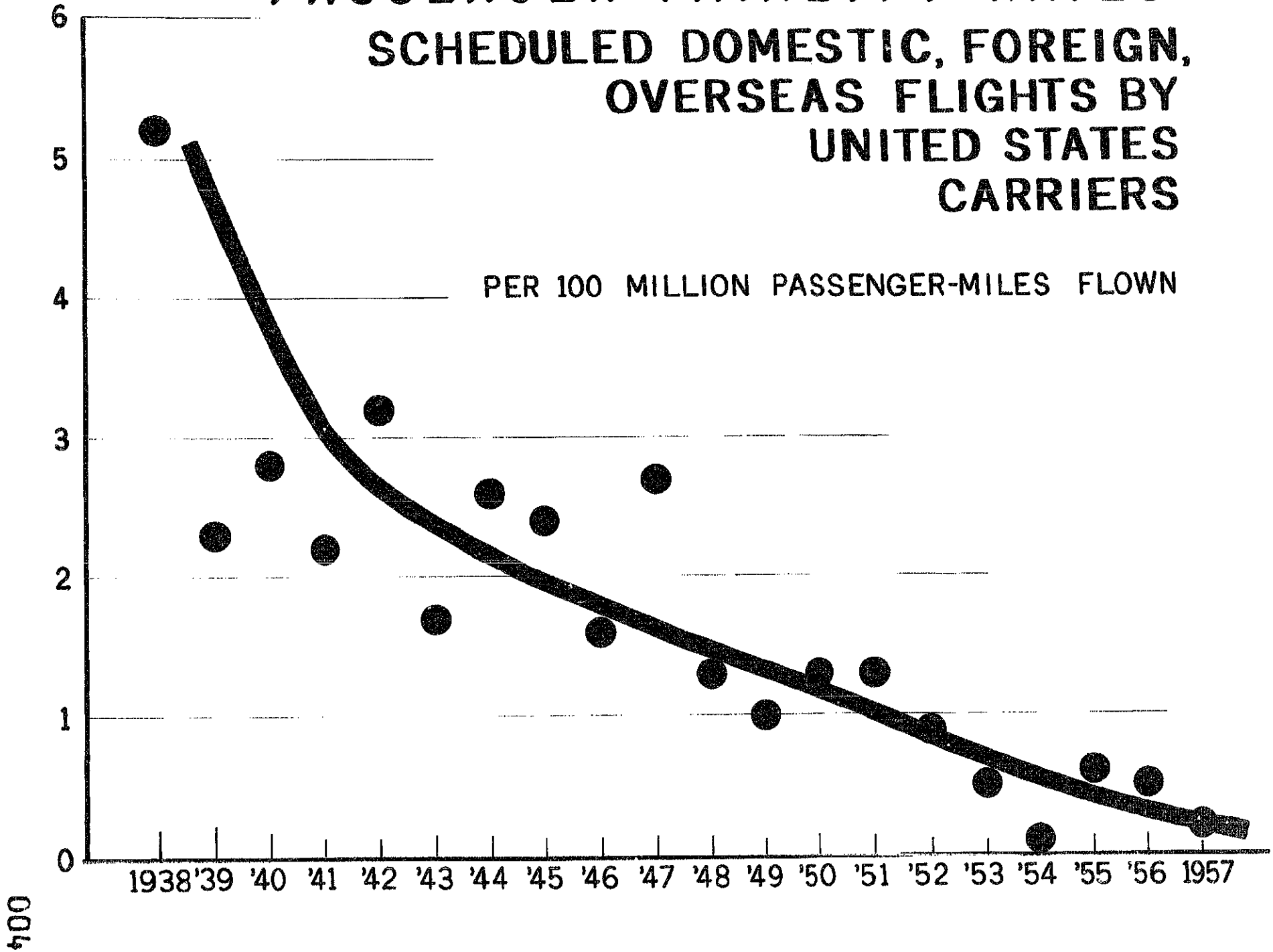
PASSENGER FATALITY RATES-
SCHEDULED DOMESTIC, FOREIGN, OVERSEAS FLIGHTS BY UNITED STATES CARRIERS



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PART I

U. S. AIR CARRIER OPERATIONS

Section 1

Safety Records in Air Carrier Public Passenger Operations

1. Certificated Carriers--Scheduled Passenger Services

The safety record of U. S. Certificated Air Carrier operations in scheduled passenger service continued on a high plane during 1957, bettering the 1956 record. In comparison 1/ with the preceding year, 3.4 million more passengers were carried and 100 million more revenue plane-miles were flown with a drop in the passenger fatality rate per 100 million passenger-miles from 0.5 in 1956 to 0.2 in 1957; this was the sixth consecutive calendar year in which this rate was less than one. The number of passenger fatalities decreased from 143 in 1956 to 67 in 1957.

During this same period, the Alaskan Air Carrier operations in scheduled passenger services, including States-Alaska service, were accomplished with a drop in the passenger fatality rate from 6.2 in 1956 to 1.2 in 1957 per 100 million passenger-miles. The number of passenger fatalities declined from 9 in 1956 to 2 in 1957.

In all, the certificated carriers transported 49,423,166 million passengers and flew 929 million plane-miles in scheduled service with a total of 57 accidents, 5 of which were fatal: On a plane-mile basis, the fatal accident rate was 0.005 per million plane-miles flown. In 42 of the 57 accidents there were no, or only minor, injuries to passengers. Refer to Table 2 for further details in respect to accident injury index and accident rates on plane-mile basis for the various classes of carriers.

Table 3 presents the record of the Local Service Helicopter Operators from 1953, when passenger service was initiated, through 1957.

2. Noncertificated Carriers--Public Passenger Services

There were no fatalities in this field during 1957, the second consecutive year of fatality-free operations. Figures on the number of passengers carried in public service operations are not available, however, there was an approximate decrease of 32 percent in the number of passenger-miles flown during 1957 compared with the preceding year, the total declining from 628.9 to 429.6 million.

1/ Alaskan operations excluded.

3. Overall Rate, All Air Carriers--Scheduled and Public Passenger Services

In 1957, all of the U. S. Air Carriers, certificated and noncertificated, flew 32.8 billion passenger-miles with a fatality rate of 0.2 per 100 million passenger-miles operated. These air carriers flew 941 million revenue plane-miles with 59 total and 5 fatal accidents at a respective rate of 0.063 and 0.005 per 1 million plane-miles. In the preceding year there were 61 accidents, 6 fatal--and 837 million revenue plane-miles operated with an accident rate per 1 million plane-miles flown of 0.07 and 0.007, respectively. Detailed data relating to the 1957 record of the individual carriers is shown in Tables 4 through 8.

4. Nonscheduled and Military Contract Operations

The preceding treated with operations in public passenger service. Additionally, the air carriers conducted nonscheduled revenue passenger service, including military contract flights.

The certificated carriers in their nonscheduled services flew 1.5 billion revenue passenger-miles in 1957. In these operations there was a total of 10 accidents, 3 of which were fatal. Nine of these, including 2 of the fatal accidents, occurred in Alaskan operations; the other one, a fatal accident, occurred in a chartered helicopter flight.

The noncertificated carriers, in addition to their public passenger operations, flew a total of 341.4 million revenue passenger-miles in military contract services during 1957. In these operations they had a total of 1 accident, fatal, in military cargo operations. There were no accidents in any passenger operations.

TABLE 1

SAFETY RECORD OF U. S. AIR CARRIERS IN PUBLIC PASSENGER SERVICE
(Calendar Years 1957-1956)

	Accidents[1] Total	Accidents[1] Fatal	Fatalities: Passengers	Fatalities: Pilot	Fatalities: Copilot	Fatalities: Other Crew	Revenue Passengers Carried	Passenger-Miles[2] (000)	Revenue Plane-Miles	Passenger Fatalities per 100 Million Passenger-Miles
CERTIFICATED CARRIERS										
Scheduled Domestic										
Trunk										
1957	38	3	31	1	1	0	40,273,221	25,373,792	698,430,579	0.1
1956	39	3	142	2	2	9	37,596,095	22,402,242	608,502,359	0.6
Local Service[3]										
1957	5	0	0	0	0	0	4,109,055	784,954	68,377,927	0
1956	8	1	1	0	0	0	3,517,870	665,443	60,222,637	0.2
Territorial										
1957	0	0	0	0	0	0	590,054	93,592	4,318,341	0
1956	0	0	0	0	0	0	624,604	87,468	4,226,632	0
Subtotal - Domestic										
1957	43	3	31	1	1	0	44,972,330	26,252,338	771,126,847	0.1
1956	47	4	143	2	2	9	41,738,569	23,155,153	672,951,628	0.6
Scheduled Foreign/Overseas										
1957	7	1	36	1	1	6	4,147,937	5,981,841	146,685,480	0.6
1956	1	0	0	0	0	0	3,950,671	5,307,543	137,294,516	0
TOTAL SCHEDULED CARRIERS										
1957	50	4	67	2	2	6	49,120,267	32,234,179	917,812,327	0.2
1956	48	4	143	2	2	9	45,689,240	28,462,696	810,246,144	0.5
Alaskan Scheduled Mail Carriers										
1957	7	1	2	1	1	1	302,899	161,496	11,383,553	1.2
1956	13	2	9	2	0	0	315,288	145,589	11,231,213	6.2
NONCERTIFICATED CARRIERS										
Public Passenger Service[4]										
1957	2	0	0	0	0	0	NA	429,645	11,900,982	0
1956	0	0	0	0	0	0	NA	628,872	15,860,070	0
GRAND TOTAL - PUBLIC PASSENGER SERVICE										
1957	59	5	69	3	3	7	49,423,166	32,825,320	941,096,862	0.2
1956	61	6	152	4	2	9	46,004,528	29,237,157	837,337,427	0.5

1/ Excludes propeller accidents to persons and the accident near Daggett, California, 7/25/57, involving suicide.
2/ Includes nonrevenue passenger-miles.
3/ Includes scheduled helicopter service.
4/ In both domestic and foreign/overseas operations.

NA - Not available.

NOTE: 1956 figures include minor revisions based on data received subsequent to 1957 publication.

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TABLE 2

ACCIDENT INDEX AND RATES VS MILES FLOWN
SCHEDULED PASSENGER OPERATIONS - 1957

Items	Injury Index: Fatal	Serious	Minor - None	Total Number Accidents	Revenue Plane-Miles Flown	Accident Rate per 1 Million Revenue Plane-Miles: Fatal	Total
Domestic							
Trunk	3	9	26	38	698,430,579	0.004	0.05
Local Service	0	0	5	5	67,303,078	-	0.07
Helicopter	0	0	0	0	1,074,849	-	-
Subtotal	3	9	31	43	766,808,506	0.004	0.06
Foreign/Overseas	1	1	5	7	146,685,480	0.007	0.05
Alaskan	1	0	6	7	11,383,553	0.09	0.6
Territorial	0	0	0	0	4,318,341	-	-
TOTAL	5	10	42	57	929,195,880	0.005	0.06

TABLE 3

HELICOPTER SERVICE
SCHEDULED PASSENGER OPERATIONS 1953-1957

Items	1953	1954	1955	1956	1957	Total
Passengers carried	1,237	8,392	28,746	63,537	153,465	255,377
Passenger-miles flown (000)	35	211	684	1,661	3,438	6,029
Revenue plane-miles flown	63,022	177,752	434,792	702,687	1,074,849	2,453,102
Number of Accidents:						
Fatal	0	0	0	0	0	0
Serious injury	0	0	0	0	0	0
Minor/No injury	0	1	0	1	0	2
Total	0	1	0	1	0	2
Passenger fatalities	0	0	0	0	0	0
Passenger serious injury	0	0	0	0	0	0
Accident Rate per 1 Million Revenue Plane-miles Flown						
Fatal	-	-	-	-	-	-
Nonfatal	-	5.6	-	1.4	-	0.8
Total	-	5.6	-	1.4	-	0.8

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TABLE 4

SAFETY RECORD OF INDIVIDUAL TRUNK CARRIERS
SCHEDULED PASSENGER OPERATIONS - 1957

Operators	Accidents		Fatalities				Revenue Passengers Carried	Passenger-miles 1/ (000)	Revenue Plane-Miles
	Total	Fatal	Passengers 1/	Pilot	Copilot	Other Crew			
Trunk									
American Airlines.....	6	1	1	0	0	0	7,505,812	5,224,893	134,469,856
Braniff Airways.....	1						1,994,836	896,571	33,395,578
Capital Airlines.....	8 2/						3,947,918	1,552,818	58,888,075
Continental Air Lines...	1						828,323	383,695	14,989,718
Delta Air Lines.....	2						2,643,779	1,366,352	40,133,623
Eastern Air Lines.....	4						7,816,581	4,487,724	117,424,756
National Airlines.....	1						1,347,183	923,905	23,601,601
Northeast Airlines.....	3	2	30	1	1	0	763,617	262,889	10,756,000
Northwest Airlines.....	2						1,372,929	985,918	26,014,491
Trans World Airlines....	5 2/						4,531,457	3,824,229	96,402,813
United Air Lines.....	3						6,152,702	4,741,958	121,010,175
Western Air Lines.....	3 3/						1,368,084	722,840	21,343,893
Total.....	38	3	31	1	1	0	40,273,221	25,373,792	698,430,579

1/ Both revenue and nonrevenue
2/ Collision between aircraft on ground - counted as one accident in totals.
3/ Excludes fatal accident near Daggett, Calif., 7/25/57 - involving suicide.
NOTE: Excludes propeller accidents to persons. Statistics contained in this and subsequent tables are subject to revision.

TABLE 5 SAFETY RECORD OF INDIVIDUAL LOCAL SERVICE (INCLUDING HELICOPTER CARRIERS)
SCHEDULED PASSENGER OPERATIONS - 1957

Operators	Accidents		Fatalities				Revenue Passengers Carried	Passenger-miles[1] (000)	Revenue Plane-miles
	Total	Fatal	Passengers[1]	Pilot	Copilot	Other Crew			
LOCAL SERVICE									
Allegheny Airlines							440,389	78,811	6,389,219
Bonanza Air Lines							147,710	34,477	3,083,644
Central Airlines							116,987	24,928	3,319,654
Frontier Air Lines	2						213,446	60,905	5,499,461
Lake Central Airlines							160,034	26,228	2,757,983
Mohawk Airlines	1						418,431	82,410	5,170,500
North Central Airlines	1						652,594	106,501	9,246,413
Ozark Airlines							387,580	65,360	6,118,934
Piedmont Aviation	1						398,394	86,176	7,328,821
Southern Airways							210,414	39,573	3,850,069
Southwest Airways							319,276	72,073	4,313,468
Trans-Texas Airways							240,667	56,530	6,219,622
West Coast Airlines							249,568	47,544	4,005,290
Subtotal	5	0	0	0	0	0	3,955,590	781,516	67,303,078
HELICOPTER SERVICE									
Chicago Helicopter Airways							55,310	973	291,827
Los Angeles Airways							30,095	1,152	400,597
New York Airways							68,060	1,313	382,425
Subtotal	0	0	0	0	0	0	153,465	3,438	1,074,849
TOTAL LOCAL SERVICE	5	0	0	0	0	0	4,109,055	784,954	68,377,927

1/ Both revenue and nonrevenue.

TABLE 6

SAFETY RECORD OF U. S. FOREIGN-OVERSEAS CARRIERS
SCHEDULED PASSENGER OPERATIONS - 1957

Operator	Accidents		Fatalities				Revenue Passengers Carried	Passenger-miles 1/ (000)	Revenue Plane-miles
	Total	Fatal	Passengers 1/	Pilot	Copilot	Other Crew			
American Airlines.....							136,318	109,394	2,598,334
Braniff Airways.....							43,820	104,230	3,119,355
Caribbean-Atlantic Airlines							224,264	16,015	1,042,879
Delta Air Lines.....	2						69,040	85,112	2,418,631
Eastern Air Lines.....	1						317,562	428,061	8,185,893
Mackey Air Transport....							80,442	17,688	818,073
National Airlines.....							75,399	54,022	1,497,962
Northwest Airlines.....							119,010	274,409	8,370,174
Pan American World Airways (All Divisions)	4	1	36	1	1	6	2,562,516	3,708,621	88,353,634
Pan American Grace Airways							136,328	179,829	5,322,207
Trans World Airlines.....							271,309	729,115	18,700,919
United Air Lines.....							100,738	259,069	5,633,016
Uraba, Medellin & Central Airways.....							1,502	500	100,368
Western Air Lines.....							9,689	15,776	524,035
Total.....	7	1	36	1	1	6	4,147,937	5,981,841	146,685,480

1/ Both revenue and nonrevenue.

Excludes propeller accidents to persons on ground.

TABLE 7

SAFETY RECORD OF INDIVIDUAL ALASKAN [1] AND TERRITORIAL AIR CARRIERS IN SCHEDULED PASSENGER SERVICES - 1957

Operators	Accidents		Fatalities				Revenue Passengers Carried	Passenger-miles [2] (000)	Revenue Plane-miles
	Total	Fatal	Passengers [2]	Pilot	Copilot	Other Crew			
ALASKAN									
Alaska Airlines [3].....	1	1	2	1	1	1	37,318	20,443	2,302,743
Alaska Coastal Airlines	3						49,258	4,487	893,150
Cordova Airlines.....							11,412	1,655	305,622
Ellis Air Lines.....							51,461	3,155	639,753
Northern Consolidated Airlines.....	1						17,947	6,385	1,269,473
Pacific Northern Airlines [3].....	1						105,793	109,985	3,910,983
Reeve Aleutian Airways.							7,578	6,729	593,968
Wien Alaska Airlines...	1						22,132	8,657	1,467,861
Total.....	7	1	2	1	1	1	302,899	161,496	11,383,553
TERRITORIAL									
Hawaiian Airlines.....							413,516	64,275	2,564,744
Trans-Pacific Airlines.							176,538	29,317	1,753,597
Total.....							590,054	93,592	4,318,341

1/ Scheduled mail carriers
2/ Both revenue and nonrevenue
3/ States-Alaska and Intra-Alaska operations

TABLE 8

SAFETY RECORD OF INDIVIDUAL NONCERTIFICATED AIR CARRIERS IN BOTH PUBLIC AND MILITARY CONTRACT PASSENGER SERVICES
(Calendar Year 1957)

OPERATORS	PUBLIC SERVICES						MILITARY CONTRACT SERVICES						Aggregate[1] Number of Passengers Carried
	Accidents Total	Fatal	Revenue Passenger-Miles (000)	Revenue Plane-Miles	Fatalities Passenger	Crew	Accidents Total	Fatal	Revenue Passenger-Miles (000)	Revenue Plane-Miles	Fatalities Passenger	Crew	
All American Airways			1,298	38,307					23,249	849,112			18,793
American Flyers Airlines			1,785	122,501					4,173	301,393			7,084
Argonaut Airways Corporation			-	269,836					-	-			-
Associated Air Transport			438	12,012					6,882	250,847			5,579
Aviation Corp. of Seattle d/b/a Westair Transport			6,292	425,054					4,456	282,141			8,551
Blatz Airlines			3,104	139,744					-	-			12,948
California Air Charter			3,365	169,678					-	-			14,707
Airline Transport Carriers d/b/a California Hawaiian Airlines			2,909	90,013					32	47,811			8,268
Capitol Airways			1,721	45,410					79,335	8,280,963			28,962
Central Air Transport			6,729	188,870					22,168	666,400			18,713
Coastal Cargo Company			1	902					-	-			4
Conner Air Lines			3,601	45,223					-	-			881
Currey Air Transport	1		49,919	798,310					142	3,087			30,071
General Airways			20,548	418,680					10,143	364,597			12,282
Great Lakes Airlines			93,994	1,838,739					4,614	99,338			48,359
Johnson Flying Service			1,136	528,702					-	-			3,694
Los Angeles Air Service			210	2,892					1,012	29,382			860
Mantz, Paul Air Service			399	21,430					-	-			1,317
Meteor Air Transport[2]	1		20,426	1,445,792					14,246	643,722			20,325
Miami Airline			1,525	18,961					-	-			593
Modern Air Transport			957	25,855					17,284	645,030			15,414
Monarch Air Service			200	82,444					-	-			4,233
Overseas National Airways			32,792	498,583					9,292	1,781,323			13,312
Quaker City Airways			425	120,354					147	4,123			1,596
Regina Cargo Airlines			2,983	105,657					11,454	418,540			11,712
S. S. W., Inc. d/b/a Universal Airlines			7,824	343,469					13,191	356,541			21,298
Southern Air Transport			-	253,795					-	-			-
Standard Airways			9	707					-	-			38
Stewart Air Service			3,761	253,199					-	-			55,140
Trans-Alaskan Airlines			5,649	91,383					-	-			3,470
Trans-Caribbean Airways			18,473	280,359					7,528	178,973			18,049
Transocean Air Lines			88,427	2,223,891					15,521	3,698,296			40,303
Unit Export Company			5,615	98,077					2,532	80,802			4,169
U. S. Aircoach			152	5,454					-	-			693
United States Overseas Airlines			42,978	896,699					64,126	1,544,191			76,712
World Airways			-	-					29,119	1,408,223			27,918
World Wide Airways[3]			-	-					781	16,823			893
TOTAL	2	0	429,645	11,900,982	0	0	0	0	341,427	21,951,658	0	0	536,941

1/ Breakdown between public and military contract services not available.
2/ Passenger-miles, plane-miles, and aggregate number of passengers carried estimated for last half of 1957. Based on 12 months ended 6/30/57.
3/ Data represents 3 quarters of 1957. Carrier did not report 4th quarter.

U. S. AIR CARRIER OPERATIONS

SECTION 2

STATISTICS RELATING TO ALL CLASSES OF AIR CARRIER OPERATIONS REVENUE AND NONREVENUE

During 1957, a total of 113[1/] accidents--14 fatal--occurred in the total overall revenue and nonrevenue operations of both the certificated and noncertificated carriers. Salient points in this regard are:

Total miles flown		1,083 million
Accident rate per 1 million miles		0.1
Fatal		0.01
Fatal Injuries		99
Crew Members	20	
Passengers	72	
Other Persons	7 [2/]	
Serious Injuries		66
Aircraft Destroyed		16

Accident Types and Operational Phase

Accidents are classified according to type for statistical purposes. The type of accident describes the immediate circumstances under which the accident occurred but does not indicate the cause thereof. Accident types are shown in Table 10 in relation to the operational phase.

In this regard it is noted that there was one mid-air collision in air carrier operations during 1957 involving a cargo flight and a military aircraft - it was non-fatal. There were 5 cases of collisions occurring on the ground. There were 4 cases of fire occurring in flight, 1 case of engine tearaway and 1 case of propeller failure. In another case a propeller separated following engine failure. The largest number of accidents occurred in the landing phase, with the second largest group in normal flight.

Causal Factors

More than one significant causal factor is usually present in the circumstances that occasion an accident. All significant ones contributing to the occurrence are set forth and treated with equal prominence to insure adequate attention thereto for study and accident prevention purposes. Under this procedure, when more than one factor existed in an accident, a so-called primary cause is not selected to the exclusion of others. The total causal factors

1/ Excludes accident near Daggett, California, 7/25/57, involving suicide.
2/ 4 persons on ground killed when aircraft crashed after take-off; 2 company personnel killed by propeller; 1 crushed under aircraft when gear collapsed.

that existed in the accidents[1/] which occurred in the overall operations of air carriers during 1957 are set forth in the accompanying tables. These are grouped according to broad categories in Table 11, as well as listed in detail in Table 12.

Additionally, the broad causal categories have been reviewed in relation to the number of accidents in which each category entered. This brought out the following:

In 48 of the accidents, pilot causal factors were involved; in 22 of these, this was the sole factor. In 26 of these accidents, other causal factors entered into the picture such as weather (14 cases); airport terrain (4 cases); other personnel (11 cases); etc.

There were 39 accidents in which other personnel were involved--in 15 of these, this was the sole factor; weather was involved in 7 cases; pilot personnel in 11.

Weather was involved in 24 accidents--in 6 cases it was the sole cause; pilot personnel were involved in 14 cases; other personnel in 7 cases.

Landing gear failure was involved in 17 instances--in 11 accidents it was the sole factor.

Airport terrain was involved in 15 accidents--in 3 it was the only causal factor; pilot personnel were involved in 4 cases and other personnel in 4 cases.

Power plant failure of one sort or another occurred in 9 accidents, in 6 of which it was the sole factor.

Equipment and accessories entered in 4 accidents, in 3 cases other than pilot personnel were involved; 1 case of pilot involvement.

Airframe was involved in 1 accident.

1/ Excluding 4 cases in process of investigation and analysis.

TABLE 9

STATISTICAL RECAPITULATION OF TOTAL ACCIDENTS

All Classes of Air Carrier Operations
Revenue and Nonrevenue - 1957

	ACCIDENTS		FATALITIES			SERIOUS INJURIES			Aircraft	Total Aircraft	ACCIDENT RATE PER 1 MILLION MILES		
	Total	Fatal	Crew	Passengers	Others	Crew	Passengers	Others	Destroyed	Miles Flown[a]	Fatal	Nonfatal	Total
CERTIFICATED AIR CARRIERS													
1. Domestic[b]	57[c]	7	5	32[c]	2	9	46	1	8	807,220,000	0.009	0.06	0.07
2. Foreign/Overseas	10	2	8	36	1	2	1	0	1	168,529,000	0.01	0.05	0.06
3. Other[d]	No Accidents									6,843,000			
4. All Cargo Carriers Domestic & Foreign/Overseas	10	1	0	0	4	2	0	2	1	49,703,000	0.02	0.2	0.2
5. Alaskan	29	3	5	4	0	0	2	0	5	15,290,000	0.2	1.7	1.9
NONCERTIFICATED AIR CARRIERS	8[e]	1	2	0	0	1	0	0	1	35,621,832	0.03	0.2	0.2
TOTAL, ALL CARRIERS	113	14	20	72	7	14	49	3	16	1,083,206,832	0.01	0.1	0.1

[a] Revenue and nonrevenue.

[b] Includes territorial.

[c] Excludes accident near Daggett, California, 7/25/57, involving suicide. Also includes a ground collision accident between an aircraft in scheduled domestic operations and one noncertificated air carrier counted as an accident in each category but as one accident in totals.

[d] Resort Airlines - Military Contract only.

[e] Includes a ground collision accident between an aircraft in scheduled domestic operations and a noncertificated air carrier aircraft, counted as an accident in each category but as one accident in totals.

NOTE: Includes propeller accidents to persons.

CAB

TABLE 10

TYPE OF ACCIDENT VS. OPERATIONAL PHASE

Overall Operations – Air Carriers – 1957

TYPE OF ACCIDENT / OPERATIONAL PHASE	GROUND			TAXIING			TAKEOFF				NORMAL FLIGHT						LANDING		
	Starting Engine/s	Idling Engine/s	Other	To Takeoff	From Landing	Other	Run	Initial Climb	Climb to Altitude	Discontinued	En Route Climb	Normal Cruise	En Route Descent	Hovering	Initial Approach	Final Approach	Level-Off	Roll	Go-Around	TOTAL
Ground (water) Loop				1						1										2
Landed Wheels Up							1										11			13
Gear Collapsed				1	2												2			3
Gear Retracted	1			1	1		2										5			10
Hard Landing							2										2			7
Nose Over (inverted)					1											3				3
Undershoot																	2			3
Overshoot															4					4
Collision-Aircraft																	8			8
Both Airborne							1													1
On Ground				4	1															5
Collision-Ground							1				1				1			1		4
Collision-Rising Terrain											2									2
Collision-Objects																				
Trees							2				2				1					5
Airport Hazards					1															1
Other				1	2			1							1		1	1		7
Stall							1				3									4
Fire on Ground			1			1														2
Fire in Flight							2				1	1								4
Airframe-Air											1									1
Engine Tearaway						1							1							2
Turbulence											3	3		1						7
Decompression								1		1	1									3
Propeller Accidents to Persons		2																		2
Propeller Failure							1													1
Other*					1		1				5			1						8
In Process																				4
TOTAL	1	2	1	8	9	1	5	10	2	1	1	19	4	1	2	7	3	31	2	114

*Includes: Accident wherein passenger set off dynamite, Daggett, Calif.; 1 case - Prop broke free account engine seizure; 1 - Cargo door opened; 1 - Engine cowl came off; 1 - Tire blew in wheel well; 1 - Broke through ice; 2 - Evasive maneuver in flight.

CAB

TABLE 11

RECAPITULATION OF CAUSAL FACTORS OF ALL AIR CARRIER ACCIDENTS IN ALL CLASSES OF OPERATIONS - 1957

BROAD CATEGORIES	Number of Causal Factors
PERSONNEL	
Pilot	56
Pilot supervision	8
Subtotal Pilot	64
Other Personnel	
Maintenance - Inspection	18
Airport (Operation - Maintenance)	6
Company	5
Others	19
Subtotal Other Personnel	48
TOTAL PERSONNEL	112
MATERIAL - etc.	
Powerplant	9
Transmission	1
Airframe	2
Landing Gear	17
Equipment & Accessories	4
Weather	28
Airport-Terrain	16
Miscellaneous	2
Subtotal Material etc	79
TOTAL CAUSAL FACTORS 1/	191

1/ 4 accidents in process of investigation analysis, causal factor not determined.

NOTE: The causal factors total is in excess of the number of accidents as more than a single causal factor usually exists in the majority of accidents.

TABLE 12

CAUSAL FACTORS OF ALL AIR CARRIER ACCIDENTS IN ALL CLASSES OF OPERATIONS - 1957
(Scheduled, Noncertificated, and Alaskan)

Causal Factors	
PILOT	
Failed to complete check list prior to starting engines	1
Lost control while taxiing in strong wind	1
Lack of vigilance while taxiing	4
Commenced taxi prior to "all clear" signal	1
Unintentional gear retraction while taxiing	1
Failed to maintain flying speed during takeoff	1
Failed to observe and interpret flight instruments properly during takeoff climb	1
Failed to turn off boost pump in accordance with check list	1
Attempted takeoff with aircraft overloaded for existing conditions	1
Bypassed high altitude airport suitable for emergency landing	1
Excessive elevator trim tab setting during takeoff	1
Failed to maintain flying speed during practice "Abandon approach"	1
Attempted flight through pass in below prescribed weather minimums	1
Low altitude entrance into narrow canyon	1
Failed to gain altitude necessary for safe flight in mountainous terrain	1
Inadequate experience for operation of aircraft in mountainous terrain	1
Inattentive to safety of flight while observing ground object	1
VFR flight in IFR conditions	2
Erroneous enroute position reports	1
Took off VFR into marginal weather contrary to company instructions	1
Conducted flight at an altitude too low to clear ice cap	1
Descended below minimum enroute and assigned altitude	1
Descended too low in area of known unfavorable conditions	1
Descended below glide path and collided with trees	1
Failed to maintain safe altitude in area of known downdrafts	1
Touched down short of runway during VFR approach in fog	1
Touched down short of runway	1
Approach - too high and/or too fast	6
Delayed flareout and failed to use power to check descent	1
Failed to use power to check descent for flareout	1
Allowed engine to cool excessively during glide	1
Selected inadequate landing area	1

Landed mistakenly at wrong airport inadequate for aircraft	1
Prematurely discontinued use of radio navigational aid in marginal weather	1
Lost directional control during landing roll	7
Selected shortest of 2 available runways	1
Precision approach in adverse weather without 2-way GCA communication	1
Landed in adverse conditions although suitable alternate was available	1
Landed while squall line was over airport	1
Failed to avoid flagpole during pull-up (helicopter)	1
Failed to initiate missed approach procedure in time to avoid contact with ground	1

PILOT SUPERVISION

Failed to advise copilot (at controls) that approach lights were no longer visible	1
Failed to brief copilot (at controls) properly prior to attempted landing	1
Copilot started approach too high and too close to approach end of runway	1
Copilot permitted aircraft to descend during takeoff climb	1
Failed to monitor flight path properly during takeoff by inexperienced copilot	1
Copilot descended below normal glide path and touched down short of runway	1
Permitted copilot to continue instrument descent below minimums	1
Failed to instruct copilot properly re altimeter reading during descent	1

OTHER PERSONNEL
MAINTENANCE - INSPECTION

Landing gear downlock mechanism improperly adjusted	1
Bolt not saftied on brake assembly banjo fitting	1
Gear handle not placed in down position prior to release of aircraft for flight	1
Engine idling too fast	1
Fuel line loose at fuel pump connection	1
Oil dilution solenoid valve leaking	1
Inner bronze bearing omitted from downlock mechanism during overhaul	1
Inadequate factory and company overhaul procedures for gear downlock mechanism	1
Inadequate inspection of control cables	1
Brake lining deteriorated	1

Retaining spring clip on door locking pins deformed	1
Engine cowling not properly latched	1
Taper pin improperly secured to shaft	1
Oversize taper pin installed in door locking handle	1
Inadequate inspection of cargo door for security	1
Anti-detonant injection fluid cart mistakenly refilled with deicer fluid	1
Inadequate sealing of engine fire zone	1
Oil sump plug not secured	1

AIRPORT (OPERATION - MAINTENANCE)

Unmarked hazardous area on ice	1
Ditch near runway not marked properly	1
Inadequate ramp lighting	1
Runways not cleared of snow properly	1
Runway lights inoperative	1
Runway drainage inadequate	1

COMPANY

Inadequate transitional crew training	1
Station agent failed to inspect runway for hazardous conditions	1
Inadequate supervision in providing approved weight and balance limitation for aircraft	1
Failed to stress limits in approach technique for pilot training	1
Inadequate supervision of fluid drum storage facilities	1

OTHERS

Control tower and RAPCON: Lack of coordination between RAPCON and control tower resulting in two aircraft being cleared on converging courses	1
Ground traffic under both local and ground control	1
Copilot unintentionally retracted gear instead of locking tail wheel	1
Flight engineer retracted gear prematurely	1
Flight engineer - lack of vigilance in failure to observe loss of hydraulic system fluid	1

Ground signalman - lack of vigilance	1
Ground signalman - lack of vigilance in avoiding rotating propeller	1
"Follow-me" jeep operator - lack of vigilance	1
Truck driver failed to observe landing aircraft	1
Station agent - inadvertently backed power unit and struck by rotating propeller	1
Dispatcher - failed to follow regular scheduling procedures	1
Dispatcher - authorized landing attempt without check of weather details	1
Passenger - failed to heed seat belt sign	1
Passenger - set off dynamite explosion in lavatory	1
Hostess - lack of alertness in assisting aged passenger	1
Hostess - passengers not secured during turbulence	2
Design - Inadequate air flow for cooling of generator	1
Design - Engine emergency electrical systems inadequate	1

POWERPLANT

Fatigue failure of propeller blade	1
Fuel system - Fuel pump thrust washer and lock bar worn excessively	1
Accessories - Generator failed due to inadequate cooling	1
Structure - Thrust bearing failed	1
No. 1 propeller overspeed	1
Propeller "O" ring seal failed	1
Crankshaft failed	1
Propeller - Split ring failed allowing blade to separate from hub assembly	1
Undetermined	1

TRANSMISSION

Hydro-mechanical clutch disengaged from direct drive	1

AIRFRAME

Fuselage skin cracked	1
Fuselage stringers cracked	1

LANDING GEAR

Drag strut attachment fitting failed	1
Main ski axle failed	1
Brakes overheated due to prolonged taxiing	1
Fatigue failure of nose gear piston tube	1
Gear safety locks malfunctioned	1
Nose wheel steering cylinder failed	1
Downlock mechanism malfunctioned due to inadequate maintenance	1
Gear strut failed	1
Drag strut attachment failed in ski equipped gear	1
Nose gear - Fatigue failure drag strut pivot shaft	1
Attachment fitting on ski axle failed	1
Support bracket assembly and attachment fittings failed	1
Gear drive chain failed	1
Right main gear failed to lock down for reasons undetermined	1
Nose wheel oleo strut seized due to inadequate design of lower piston bearing	1
Tail wheel failed to lock for reasons undetermined	1
Wheel locked for reasons undetermined	1

EQUIPMENT & ACCESSORIES

Hydraulic system - Flexible line ruptured	1
Door locking pins vibrated open	1
Two latches on forward passenger compartment door failed	1
Hydraulic system - Hydraulic pressure hose failed	1

Causal Factors (Continued)

WEATHER

Low ceiling	2
Rain	1
Fog	2
Gusty, variable wind	1
Below allowable approach minimums	1
Gusty wind	1
Crosswind	2
Strong, gusty crosswind	1
Wind shift	1
Blowing sand and dust	1
Heavy rain	1
Squall line activity	1
Turbulence	9
Downdraft	2
Snow	1
White-out	1

AIRPORT-TERRAIN

Thin ice	1
Icy and slippery runway	1
Shell ice	1
Rough	1
Soft	1
Slippery runway	2
Wet runway	5
Snow and ice on runway	1
Icy taxiway	2
Submerged log	1

MISCELLANEOUS

Evasive action to avoid midair collision	1
Evasive action to avoid collision with unidentified flying object on apparent collision course	1

PART II

GENERAL AVIATION ACCIDENTS
(Calendar Year 1957)

Only those General Aviation accidents investigated by the Civil Aeronautics Board are dealt with in this report. These include accidents involving (1) fixed-wing aircraft having a certificated gross takeoff weight in excess of 12,500 pounds and (2) helicopters.

THE ACCIDENT PICTURE - 1957

There were 89 accidents in the above-mentioned two categories of operations during the calendar year 1957, of which 15 were fatal.

34 accidents occurred in operation of fixed-wing aircraft - 6 fatal

55 occurred in helicopter operations - 9 fatal

35 persons were fatally injured;

19 crew members

13 passengers

3 others

23 of the fatalities occurred in operation of fixed-wing aircraft

12 fatalities occurred in helicopter operations

23 aircraft were destroyed

The 89 accidents recorded in 1957 represents a 51% increase over the 59 accidents in the preceding year. The fatal accident total of 15 is 66% higher than the 1956 total of 9. The number of fatalities, however, at 35 approximated the 1956 figure of 34.

FIXED-WING AIRCRAFT ACCIDENTS

In this category, 34 accidents occurred in 1957, of which 6 were fatal. There were 23 fatalities, including 3 on the ground caused by a crashing aircraft following midair collision. In addition, 20 serious injuries were involved in these accidents. Nine aircraft were destroyed and 25 were damaged substantially.

One fatal accident involved a midair collision between a DC-6B and a jet F89-J[1/] during factory test operations. Another fatal accident resulted either from a pilot's attempt to avoid a midair collision or because of severe turbulence created by the other aircraft, or a combination of both.

HELICOPTER ACCIDENTS

A total of 55 helicopter accidents occurred in general aviation operations during 1957; of these 9 were fatal. Fatalities numbered 12 and included 7 pilots and 5 passengers. In addition, there were 2 pilot and 2 passenger serious injuries. Three accidents (all non-fatal) occurred in executive operations and 12 (all non-fatal) in aerial crop control activities. The others involved various classes of operation, including test and demonstration.

ACCIDENT RECORD 1953 - 1957

For comparative purposes, the numbers of fixed-wing and helicopter accidents that occurred during 1953-1957 are shown below:

	NUMBER OF ACCIDENTS					
	FIXED-WING		HELICOPTERS		TOTAL	
Year	Total	Fatal	Total	Fatal	Total	Fatal
1953	13	0	16	1	29	1
1954	15	7	32	2	47	9
1955	17	4	34	3	51	7
1956	12	6	47	3	59	9
1957	34	6	55	9	89	15

EXECUTIVE (Corporate) FLYING

Operations under this heading are defined as:

> "Flying done by corporations, companies and other organisations in their own or leased aircraft in connection with the requirements of their enterprises, including the transport of personnel and cargo, not for compensation, and the employment of professional pilots for this purpose."

In 1957 a total of 20 accidents occurred in Executive Flying operations. Seventeen (17) involved fixed-wing aircraft over 12,500 pounds. Two of these were fatal and caused fatality to 8 passengers and 4 pilots. As noted earlier, 3 non-fatal helicopter accidents also occurred in executive operations.

A tabulation follows showing the number of accidents in executive flying that involved fixed-wing aircraft in excess of 12,500 pounds during each year of the 1951-1957 period, together with the hours of exposure:

1/ Figures quoted in this report do not include data relating to military F89-J.

NUMBER OF ACCIDENTS - EXECUTIVE OPERATIONS - FIXED-WING AIRCRAFT

Year	Fatal	Non-fatal	Total	Hours flown
1951	2	11	13	185,000
1952	1	6	7	206,000
1953	0	9	9	265,800
1954	7	6	13	294,210
1955	3	8a/	11a/	312,300*
1956	5	3	8	324,300*
1957	2	15	17	312,660**
	20	58	78	1,900,270

* Estimated
** Preliminary figures based on partial analysis of CAA sample survey of flying time in 1957.
a/ Revised from figures previously published of 9 and 12 respectively.

Rate per 100,000 Hours Flown: The total accident rate per 100 thousand hours flown in Executive aircraft operations in the 7-year period 1951-1957 was 4.1 - the fatal accident rate was 1.05. Compared with these rates, in 1957 the total accident rate was 5.4 per 100 thousand hours flown; the rate for fatal accidents 0.63.

TYPES OF ACCIDENTS - OPERATIONAL PHASE

The type of accident is a classification used to describe the immediate circumstance under which an accident occurs. It does not indicate the cause thereof.

Statistics on accident types in relation to operational phase are shown in Table 14 for fixed-wing aircraft and in Table 15 for helicopter accidents.

CAUSAL FACTORS

More than one significant causal factor is usually present in the circumstances that occasion an accident. All significant ones contributing to the occurrence are set forth and treated with equal prominence to insure adequate attention thereto for study and accident prevention purposes. Under this procedure, when more than one factor existed in an accident, a so-called primary cause is not selected to the exclusion of others.

The total causal factors that existed in the General Aviation Accidents treated in this report are set forth in accompanying tables. Table 17 presents the total number of causal factors in relation to the various broad categories. Table 18 lists the individual detailed factors that entered into fixed-wing aircraft accidents, and Table 19 contains those that applied to the helicopter accidents.

Additionally, the broad causal factor categories have been reviewed in relation to the number of accidents in which each category was found present. This information is presented in Table 16. In using this table, note must be taken that it shows numbers of accidents rather than numbers of causal factors.

TABLE 13

GENERAL AVIATION ACCIDENTS

Involving Fixed-Wing Aircraft in Excess of 12,500 Pounds
Certificated Takeoff Weight and Helicopters
(Calendar Year 1957)

	FIXED-WING			HELICOPTERS			
	Executive Operations	Other Gen. Aviation	Total	Executive Operations	Other Gen. Aviation	Total	GRAND TOTAL
Accidents							
Injury Index							
Fatal	2	4	6	0	9	9	15
Serious	0	2	2	0	2	2	4
Minor	1	1	2	1	18	19	21
None	14	10	24	2	23	25	49
Total	17	17	34	3	52	55	89
Fatalities							
Pilot	2	4	6	0	7	7	13
Copilot	2	1	3	0	0	0	3
Other Crew	0	3	3	0	0	0	3
Passengers	8	0	8	0	5	5	13
Other	0	3	3	0	0	0	3
Total	12	11	23	0	12	12	35
Serious Injuries							
Pilot	0	2	2	0	2	2	4
Copilot	0	2	2	0	0	0	2
Passengers	0	1	1	0	2	2	3
Other	0	15	15	0	0	0	15
Total	0	20	20	0	4	4	24
Aircraft Damage							
Destroyed	3	6	9	0	14	14	23
Substantial	14	11	25	3	38	41	66
Total	17	17	34	3	52	55	89

NOTE: These figures do not include any data relating to military F89-J involved in midair collision.

TABLE 14

TYPE OF ACCIDENT VS. OPERATIONAL PHASE
FIXED-WING AIRCRAFT* ACCIDENTS — 1957

TYPE OF ACCIDENT / OPERATIONAL PHASE →	TAXIING	TAKEOFF			CRUISE	LANDING				TOTAL
	To Takeoff	Run	Initial Climb	Discontinued	Cruise	Initial Approach	Final Approach	Level-Off	Roll	
Ground (water) Loop		1							1	2
Landed Wheels Up			1		1		1		3	6
Gear Collapsed		1							1	2
Gear Retracted	1			1					2	4
Hard Landing								2		2
Overshoot									5	5
Collision-Aircraft										
Both Airborne					1					1
On Ground	1									1
Collision-Ground					1	1		1		3
Collision-Rising Terrain					2					2
Collision-Objects										
Airport Hazards	1									1
Stall			1							1
Fire on Ground									1	1
Fire in Flight					1					1
Lightning					1					1
Parachuted from Aircraft					1					1
Total	3	2	2	1	8	1	1	3	13	34

*Aircraft having a certificated gross takeoff weight in excess of 12,500 pounds.

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TABLE 15

TYPE OF ACCIDENT VS. OPERATIONAL PHASE
HELICOPTER ACCIDENTS — 1957

OPERATIONAL PHASE → / TYPE OF ACCIDENT	GROUND		TAXIING		TAKEOFF		CRUISE	LANDING						
	Idling Rotors	Ground Taxi	Aerial Taxi	Vertical	Running	Climb	Cruise	Approach	Level-Off	Touchdown	Go-Around	Flare Landing	Unknown	TOTAL
Gear Collapsed										2				2
Hard Landing							1	4	4			3		12
Nose Down							1							1
Roll Over	1													1
Tail-Down Landing												1		1
Rotor Struck Ground					1					1				2
Undershoot										1				1
Collision with														
Ground			1				1	1						3
Water							1							1
Collision-Objects														
Wires-Poles		1					5							6
Trees							2				1			3
Other Buildings		1												1
Parked Panel Truck		1												1
Automobile				1										1
High Vegetation				1										1
Ditch						1								1
Cactus								1						1
Stall							3							3
Airframe-Air						2	5						1	7
Undetermined									1					1
Tilted								2						2
Tail Hit Ground								1						1
Main Rotor Hit Tail									1					1
Rolled to Right														1
Total	1	3	1	2	1	3	19	6	8	5	1	4	1	55

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TABLE 16 RELATIONSHIP BETWEEN CAUSAL FACTOR CATEGORIES AND NUMBER OF ACCIDENTS

General Aviation Accidents - 1957

BROAD CATEGORIES OF CAUSAL FACTORS	NO. OF ACCIDENTS IN WHICH EACH CATEGORY WAS INVOLVED	
	Total No. Accidents	No. in Which No Other Category Was Involved 1/
FIXED-WING AIRCRAFT		
Pilot Personnel	22	10
Other than Pilot Personnel	7	-
Power Plant	4	3
Airframe	-	-
Landing Gear	5	2
Equipment and Accessories	2	-
Related Equipment	-	-
Weather	4	2
Airport Terrain	6	-
Miscellaneous	1	-
Undetermined	1	-
HELICOPTERS		
Pilot Personnel	36	28
Other than Pilot Personnel	5	3
Power Plant	2	2
Rotors	1	1
Transmission	1	-
Airframe	2	1
Weather	8	4
Airport-Heliport Terrain	4	1
Miscellaneous	2	1
Undetermined	2	-
Landing Gear	2	2

1/ These figures indicate the number of accidents in which no other causal factors existed than the category shown.

TABLE 17

RECAPITULATION - CAUSAL FACTORS

General Aviation Accidents - 1957

BROAD CATEGORIES	NUMBER OF CAUSAL FACTORS		
	FIXED-WING	HELICOPTERS	TOTAL
PERSONNEL			
Pilot	28	43	71
Maintenance	6	4	10
Airport (Operation-Maintenance)	2	0	2
Other Personnel	3	1	4
Total Personnel Factors	39	48	87
MATERIAL, ETC.			
Power Plant	4	2	6
Transmission	0	1	1
Airframe	0	3	3
Landing Gear	5	2	7
Equipment and Accessories	1	0	1
Weather	4	12	16
Airport-Terrain	8	4	12
Miscellaneous	1[a/]	2[b/]	3
Undetermined	1	2	3
Total Material Factors, etc.	24	28	52
Grand Total	63	76	139

Generally, more than a single causal factor existed in each accident; hence, the causal factor total is in excess of the actual number of accidents.

a/ Turbulence from preceding aircraft.
b/ 1. Pilot blinded by sand on landing approach.
2. Helicopter stolen by persons unknown.

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TABLE 18

DETAILED CAUSAL FACTORS IN FIXED-WING AIRCRAFT* ACCIDENTS
GENERAL AVIATION - 1957

PILOT PERSONNEL	TOTAL
Landed too far down runway	3
Lost directional control during landing	1
Prematurely retracted flaps during landing	1
Landed wheels-up	1
Improper use of flaps on landing approach	1
Failed to apply brakes following touchdown	1
Failed to insure gear was down and locked	1
Failed to notice inoperative gear signal light	1
Lack of vigilance while in traffic pattern	1
Landed on runway too short under existing conditions	2
Lost directional control on takeoff run	1
Selected short runway with gusty crosswind	1
Inadequate preflight inspection failed to detect unsafe gear condition	1
Did not check enroute weather prior to takeoff	1
Used excessive brakes during prolonged taxi	1
Failed to observe other aircraft while taxiing	1
Elevator trim tab not positioned properly prior to takeoff	1
Flew into tree-covered mountainside while attempting to maintain VFR flight in IFR conditions	1
Failed to use available facilities for filing en route IFR flight plan	1
Neither crew observed other aircraft in time to avoid midair collision	1
Failed to correctly position fuel selector valve to full tank	1
Failed to follow prescribed single-engine procedure	1
Failed to switch fuel valve to full tank	1
Lack of experience and adequate ground training in type aircraft	1
Used high octane fuel from open container near uncovered electrical panel to clean hands during flight, resulting in fire	1

* Aircraft having a certificated gross takeoff weight in excess of 12,500 pounds

	TOTAL
MAINTENANCE PERSONNEL	
Mechanic installed incorrect angle fitting in gear hydraulic system	1
Mechanic failed to report work accomplished in accordance with company procedure	1
Fuel gauges not calibrated to give true reading	1
Nose gear taper pin improperly fitted to taper pin holes	1
Landing gear fittings loose	1
Landing gear mechanical latch hook improperly adjusted	1
OTHER PERSONNEL	
Copilot did not check gear indication	1
Company failed to adequately check pilot in type aircraft	1
Company failed to provide proper manual for type of aircraft	1
AIRPORT (Operation and Facilities) PERSONNEL	
Unmarked open trench	1
Tower operator did not alert crew to hazard of unmarked trench	1
POWER PLANT	
Fuel line "T" fitting failed	1
Undetermined	3
LANDING GEAR	
Down lock pin failed	1
Actuating cylinder failed	1
Retracted on landing for undetermined reason	1
Drag strut attach fittings in inaccessible area	1
Failure of nose gear retract torque shaft	1
EQUIPMENT AND ACCESSORIES	
Malfunctioning gear warning light	1

WEATHER	TOTAL
Variable wind with severe gusts	1
Lightning strike	1
Fog - rain	1
Strong gusty crosswind	1
AIRPORT - TERRAIN	
Wet slippery surfaced runway	1
Snow and ice on runway	1
Hidden hazard	1
Soft wet sod	1
Wet runway	1
Runway too short	2
Glare ice	1
MISCELLANEOUS	
Turbulence from preceding aircraft	1
UNDETERMINED	
Loss of control for reasons not determined	1

TABLE 19

DETAILED CAUSAL FACTORS IN HELICOPTER ACCIDENTS
GENERAL AVIATION - 1957

PILOT PERSONNEL	TOTAL
Selected unsuitable landing area	2
High, fast approach resulting in hard landing	1
Delayed applying power for go-around	1
Failed to maintain proper rotor speed on landing approach	1
Flared off too high and landed hard	1
Failed to coordinate cyclic and collective pitch controls and landed hard	1
Misjudged distance to obstruction during landing approach	1
Failed to flare out for landing	1
Landed in area unsuitable under existing wind conditions	1
Failed to level off properly and landed tail low	5
Failed to increase power to control descent	1
Allowed helicopter to settle in from a low altitude	1
Allowed helicopter to lose rotor speed	1
Pilot being checked reduced collective pitch following a bounce landing	1
Allowed a downwind approach	2
Attempted takeoff, heavily loaded helicopter under high altitude conditions	1
Delayed in initiating climb to clear rising terrain	1
Applied excessive collective pitch in early part of takeoff	1
Took off from area necessitating a downwind climb	1
Inadequate pretakeoff check - cooling air shroud was not zippered	1
Selected unsuitable terrain for takeoff	1
Improper inflight planning resulting in fuel exhaustion	2
Conducted flight at an unsafe low altitude	1
Operated in snow-covered area not equipped with skis	1
Misjudged height of powerline during spraying run	2
Failed to observe wires during low altitude flight	4
Lost rotor speed in downwind turn	1
Attempted to maneuver in confined area	1
Inexperienced in type of helicopter involved	2
Taxied too close to parked truck	1
Attempted to operate from rough area with high vegetation	1

	TOTAL
MAINTENANCE PERSONNEL	
Cyclic pitch control improperly assembled	1
Improper rigging causing tail heaviness	1
Incorrect clutch assembly installed	1
Incorrect type tang washer installed on tail rotor out put shaft retaining nut	1
OTHER PERSONNEL	
Passenger unfastened safety belt and his unintentional movement restricted pilot control movement	1
POWER PLANT	
Propeller failed (Rotocopter equipped with pusher propeller)	1
Crankshaft failed due to fatigue fracture	1
TRANSMISSION	
"Form" sprag clutch failed	1
AIRFRAME	
Failure of bolt linking swashplate and arm assembly	1
Undetermined - control failure or malfunction	1
Tail rotor hub fatigue failure	1
LANDING GEAR	
Fitting failed at fuselage attachment	1
Drag strut of main gear assembly failed	1
WEATHER	
Sandstorm	1
Strong gusty winds	3
Gusty wind	2
Downdraft	2
Windshift	2
Haze	1
Vapor trail cloud formed by rotors caused zero visibility	1

AIRPORT-HELIPORT TERRAIN	TOTAL
Unexpected cave-in of snow (due to a covered obstacle under the snow)	1
Crusted snow	1
High altitude	1
Soft sand	1
MISCELLANEOUS	
Helicopter stolen by person/s unknown	1
Pilot blinded by sand on landing approach	1
UNDETERMINED	
Loss of control for reasons undetermined	1
Undetermined	1

- - 0 - -

RESUME OF
U. S. CIVIL AIR CARRIER AND
GENERAL AVIATION AIRCRAFT ACCIDENTS

CALENDAR YEAR 1957

FIXED-WING AIRCRAFT IN EXCESS OF 12,500 POUNDS
CERTIFICATED TAKE-OFF WEIGHT, HELICOPTERS,
AND ALL ALASKAN CERTIFICATED AIR CARRIERS

JUNE 30, 1958

CIVIL AERONAUTICS BOARD
BUREAU OF SAFETY

039

FOREWORD

This report deals with the following classes of aircraft accidents, incident to flight[1/], which occurred during 1957: (1) Air Carrier and (2) General Aviation involving fixed-wing aircraft having a gross certificated takeoff weight in excess of 12,500 pounds, and helicopters. It furnishes a brief description of the facts, conditions, and circumstances covering each accident, and includes two statistical recapitulations.

Effective January 1, 1954, the Civil Aeronautics Board delegated to the Civil Aeronautics Administration the investigating and reporting of accidents involving fixed-wing aircraft of 12,500 pounds and lower certificated takeoff weight, except those used in Alaskan Air Carrier Operations. For information concerning accidents in this category, inquiries should be directed to the CAA.

The term "Noncertificated Carriers" is used in this resume to designate those operators formerly carried under the heading "Irregulars." The heading "Alaskan Operations" includes, in addition to Intra-Alaska operations, the States-Alaska service of Alaskan Carriers.

Public reports have been issued by the Board on a number of the accidents included in this report, and are available upon request. In those cases where a public report has not been released, factual data obtained in the investigation can be released to inquirers at their expense when reproduction of records is involved.

1/ An aircraft accident incident to flight is an occurrence that results in serious or fatal injury to one or more persons, or in substantial damage to any aircraft between the time an engine or engines are started for the purpose of commencing flight until the aircraft comes to rest with all engines stopped for complete or partial deplaning or unloading. Excluded from the provisions of this definition are deaths and injuries to persons on board which result from illness, altercations, and other incidents not directly attributable to flight operations. Whenever serious or fatal injury results from contact with a rotating propeller which is installed on an aircraft, however, it shall be considered an aircraft accident.

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PART I

U. S. AIR CARRIER ACCIDENTS

RECAPITULATION OF U. S. AIR CARRIER ACCIDENTS
(Calendar Year – 1957)

TYPE OF OPERATOR	Total Accidents	Fatal Accidents	Aircraft Damage			Crew Injury			Passenger Injury			Others Injured			Total Aboard	Fire		
			Destroyed	Substantial	Minor/None	Fatal	Serious	Minor/None	Fatal	Serious	Minor/None	Fatal	Serious	Minor		In Air	After Impact	On Ground
Class of Operations																		
A. Scheduled Domestic																		
1. Certificated Passenger Carriers																		
Scheduled Passenger Service	44a/	4a/	4	31	11	2	8	171	31	45	1360	1	0	0	1617	3	5	1
Scheduled Other Revenue	2	0	0	2	0	0	0	5	0	0	0	0	0	0	5	0	1	0
Nonrevenue	10b/	2	3	7	1	3	0	27	0	0	1	1	1	0	31	0	2	0
Nonscheduled Revenue	1	1	1	0	0	0	1	0	1	1	0	0	0	0	3	0	1	0
Military Contract	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Certificated All Cargo Carriers																		
Scheduled Service	5	0	0	5	0	0	0	13	0	0	2	0	0	0	15	1	1	0
Nonrevenue	1	0	0	1	0	0	0	2	0	0	2	0	0	0	4	0	0	0
Military Contract	2	0	0	2	0	0	0	7	0	0	4	0	0	0	11	0	0	0
Subtotal	65	7	8	48	12	5	9	225	32	46	1369	2	1	0	1686	4	10	1
B. Scheduled Foreign/Overseas																		
1. Certificated Passenger Carriers																		
Scheduled Passenger Service	8c/	2c/	1	5	2	8	0	42	36	1	331	1	0	0	418	0	0	1
Scheduled Other Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nonrevenue	2	0	0	2	0	0	2	9	0	0	0	0	0	0	11	0	1	0
Nonscheduled Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Military Contract	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Certificated All Cargo Carriers																		
Scheduled Service	2	1	1	1	0	0	2	5	0	0	2	4	2	0	9	0	1	0
Nonrevenue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Military Contract	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	12	3	2	8	2	8	4	56	36	1	333	5	2	0	438	0	2	1
C. Noncertificated Air Carriers																		
Passenger Service	2b/	0	0	1	1	0	0	12	0	0	136	0	0	0	148	0	0	0
Other Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nonrevenue	2	0	0	2	0	0	0	11	0	0	2	0	0	0	13	0	0	0
Military Contract	4	1	1	3	0	2	1	9	0	0	0	0	0	0	12	0	2	0
Subtotal	8	1	1	6	1	2	1	32	0	0	138	0	0	0	173	0	2	0
D. Alaskan																		
Passenger Service	7	1	2	5	0	3	0	10	2	0	45	0	0	0	60	0	1	0
Other Revenue Operations	6	0	0	6	0	0	0	6	0	0	1	0	0	0	7	0	0	0
Nonrevenue Operations	4	0	0	4	0	0	0	7	0	0	2	0	0	0	9	0	0	0
Nonscheduled Operations	12	2	3	9	0	2	0	12	2	2	23	0	0	0	41	0	0	2
Subtotal	29	3	5	24	0	5	0	35	4	2	71	0	0	0	117	0	1	2
TOTAL – ALL CARRIERS																		
Passenger Service	61	7	7	42	14	13	8	233	69	46	1872	2	0	0	2243	3	6	2
Other Revenue Operations	15	1	1	14	0	0	2	29	0	0	5	4	2	0	36	1	3	0
Nonrevenue Operations	19	2	3	16	1	3	2	56	0	0	7	1	1	0	68	0	3	0
Nonscheduled Operations	13	3	4	9	0	2	1	12	3	3	23	0	0	0	44	0	1	2
Military Contract	6	1	1	5	0	2	1	16	0	0	4	0	0	0	23	0	2	0
GRAND TOTAL	113	14	16	86	15	20	14	348	72	49	1911	7	3	0	2414	4	15	4

a/ Includes 1 fatal propeller accident to person on ground.
b/ Includes ground collision accident with noncertificated air carrier. Counted as one accident in grand total.
c/ Includes 1 fatal propeller accident to person on ground.

NOTE: Excludes fatal accident near Daggett, California 7/25/57 involving suicide.
Totals for aircraft damage to air carrier aircraft exceed actual number of accidents because of collisions between two aircraft.

0144

SCHEDULED DOMESTIC OPERATIONS
Certificated Passenger Carriers

Time of Accident	Date	Location	Airline	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury								
								Crew			Passengers			Others		
								F	S	M/N	F	S	M/N	F	S	M
Scheduled Passenger Service																
0001 CST	1/6/57	Tulsa, Oklahoma	American	CV-240	Destroyed	None	10	0	3	0	1	3	3			
The weather was rapidly deteriorating as flight was making an instrument approach which was continued below the company's approved minimums. The aircraft collided with the ground approximately three and one-half miles from the runway.																
1207 EST	1/16/57	Pittsburgh, Pa.	Capital	DC-3	Substantial	None	23	0	0	3	0	0	20			
			TWA	L-749	Substantial		43	0	0	5	0	0	38			
As the aircraft approached the intersection of two taxiways, the DC-3 crew observed the Lockheed to the right. Braking was ineffective due to ice on the strip and the aircraft collided as the DC-3 turned left.																
2031 CST	1/16/57	Louisville, Ky.	TWA	L-749	Substantial	None	46	0	0	6	0	0	40			
The gear was extended for landing but the crew was unable to get a "down-and-locked indication" on the left gear. The approach was discontinued and several emergency gear extensions were made in an unsuccessful attempt to get a green light on the left gear. When the gear appeared fully extended a landing was made. The aircraft was almost stopped when this gear retracted.																
2315 EST	1/25/57	Fort Eustis, Va.	National	CV-340	Substantial	None	42	0	0	3	0	0	39			
On an IFR flight plan, the flight had received several vectors from radar control to the Newport News ILS outer marker. However, as it established visual contact and observed a lighted runway to the left, the flight plan was cancelled and an approach made. As touchdown was made, the pilot realized he had landed at the wrong airport. The aircraft could not be brought to a stop on the short, slippery runway and it ran off the end, stopping at the base of a 15-foot embankment in soft, muddy ground.																

CAB 57

Time of Accident	Date	Location	Airline	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury: Crew F	Crew S	Crew M/N	Passengers F	Passengers S	Passengers M/N	Others F	Others S	Others M
Scheduled Passenger Service (Cont'd)																
1802 EST	2/1/57	Rikers Island, N. Y.	Northeast	DC-6A	Destroyed	After Impact	101	0	0	6	20	25	50			
The aircraft made a left, descending turn of approximately 119 degrees immediately after takeoff into instrument weather conditions. The captain believed the flight normal until the copilot called out his observation of the ground an instant before impact. The aircraft struck the ground in a descending, slightly left wing low attitude, skidded for approximately 1,500 feet and burned.																
0402 CST	2/7/57	Jackson, Miss.	Delta	L-049	Substantial	None	39	0	0	5	0	0	34			
During an ILS approach to the airport at Shreveport, La., the captain took over control from the copilot and started a missed-approach procedure, but not in sufficient time to prevent the aircraft from colliding with the ground. A pull-up was made but the left gear could not be retracted. The flight returned to its takeoff point at Jackson and landed. During the landing roll the gear retracted.																
1530 CST	2/8/57	Louisville, Ky.	Eastern	L-1049	None	None	28	0	0	5	0	1	22			
The flight encountered sudden, unexpected severe turbulence. The cabin attendant and several passengers were injured as a result of being thrown about in their seats.																
1127 CST	3/5/57	Nr. Memphis, Tenn.	American	DC-7	Substantial	None	46	0	0	5	0	0	41			
While cruising at 14,000 feet, No. 1 engine and propeller oversped. A climb was entered in an attempt to quickly reduce airspeed and shortly thereafter the propeller broke free, striking the aircraft cabin and causing explosive decompression. An immediate descent was initiated and a landing made at Memphis without further incident.																
1138 CST	3/10/57	Louisville, Ky.	Eastern	M-404	Destroyed	After Impact	34	0	0	3	0	1	30			
The copilot was making the approach and turned into final high and close, in relation to the approach end of the runway. At an altitude of 1000-1500 feet above the runway, the captain took over control, nosed the aircraft down sharply, and continued a steep, power-off approach. As power was not applied the flareout was ineffective because of the low airspeed, resulting in an excessively high rate of sink at instant of touchdown. The hard landing imposed loads beyond design strength resulting in failure of the wing structure. The left wing separated inboard of the left engine nacelle and the remainder of the aircraft rolled to an inverted position. A small fire in the right engine was quickly extinguished.																

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Time of Accident	Date	Location	Airline	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury								
								Crew			Passengers			Others		
								F	S	M/N	F	S	M/N	F	S	M
Scheduled Passenger Service (Cont'd)																
0736 CST	3/26/57	Des Moines, Iowa	United	CV-340	Substantial	None	16	0	0	3	0	0	13			
The crew had been advised that snow and ice on the runways caused fair to poor braking action. Following a normal touchdown in the center of the runway, the right gear rolled into drifted snow, and a yaw to the right occurred. Propellers were in reverse and the pilot increased power on the left engine in an unsuccessful attempt to regain directional control. The left propeller struck a high windrow of snow, fracturing the engine nose intermediate case, and the assembly separated from the aircraft.																
0153 EST	4/1/57	Mobile, Ala.	Capital	Viscount 745D	Substantial	None	46	0	0	3	0	0	43			
The approach was made in rainy, turbulent conditions. Touchdown in a left skid was effected half-way down the runway. The aircraft tended to veer right, however, control was maintained without difficulty and flight taxied into the ramp. Inspection disclosed Nos. 1 and 2 propellers in the feathered position and damaged from contact with the runway.																
1611 MST	4/7/57	El Paso, Texas	American	DC-6	Substantial	None	52	0	0	5	0	0	47			
The approach was made in a strong gusty wind with blowing dust and sand. A sudden windshift, with reduced visibility, occurred as the aircraft was flared for landing. Power was applied for a go-around. This however, was aborted when a lowered wing failed to respond to controls and the aircraft touched down, right gear first. The nose gear retracted and the aircraft rolled to a stop with the nose in contact with the runway.																
2010 CST	4/8/57	Birmingham, Ala.	Delta	DC-7	Minor	None	28	0	0	5	0	0	23			
				Parked Viscount	Substantial											
As the DC-7 was being taxied out to takeoff position, its left wing tip collided with parked Viscount.																

CAB

Time of Accident	Date	Location	Airline	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury: Crew F	Crew S	Crew M/N	Passengers F	Passengers S	Passengers M/N	Others F	Others S	Others M
Scheduled Passenger Service (Cont'd)																
2101-2200 EST	4/8/57	Nr. Norfolk, Va.,	Capital	Viscount 745D	Substantial	None	20	0	0	4	0	0	16			
Shortly after departing Norfolk, the flight was advised of a line of precipitation across its path. Speed had been reduced when a 4-5 minute period of turbulence, hail and rain was encountered, and altitude varied from 8,000 - 10,300 feet. Once clear of the area, the flight continued to Washington without further incident. Subsequent inspection revealed damage to the stabilizers and elevator.																
1525 EST	4/18/57	Pittsburgh, Pa.	Capital	DC-4	Substantial	After Impact	55	0	0	4	0	0	51			
The copilot discontinued a simulated ILS approach at the middle marker and established visual reference with the runway. The captain observed the rate of descent to be excessive and immediately applied power to regain the lost altitude. Before recovery was complete the right main gear struck the embankment short of and below the edge of the runway. Full power was applied and a go-around made. Severe buffeting was experienced as the flight circled for another approach and fire occurred in No. 3 engine area. The flight landed safely and ground fire-fighting equipment extinguished the fire.																
2340 CST	4/19/57	Dallas, Texas	Braniff	C7-340	Substantial	None	42	0	0	3	0	0	39			
As the gear was retracted following takeoff, the nose gear transit light remained on. A check by ground observers showed that the nose gear was not in normal position. The flight then returned to Dallas and made a landing, the nose gear retracting aft under the fuselage.																
1344 MST	4/21/57	Nr. Phoenix, Ariz.	Frontier	DC-3	Substantial	None	26	0	0	3	0	0	23			
The flight departed Prescott, enroute to Phoenix, flying VFR. Deteriorating weather conditions were encountered over mountainous terrain, however, and approximately 18 minutes after departure from Prescott an IFR clearance was requested. The flight was operated in solid instrument conditions for several minutes prior to the accident which occurred at about the time the IFR clearance was received. The aircraft struck a mountain ridge at an elevation of 4,600 feet resulting in considerable damage to the outer portion of the left wing. Control of the aircraft was maintained and the flight landed at Phoenix without further incident.																

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Time of Accident	Date	Location	Airline	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury								
								Crew			Passengers			Others		
								F	S	M/N	F	S	M/N	F	S	M
Scheduled Passenger Service (Cont'd)																
2158 EST	5/1/57	Muskegon, Mich.	Capital	DC-3	Substantial	None	21	0	0	3	0	0	18			
While in the final part of the roll-out, during a crosswind landing, the aircraft went off the runway in a sharp left turn, slid sideways into soft sand, and sheared its left gear.																
0958 EDT	5/2./57	Branchville, N. J.	Capital	Viscount 745D	Substantial	None	37	0	0	3	0	0	34			
The lower forward cargo door separated from the aircraft in flight resulting in explosive decompression. No. 3 propellar was damaged when struck by baggage which had fallen from the compartment and severe vibration resulted. The propeller was feathered and flight returned to LaGuardia, landing without further incident.																
1713 MST	6/1/57	Salt Lake City, Utah	Frontier	DC-3	Minor	None	9	0	0	2	0	0	7			
				Cessna 182A	Substantial		1	0	0	1						
The DC-3 had been cleared to follow the Cessna for taxi to takeoff area. As the latter was stopped at the run-up, it was struck by the DC-3.																
0325 EST	6/8/57	Norfolk, Va.	Eastern	DC-7B	Substantial	In Air	77	0	0	5	0	0	72			
At 19,000 feet, No. 1 propeller oversped and engine fire occurred. All attempts to feather the propeller were unsuccessful and the captain ordered the engine frozen. CO_2 was discharged, but the fire continued to burn. It was extinguished by ground fire-fighting equipment following an unscheduled landing at Norfolk.																
2350 CST	6/23/57	Grand Forks, N. D.	North Central	DC-3	Substantial	None	10	0	0	3	0	0	7			
The aircraft was on final approach with landing lights on. While crossing a highway about 100 feet from the head of the runway, the right gear struck a passing tractor-trailer truck. The flight returned to Minneapolis where a wheels-up landing was made.																

049

Time of Accident	Date	Location	Airline	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury								
								Crew			Passengers			Others		
								F	S	M/N	F	S	M/N	F	S	M
Scheduled Passenger Service (Cont'd)																
0133 EST	7/3/57	Atlanta, Ga.	Capital	Viscount 745D	Substantial	None	43	0	0	3	0	0	40			
The aircraft veered off the runway, striking runway lights, and damaging the propellers while landing.																
0930 EDT	7/13/57	Williamsport, Pa.	United	DC-6B	None	None	24	0	1	4	0	0	19			
Airborne radar was utilized by the crew to circumvent thunderstorms enroute. Upon entering smooth air, and with the radar screen clear of any indication of storm activity, the seat belt sign was turned off. Shortly thereafter, unexpected sharp gusts were encountered, a stewardess was thrown into the aisle sustaining a fractured ankle.																
0329 CST	7/17/57	Nr. El Paso, Tex.	American	DC-6	None	None	85	0	0	5	0	1	79			
Another aircraft was observed on an apparent collision course and the captain initiated an evasive maneuver. Several passengers were thrown from their seats. An unscheduled landing was made at El Paso without further incident.																
0337 PDT	7/25/57	Daggett, Calif.	Western	CV-240	Substantial	None	16	0	0	3	1	0	12			
While cruising at an altitude of 10,000 feet, with cabin pressurized to 4,000 ft., an explosion occurred in the lavatory followed by decompression. A large jagged hole was torn in the fuselage through which a passenger, who had exploded a charge of dynamite, was lost. The flight made a safe, unscheduled landing at George Air Force Base.																
2059 EST	7/28/57	Ypsilanti, Mich.	Northwest	B-377	Substantial	On Ground	21	0	0	5	0	0	16			
A fire occurred in the right wheel area as the engines were being run up preparatory to takeoff. CO_2 was discharged into No. 3 nacelle and as the airport emergency equipment arrived the fire was extinguished. Hydraulic fluid leaking in the brake assembly had ignited from the engine exhaust on an overheated brake.																

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Time of Accident	Date	Location	Airline	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury								
								Crew			Passengers			Others		
								F	S	M/N	F	S	M/N	F	S	M
Scheduled Passenger Service (Cont'd)																
1545 EDT	7/28/57	Enroute Norfolk to Washington	Capital	Viscount	None	None	47	0	1	2	0	0	44			
Unexpected severe turbulence was encountered, throwing the stewardess to the floor, fracturing her forearm.																
1640 EST	8/3/57	New York, N. Y. (LaGuardia)	Trans World	L-749A	Substantial	In Air	16	0	0	6	0	0	10			
Immediately after takeoff, fire warning for No. 2 engine occurred. The propeller was feathered and CO_2 discharged and fire warning ceased. Flight returned to the airport and landed without further incident. Fire was confined to No. 2 engine assembly and nacelle.																
0318 MST	8/6/57	Salt Lake City, Utah	Western	DC-6B	Minor	None	41	0	0	4	0	0	37	1	0	0
As the Station Agent was removing the electrical energizer from its position under the aircraft, he inadvertently put it into reverse and moved into the arc of No. 2 propeller and was struck.																
1035 EST	8/30/57	Boston, Mass.	Northeast	C-46	Substantial	In Air	36	0	0	3	0	0	33			
The flight was holding at intersection, awaiting descent clearance, when fire occurred in the left engine. A rapid descent was made, a single engine landing was effected without incident and the fire was extinguished by ground fire equipment.																
1113 CST	8/31/57	Nashville, Tenn.	American	DC-6	None	None	34	0	0	5	0	1	28			
A passenger left her seat after the seat belt sign had been turned on. She fell in the aisle when turbulent conditions were encountered, injuring her ankle.																

CS-1

Time of Accident	Date	Location	Airline	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury: Crew F	Crew S	Crew M/N	Passengers F	Passengers S	Passengers M/N	Others F	Others S	Others M
Scheduled Passenger Service (Cont'd)																
1730 MST	9/13/57	Denver, Colo.	Western	DC-3	Substantial	None	20	0	0	3	0	0	17			
While taxiing in to the gate, the right wing struck a truck being driven across the ramp. Visibility was restricted in rain, fog and near darkness.																
1750 EST	9/13/57	New York, N. Y.	Trans World	L-049	Substantial	None	85	0	0	5	0	0	80			
The macadam runway was wet and slippery and braking action was ineffective. The pilot attempted to turn into the paved warm-up area, but the aircraft slid off the runway, the left wing striking a windsock supporting pole.																
2046 EST	9/15/57	New Bedford, Mass.	Northeast	DC-3	Destroyed	After Impact	24	2	1	0	10	11	0			
The flight was cleared for an ILS approach due to low ceiling and reduced visibility in fog. The crew failed to adhere to the prescribed ILS approach procedure and the aircraft struck trees to the right of and below the glide path.																
1211 EST	10/2/57	Charlottesville, Va.	Piedmont	DC-3	Substantial	None	17	0	0	3	0	0	14			
Flight was taxiing in to the ramp when both main gears suddenly retracted. Later examination and tests failed to disclose any malfunction in the landing gear, its safety latch mechanisms or the warning systems.																
1739 EST	10/3/57	Syracuse, N. Y.	Mohawk	CV-240	Substantial	None	38	0	0	3	0	0	35			
Loss of nose wheel steering was experienced as aircraft was being taxied out for takeoff. It swerved from the taxiway into a ditch before the emergency air-brake could be applied. Loss of hydraulic pressure was due to failure of the nose wheel steering unit.																
1941 CST	10/7/57	Manhattan, Kansas	Continental	DC-3	Substantial	None	11	0	0	3	0	0	8			
A considerable amount of water on the runway made braking action ineffective during landing. A groundloop was attempted but the aircraft veered into soft ground and ran into a deep drainage ditch to the right of the runway.																
1955 PST	10/8/57	Reno, Nevada	Western	DC-6B	None	None	13	0	0	5	0	1	7			
A passenger failed to heed the seat belt sign, or the announcement by captain and cabin attendant to fasten his seat belt. As a result he was thrown to the floor, when unexpected turbulence was encountered, and received a broken bone.																

052

Time of Accident	Date	Location	Airline	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury								
								Crew			Passengers			Others		
								F	S	M/N	F	S	M/N	F	S	M
Scheduled Passenger Service (Cont'd)																
2108 EST	10/17/57	Pittsburgh, Pa.	Northwest	DC-6B	Substantial	None	34	0	0	4	0	0	30			
An ILS approach was being made. Shortly after passing the middle marker, the center-line approach lights and then the runway lights became visible, and the approach was continued visually. The aircraft touched down short of the runway with the gear striking the ground below the level of the overrun area. The gear was sheared and the aircraft slid down the runway on its fuselage.																
0952 PST	10/31/57	Los Angeles, Calif.	United	DC-7	Substantial	None	16	0	0	5	0	0	11			
The right main gear failed to extend and lock. The crew used all known emergency procedures in an unsuccessful attempt to lock the gear down. After all precautionary safety measures were taken by both ground and flight personnel, the aircraft was landed with the wheels retracted.																
1520 EST	11/14/57	Massena, N. Y.	Eastern	M-404	Substantial	After Impact	5	0	0	3	0	0	2			
In the traffic pattern, the copilot at the controls, an over-riding wind caused the aircraft to drift closer to the airport on the base leg, resulting in a higher and closer than normal position on final. The captain took over control and made a power-off approach, descending in a steep nose-down attitude at a high rate of descent. This could not be arrested sufficiently before touchdown and the runway was contacted with great force, the right engine separating from the aircraft. Following rebound, the runway was again contacted with great force, and the aircraft then rolled off the runway to the right, the left powerplant falling free.																
Between 1615 & 1638 PST	11/21/57	Los Angeles, Calif.	American	DC-7	None	None	39	0	1	4	0	0	34			
Severe turbulence was encountered while letting down at reduced speed. One of the cabin attendants was thrown to the floor and received serious leg injuries.																
2151 PST	11/21/57	Ontario, Calif.	Western	DC-6B	Minor	None	34	0	1	4	0	1	28			
While letting down and at an altitude of between 8,000 and 9,000 feet, unexpected severe turbulence was encountered. The seat belt sign had been on for some time previous to this. The two cabin attendants and several passengers had not remained seated with belts fastened and were injured in varying degrees when thrown about.																

Time of Accident	Date	Location	Airline	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury: Crew F	Crew S	Crew M/N	Passengers F	Passengers S	Passengers M/N	Others F	Others S	Others M
Scheduled Passenger Service (Cont'd)																
	12/19/57	St. Louis, Mo.	Trans World	L-049	Substantial		83	0	0	5	0	0	78			
During the landing roll, a groundloop to the left occurred. The aircraft left the runway, right main gear collapsing. (Preliminary)																
Scheduled Other Revenue Service																
	8/21/57	Los Angeles, Calif.	American	DC-6A	Substantial		3	0	0	3						
On the takeoff, #3 propeller separated and cut through the bottom of the fuselage, severing all electrical wiring and hydraulic lines in that area. The aircraft and engines became uncontrollable. The crew evacuated and the plane rotated on the right main gear for approximately 30 minutes. (Preliminary)																
0403 CST	8/29/57	Milwaukee, Wisc.	Northwest	DC-4	Substantial	After Impact	2	0	0	2						
The pilot was unable to stop the aircraft on the wet runway and turned off into a sod area for better braking action. The aircraft struck a ditch and swerved sharply. A fire occurred underneath its nose but was extinguished by CO_2.																
Nonrevenue Operations																
0825 MST	2/28/57	Denver, Colo.	United	DC-6B	Minor	None	4	0	0	4				0	1	0
The pilot mistook some movement on the ground for an all clear salute and released the brakes. As the aircraft moved forward, one of the ground attendants was caught between the nose gear and a ground power unit.																

CAB

Time of Accident	Date	Location	Airline	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury: Crew F	Crew S	Crew M/N	Passengers F	Passengers S	Passengers M/N	Others F	Others S	Others M
Nonrevenue Operations (Cont'd)																
1738 CST	5/19/57	Kansas City, Mo.	Trans World	M-404	Substantial	None	2	0	0	2						
The left engine speed ring had not been properly fastened and the top segment separated in flight, striking the empennage. The propeller was feathered and, on the landing, the two remaining segments of the ring fell off on the runway.																
2313 CST	6/5/57	Chicago, Ill (Midway)	Capital	DC-3	Substantial	None	3	0	0	2	0	0	1			
			Currey Air Transport	DC-4	Minor		79	0	0	5	0	0	74			
The DC-3 was taxiing in under "Local Traffic" control and the DC-4 was taxiing out to the takeoff area under "Ground" control. The left wing of the former was struck by the latter's No. 4 propeller.																
0750 EST	6/22/57	Clarksburg, Md.	Capital	DC-3	Destroyed	None	3	3	0	0						
It was determined that the crew was executing the abandon-approach phase of a maneuver of the flight training curriculum referred to as the "canyon-approach" at an altitude of approximately 2,500 feet. The aircraft was inadvertently stalled during this maneuver and entered into a spin at an altitude too low to effect recovery.																
2330 EST	6/28/57	Miami, Fla.	Eastern	DC-7B	Destroyed	After	4	0	0	4						
			Eastern Parked	L-1049	Destroyed	Impact	0	0	0	0						
The DC-7 was being taxied to the gate and when the pilot attempted to turn on the ramp nose wheel steering was ineffective. Brakes were applied with no resulting braking action. Propellers were immediately reversed but before the pilot could actuate the emergency air brake valve the right wing struck the empennage of the parked L-1049. The DC-7 swung to the right and the windshield struck the left wing of the L-1049 rupturing a fuel tank. Fuel spilled from the ruptured tank and ignited; both aircraft burned.																

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Time of Accident	Date	Location	Airline	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury: Crew F	Crew S	Crew M/N	Passengers F	Passengers S	Passengers M/N	Others F	Others S	Others M
Nonrevenue Operations (Cont'd)																
2335 EST	8/30/57	New York, N. Y. (LaGuardia)	New York Airways	S-58C	Substantial	After Impact	2	0	0	2						
Following an engine change, successful ground and hovering checks were completed and the helicopter was being hovered at approximately 5 feet to check throttle synchronization when the engine overspeed. The pilot increased collective pitch and the helicopter touched down moderately hard. The engine dropped to the ground almost completely detached from the helicopter. A small engine fire started but was quickly extinguished.																
1510 CST	10/6/57	Kansas City, Mo.	Trans World	L-1049H	Substantial	None	3	0	0	3						
No. 3 tire blew out in the wheel well shortly after the gear was retracted following takeoff. Further check showed the right gear to be down and locked. Emergency gear extension was accomplished and the flight landed using emergency brakes which brought the aircraft to a stop without further incident. One area on the tread had been worn too thin to hold pressure.																
0630 EST	11/1/57	New York, N. Y. (LaGuardia)	Trans World	L-749	Substantial	None	4	0	0	4				1	0	0
The aircraft had been jacked up for a maintenance cycling check to determine the cause of reported gear vibration. The gear handle had been placed in the up position during reassembly of the gear struts and was inadvertently left in this position as the aircraft was towed to the line in preparation for a test hop. The flight crew did not notice the position of the gear handle and had stopped reading the "Before starting engine" checklist to start the engines prior to reaching that item. As No. 3 engine was started the gear suddenly retracted and the aircraft settled in pinning a fire guard underneath the fuselage.																
	11/12/57	Seattle, Wash.	Northwest	Boeing	Substantial		4	0	0	4						
Cowl flap from number 2 engine broke away, striking left stabilizer leading edge. A normal landing was made. (Preliminary)																

CAB

Time of Accident	Date	Location	Airline	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury: Crew F	Crew S	Crew M/N	Passengers F	Passengers S	Passengers M/N	Others F	Others S	Others M
Nonrevenue Operations (Cont'd)																
1433 EST	11/27/57	Atlanta, Ga.	Delta	DC-7B	Substantial	None	2	0	0	2						
The nose wheel was off center and as it contacted the runway after touchdown the aircraft started veering to the left. The crew was unable to move the nose steering wheel or to regain directional control with brakes and power. The aircraft veered off the runway and the nose gear collapsed.																
Nonscheduled Revenue Operations																
1232 EST	10/19/57	Farmingdale, L. I., N. Y.	New York Airways	Bell 47H	Destroyed	After Impa.	3	0	1	0	1	1	0			
Pilot accepted a wave-off following a premature approach to a designated landing area. During the climb out the main rotor blades struck a flagpole and the helicopter pitched down sharply, struck the ground on the bow of the floats and toppled to the left. A small fire was quickly extinguished by persons nearby.																

Time of Accident	Date	Location	Airline	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury: Crew F	Crew S	Crew M/N	Passengers F	Passengers S	Passengers M/N	Others F	Others S	Others M
Scheduled Service																
1536 CST	1/7/57	San Francisco, Calif.	Slick	C-46	Substantial	After Impact	2	0	0	2						
The runway was in sight when the flight was over the middle marker and pilot discontinued his ILS approach and continued VFR. As the runway became obscured in fog the pilot turned to the then visible parallel runway, but this too disappeared in fog and visual contact was lost. Power was applied for a go-around but at that instant the aircraft touched down hard and bounced with the gear striking a dyke. Control was maintained and the pilot circled for a visual approach to another runway. The damaged gear collapsed and the aircraft skidded to a stop on the belly. Fires which started in both engine nacelles were quickly extinguished by ground emergency crews.															
0815 CST	3/5/57	Chicago, Ill. (Midway)	Flying Tiger	DC-6A	Substantial	None	5	0	0	3	0	0	2			
On the takeoff run, the flight engineer actuated the landing gear selector to the "up" position, without orders from the pilot, and the nose gear retracted. The takeoff was aborted and the aircraft slid to a stop with its nose on the runway.																
0902 EST	5/1/57	Ypsilanti, Mich.	Slick	C-46	Substantial	None	4	0	0	4						
The pilot noted a tail heaviness during takeoff and rolled in forward trim on the elevator tab. As speed increased a fore and aft oscillation occurred which did not cease when elevator tab was rolled back. Power was cut on both engines and an attempt was made to stop the aircraft. The right wheel locked and the aircraft groundlooped off the runway.																

057

Time of Accident	Date	Location	Airline	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury: Crew F	Crew S	Crew M/N	Passengers F	Passengers S	Passengers M/N	Others F	Others S	Others M
Scheduled Service (Cont'd)																
0525 EST	12/5/57	Tampa, Florida	Riddle	DC-4	Substantial	None	2	0	0	2						
The flight was descending to land when the main cargo door opened and separated. The door wrapped around the leading edge of the left stabilizer and the aircraft went into a steep dive requiring the combined efforts of the crew to recover and maintain control. The approach was continued and a landing effected without further incident.																
1515 EST	12/20/57	Miami, Florida	Riddle	C-46R	Substantial	In Air	2	0	0	2						
Shortly after second power reduction following takeoff, the fire warning lights for the right engine came on and smoke and flames were observed within the cowling. The propeller was feathered, and fire extinguisher switches were actuated, and the flight returned to the airport for landing. The fire continued to burn during the approach and landing, and was extinguished by ground fire-fighting equipment.																
Nonrevenue Operations																
1610 CST	11/1/57	New Orleans, La.	Slick	DC-4-26B	Substantial	None	4	0	0	2	0	0	2			
The hydraulic pressure down line ruptured and the gear collapsed as the aircraft taxied in from landing.																
Military Contract Operations																
	4/10/57	Oklahoma City, Okla.	American Air Export & Import Co.	C-46	Substantial		2	0	0	2						
			Air Force	B-25			2	0	0	2						
Collided with Air Force B-35 at the convergence of runway 17 and 12, while taking off. (Preliminary)																
1051 EDT	6/21/57	New York, N. Y. (International)	Flying Tiger	DC-6A	Substantial	None	9	0	0	5	0	0	4			
Shortly after takeoff, a substantial power loss occurred on all four engines. The pilot was unable to maintain altitude for a return to the airport and made a wheels-up landing on a sand bar in the bay. Investigation disclosed that a mechanic had mistakenly replenished the ADI supply cart with de-icing fluid and the contaminated ADI fluid caused loss of power during a wet takeoff.																

CAB 57

SCHEDULED U. S. FOREIGN/OVERSEAS OPERATIONS

Certificated Passenger Carriers

Time of Accident	Date	Location	Airline	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury								
								Crew			Passengers			Others		
								F	S	M/N	F	S	M/N	F	S	M
Scheduled Passenger Service																
2250 CST	1/18/57	New Orleans, La.	Delta	DC-7	Substantial	None	74	0	0	6	0	0	68			
A mild explosive cabin decompression occurred at an altitude of 17,500 feet. The cabin depressurized as the flight made a rapid descent and returned to New Orleans, landing without further incident. Inspection revealed fuselage cracks in the area of the forward crew entrance and cargo doors.																
0430 AST	3/9/57	Enroute N. Y. to San Juan, P. R.	PAWA	DC-6A	None	None	50	0	0	5	0	1	44			
While at an altitude of 19,000 feet, the pilot observed an unidentified flying object that appeared to be on a collision course. He immediately initiated evasive action and a number of passengers were injured when thrown from their seats.																
2102 EDT	5/20/57	New York, N. Y. (International)	PAWA	DC-7B	None	None	56	0	0	6	0	0	50	1	0	0
The aircraft was parked and a line crew mechanic, who was inserting gear landing pins, walked into a revolving propeller.																
2132 EDT	8/16/57	Newark, N. J.	EAL	DC-4	Substantial	None	37	0	0	5	0	0	32			
The aircraft had been taxied to the warm-up block and as the parking brakes were applied prior to engine run-up the nose gear suddenly collapsed. The nose gear piston tube had failed circumferentially above the nose wheel fork adjacent to the radius.																

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Time of Accident	Date	Location	Airline	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury								
								Crew			Passengers			Others		
								F	S	M/N	F	S	M/N	F	S	M
Scheduled Passenger Service (Cont'd)																
0231 CST	11/8/57	New Orleans, La.	Delta	DC-7	Substantial	None	66	0	0	5	0	0	61			
A squall line with heavy rains and strong gusty winds was passing over the airport during the landing approach. Shortly after touchdown, strong side gusts were encountered and the aircraft veered from the runway into soft ground. The nose wheel was turned as it contacted the edge of a bisecting runway, and the nose gear was sheared. The wind was 25-35 knots.																
	11/8/57	Enroute San Francisco - Honolulu	PAWA	B-377	Destroyed		44	8	0	0	36	0	0			
Crashed into Pacific Ocean under unknown circumstances. (Preliminary)																
1709 EST	12/12/57	New York, N. Y.	PAWA	B-377	Substantial	Fire on Ground	41	0	0	10	0	0	31			
The flight was taxiing back to the ramp after having aborted two takeoffs due to loss of power. The brakes overheated during the prolonged taxi causing the expander tubes to rupture and allow hydraulic fluid to contact the hot brake assemblies resulting in a fire on both main gears. The aircraft headed off the taxiway as normal brakes, emergency brakes, and nosewheel steering werelost and the pilot reversed the propellers on all engines to bring the aircraft to a stop.																
2015 AST	12/13/57	Fairbanks, Alaska	PAWA	DC-4	Substantial	None	50	0	0	5	0	0	45			
The takeoff was being made by the second officer over a flat unlighted area. As the flaps were retracted and power adjusted during transition to enroute climb configuration, the crew was not immediately aware that the aircraft was descending. Strong corrective action was initiated by the captain but not in sufficient time to avoid striking a tree with the left wing. Upon attaining cruise altitude it was found that the aircraft operated normally and since enroute conditions were favorable the flight continued to Seattle, landing without incident.																

060

Time of Accident	Date	Location	Airline	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury: Crew F	Crew S	Crew M/N	Passengers F	Passengers S	Passengers M/N	Others F	Others S	Others M
Nonrevenue Operations																
0345 EDT	4/30/57	Baltimore, Md.	PAWA	DC-7C	Substantial	After Impact	6	0	2	4						
The landing gear control handle was placed in the "up" position before the flight was airborne. The nose gear retracted and the aircraft pitched forward skidding on its nose. The propellers started to disintegrate and a fire occurred. All occupants were safely evacuated, and the fire was extinguished by ground fire-fighting equipment.																
1326 Z	6/27/57	Tokyo, Japan	PAWA	DC-4	Substantial	None	5	0	0	5						
Following two missed approaches, a GCA precision approach was made without benefit of direct two-way communication with GCA. Weather conditions prevailing at the time consisted of low ceiling, low visibility, and a strong gusty variable wind. Shortly after touchdown, the pilot's vision was obstructed by very heavy rain which blurred runway lights. The aircraft veered from the runway, the nose gear striking a metal power box and tearing free.																
Miscellaneous																
1910 EST	1/19/57	New York, N. Y. (Idlewild)	PAWA	DC-3	Destroyed	None	1							1	0	0
This was an unauthorized flight by a mechanic's helper who possessed no flight experience. He took off, climbed steeply to an altitude of about 150 feet, whereupon the aircraft stalled and crashed in a steep nose-down attitude.																

CAB

SCHEDULED U. S. FOREIGN/OVERSEAS OPERATIONS

Certificated All Cargo Carriers

Time of Accident	Date	Location	Airline	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury								
								Crew			Passengers			Others		
								F	S	M/N	F	S	M/N	F	S	M
Scheduled Service																
1439 Z	9/16/57	Brindisi, Italy	Seaboard & Western	DC-4	Substantial	None	7	0	0	5	0	0	2			
While taxiing on a downhill gradient, with a tailwind, the captain observed a "follow-me" jeep parked to the right of the taxiway. It pulled out ahead and maneuvered erratically, compelling the captain to turn off the strip into soft ground, at which time the nose gear collapsed.																
1135 CST	11/6/57	Guatemala City, Guatemala	Aerovias Sud Americana	C-46A	Destroyed	After Impact	2	0	2	0				4	2	0
Following failure and feathering of the left engine, takeoff power was established on the right engine in an unsuccessful attempt to maintain altitude as flight was returning to the airport. Landing in an open field was prevented by a group of children playing in that area and the aircraft subsequently crashed in a residential area and burned.																

CAB

Time of Accident	Date	Location	Airline	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury: Crew F	Crew S	Crew M/N	Passengers F	Passengers S	Passengers M/N	Others F	Others S	Others M
Passenger Operations (Domestic)																
2313 CST	6/5/57	Chicago, Ill. (Midway)	Currey Air Transport	DC-4	Minor	None	79	0	0	5	0	0	74			
			Capital Airlines	DC-3	Substantial		3	0	0	2	0	0	1			
The DC-3 was taxiing in under "local traffic" control whereas the DC-4 was taxiing out to takeoff area under "ground control". The left wing of the former was struck by the latter's No. 4 propeller.																
Passenger Operations (Foreign/Overseas)																
0710 Z	8/28/57	Goose Bay, Labrador Canada	Meteor Air Transport	DC-4	Substantial	None	69	0	0	7	0	0	62			
Braking action was ineffective following landing on a wet runway. Although the nose wheel turned freely, the pilot was unable to get any steering action. The air bottle for emergency braking was not used since about one-half of the 11,000-foot runway remained. The aircraft angled off the runway, however, the nose gear bogging down in soft ground and collapsing.																
Nonrevenue Operations (Domestic)																
1915 EDT	10/18/57	Wildwood, N. J.	United States Overseas	DC-4	Substantial	None	3	0	0	3						
The flight had not been advised that approximately the first 2000 feet of runway lights were unlighted. The landing was made about 350 feet beyond the first visible light. Braking action was ineffective on the wet surface and with insufficient runway remaining to safely effect a go-around the pilot attempted to groundloop at the end of the runway. The left gear dug into the soft ground and the nose gear collapsed.																

Time of Accident	Date	Location	Airline	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury: Crew F	Crew S	Crew M/N	Passengers F	Passengers S	Passengers M/N	Others F	Others S	Others M
Nonrevenue Operations (Foreign/Overseas)																
2156 EDT	5/23/57	New York, N. Y. (Idlewild)	Aviation Corp. of Seattle d/b/a/ Westair Transport	DC-4	Substantial	None	10	0	0	8	0	0	2			
The flight was returning to Idlewild with No. 1 propeller feathered due to loss of fuel pressure. Touchdown was made about one-third down the runway from a high, fast approach and speed could not be reduced adequately with brakes. The emergency air bottle was pulled, but the aircraft continued off the end of the runway into soft sand, shearing the nose gear.																
Military Contract - Cargo (Domestic)																
1904 PST	3/26/57	Oakland, Calif.	Capitol Airways	C-46F	Substantial	After Impact	2	0	0	2						
A propeller blade failure occurred during takeoff and the right engine was torn from the aircraft. The takeoff was aborted and the aircraft brought to a stop without further incident.																
2150 EST	12/8/57	Dayton, Ohio	Capitol Airways	C-46F	Substantial	None	2	0	0	2						
The landing was made in a seven-knot crosswind on a slippery runway with icy patches. A veer started to the right as the tail wheel touched down and the pilot initiated corrective action. An uncontrolled turn then occurred to the left and the aircraft slid off the runway.																
Military Contract - Cargo (Foreign/Overseas)																
GMT Z	5/13/57	Narsarssuak AFB, Greenland	United States Overseas	DC-4	Destroyed	After Impact	3	2	1	0						
The flight was ferrying back to base after delivering a load of cargo to a distant site and operating under an IFR clearance to maintain 11,000 feet. The minimum en route altitude IFR in the control area is 7,000 feet. Evidence indicates that a white-out condition (no horizon) prevailed at the time the aircraft crashed on an ice cap. Investigation disclosed that the altitude at the scene of the accident was 5,900 feet, however, a chart covering this area indicated the altitude to be 5,000 feet. A small fire which occurred in the cabin after the crash burned itself out.																

CAB

Time of Accident	Date	Location	Airline	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury								
								Crew			Passengers			Others		
								F	S	M/N	F	S	M/N	F	S	M
Military Contract - Cargo (Foreign/Overseas)(Cont'd)																
1435 Z	6/27/57	Tokyo, Japan	Transocean	DC-4	Substantial	None	5	0	0	5						
Touchdown was long, under gusty wind conditions. The braking action was poor on the wet runway and the pilot groundlooped to avoid running off the end.																

690

Time of Accident	Date	Location	Airline	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury								
								Crew			Passengers			Others		
								F	S	N/M	F	S	N/M	F	S	N
Passenger Service																
1720 PST	3/2/57	Elyn, Washington	Alaska	DC-4	Destroyed	After Impact	5	3	0	0	2	0	0			
The flight was observed flying at a low altitude and disappeared into low hanging clouds that obscured the hills ahead. It crashed on the side of a densely wooded hill and burned.																
1115 PST	3/22/57	Nr. Sitka, Alaska	Alaska Coastal	PA-22A	Destroyed	None	3	0	0	1	0	0	2			
The flight was attempting to negotiate a mountain pass in near zero conditions, due to a snowstorm. The pilot turned back but was unable to clear the ridges and the aircraft stalled and crashed on the mountainside before recovery could be effected.																
1050 BST	4/9/57	Nr. Kotzebue, Alaska	Wien Alaska	Cessna 195	Substantial	None	3	0	0	1	0	0	2			
The right ski axle failed during takeoff, the ski remaining attached by the safety cables. The flight succeeded in becoming airborne and returned to Kotzebue for landing.																
1800 AST	4/27/57	Bethel, Alaska	Northern Consolidated	Cessna T-50	Substantial	None	7	0	0	1	0	0	6			
As the aircraft started to groundloop during landing the pilot was unable to recover due to a failure of the right rudder cable. Both landing gears collapsed and the aircraft came to an abrupt stop.																
1500 PST	5/14/57	Wrangell, Alaska	Alaska Coastal	Grumman 21A	Substantial	None	10	0	0	1	0	0	9			
The pilot was taxiing in on the step when he observed a floating log too late to avoid a collision. After striking the log, a takeoff was effected and the flight proceeded to Ketchikan where facilities were made available for prompt evacuation and recovery of the aircraft from the water.																

CAB

Time of Accident	Date	Location	Airline	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury								
								Crew			Passengers			Others		
								F	S	M/N	F	S	M/N	F	S	M
Passenger Service (Cont'd)																
0912 PST	7/7/57	Skagway, Alaska	Alaska Coastal	Grumman 21A	Substantial	None	4	0	0	1	0	0	3			
The propeller on the right engine failed shortly after the aircraft became airborne. The gear was retracted and a landing made in the bay without incident.																
1430 AST	12/5/57	Mt. Whittier, Alaska	Pacific Northern	L-749	Substantial	None	28	0	0	5	0	0	23			
As flight was climbing to its assigned altitude the forward cabin door blew out resulting in explosive decompression at 18,000 feet. Immediately following this the No. 2 engine showed a power loss, due to ingestion of foreign material from the cabin through the carburetor air inlet. The propeller was feathered and a clearance was obtained for descent. Landing was accomplished at Anchorage without further incident.																
Other Revenue Operations																
0925 AST	2/14/57	Kalskag, Alaska	Northern Consolidated	Cessna T-50	Substantial	None	1	0	0	1						
The flight landed on a frozen river surface covered with patches of wind packed snow. The right ski encountered one of these patches and shortly thereafter the right gear collapsed.																
1515 AST	3/1/57	Akiak, Alaska	Northern Consolidated	Cessna T-50	Substantial	None	1	0	0	1						
The ski equipped aircraft was being operated from river ice. Shortly after start of the takeoff run, the left gear collapsed and the ski moved forward into the propeller.																
1525 AST	4/23/57	Kwethluk, Alaska	Northern Consolidated	PA-20	Substantial	None	1	0	0	1						
Two touch-and-go landings were made on the river bar to check its suitability for landing. While making a full stop landing the aircraft contacted a soft spot and nosed over.																

087

Time of Accident	Date	Location	Airline	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury								
								Crew			Passengers			Others		
								F	S	M/N	F	S	M/N	F	S	M
Other Revenue Operations (Cont'd)																
1647 AST	10/10/57	Galena, Alaska	Northern Consolidated	Cessna T-50	Substantial	None	2	0	0	1	0	0	1			
The landing gear extension mechanism failed and the gear could not be extended fully. The landing was made with the gear in a partially extended position causing the gear drag struts to fail.																
1345 EST	10/30/57	Solomon, Alaska	Alaska	Cessna 180	Substantial	None	1	0	0	1						
As the pilot applied power and turned to taxi into a parking area, the right gear dropped into an unmarked snow-filled drainage ditch that paralleled the landing strip.																
1135 AST	11/12/57	Stevens Village, Alaska	Wien Alaska	Cessna 180	Substantial	None	1	0	0	1						
During a landing on river ice, the right ski rode under shell ice and the gear was pulled out of its fuselage attachment fitting. The right wing tip struck the ice and the aircraft groundlooped.																
Nonrevenue Operations																
1334 AST	4/13/57	Mr. King Salmon, Alaska	Northern Consolidated	DC-3	Substantial	None	5	0	0	3	0	0	2			
The flight had landed on frozen lake surface and was taxiing in when the left wheel broke through the ice.																
0700 AST	7/20/57	Fairbanks, Alaska	Wien Alaska	Cessna 170	Substantial	None	1	0	0	1						
A landing was made on a sand bar following loss of engine power, and the flight remained overnight. Following a ground check and run-up, the engine functioned normally and trip was continued to Fairbanks. The engine again failed and a forced landing was made on a narrow highway bordered by trees.																

0638

Time of Accident	Date	Location	Airline	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury								
								Crew			Passengers			Others		
								F	S	M/N	F	S	M/N	F	S	M
Nonrevenue Operations (Cont'd)																
0835 AST	9/3/57	Circle Hot Springs, Alaska	Wien Alaska	Cessna 195	Substantial	None	1	0	0	1						
The aircraft groundlooped during landing. The right gear collapsed.																
0930 AST	11/23/57	Point Barrow, Alaska	Wien Alaska	Cessna 180	Substantial	None	2	0	0	2						
The right landing gear strut broke during takeoff. Pilot decided to continue the flight to a maintenance base at Fairbanks, however, due to low fuel supply, he landed at Bettles.																
Nonscheduled Charter																
0650 AST	1/4/57	Fairbanks, Alaska	Wien Alaska	C-46F	Substantial	None	8	0	0	2	0	0	6			
While turning into takeoff position, the captain instructed the copilot to lock the tailwheel; however, the latter inadvertently actuated the landing gear selector. The right gear collapsed and the right wing settled to the ground.																
1320 BST	3/5/57	Granite Mt., Alaska	Cordova	C-46D	Substantial	None	2	0	0	2						
While approaching to land on a runway on top of a mountain, the aircraft settled in a downdraft and struck the ground short of, and below, the runway threshold before recovery could be effected. The right wheel and axle were sheared from the gear strut and the left gear collapsed rearward.																
1630 BST	4/15/57	Utica, Alaska	Wien Alaska	Cessna 180	Substantial	None	2	0	0	1	0	0	1			
During a landing on river ice, the left ski broke through an area of thin overflow ice and the aircraft groundlooped. During the loop the right ski contacted an ice ridge and collapsed.																

690

Time of Accident	Date	Location	Airline	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury								
								Crew			Passengers			Others		
								F	S	M/N	F	S	M/N	F	S	M
Nonscheduled Charter (Cont'd)																
1500 AST	6/19/57	Telegraph Creek, B. C. Canada	Ellis	Cessna 180	Destroyed	None	4	0	0	1	0	0	3			
The pilot observed a burning aircraft on the ground and turned to pass over it at a lower altitude to determine whether there were any survivors. While at an altitude of approximately 500 feet a severe downdraft was encountered. The aircraft settled despite full power, clipped tree tops and came to rest inverted in a wooded area.																
1400 BST	6/22/57	Kobuk, Alaska	Wien Alaska	Norseman UC64AS	Destroyed	After Impact	4	1	0	0	0	2	1			
At about 200 feet above the ground, the pilot entered a narrow canyon which rose rapidly in the direction of the flight. He attempted to reverse his course, but the aircraft stalled and crashed. Fire followed impact.																
1340 AST	7/3/57	Eagle, Alaska	Wien Alaska	Cessna 180	Substantial	After Impact	1	0	0	1						
Takeoff was made from a short strip in a heavily loaded aircraft. It failed to clear some brush near the end of the runway, struck some trees and settled into soft tundra. A fire occurred after landing but was extinguished by the pilot and bystanders.																
1645 AST	7/4/57	Ruby, Alaska	Northern Consolidated	Cessna T-50	Substantial	None	9	0	0	1	0	0	8			
The aircraft bounced on landing and on second touchdown was not aligned with the runway. A combination of right brake and left engine power was used in an unsuccessful attempt to maintain directional control. In an effort to avoid a collision with a parked truck pilot intentionally groundlooped.																
1335 BST	9/5/57	Nome, Alaska	Munz Airways	Howard DGA15P	Substantial	None	1	0	0	1						
The pilot applied brakes in an attempt to maintain directional control during landing in a 15-20 mph crosswind, and the aircraft nosed over.																

070

Time of Accident	Date	Location	Airline	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury								
								Crew			Passengers			Others		
								F	S	M/N	F	S	M/N	F	S	M
Nonscheduled Charter (Cont'd)																
1520 AST	9/8/57	Chitna, Alaska	Cordova	Cessna 180	Substantial	None	1	0	0	1						
A landing was made on a lake to enplane passengers. While taxiing to the beach in a variable 25 mph wind, with strong gusts, the left float submerged and the aircraft capsized.																
0930 PST	9/14/57	Wilson Lake, Alaska (Mr. Ketchikan)	Ellis	Cessna 180	Destroyed	None	4	1	0	0	2	0	1			
At an altitude of approximately 100 feet, shortly after takeoff, the aircraft suddenly rolled to the left and went into the water in a nose-down attitude.																
1523 AST	9/29/57	Mr. Pt. Barrow, Alaska	Wien Alaska	Cessna 180	Substantial	None	4	0	0	1	0	0	3			
After circling an area covered with hard crusted snow, the pilot extended the skis and landed. The aircraft failed to decelerate and throttle was opened for a go-around. However, the engine failed to respond and the aircraft slid over an embankment onto a frozen river.																
1010 AST	11/2/57	Point Barrow, Alaska	Wien Alaska	Cessna 180	Substantial	None	1	0	0	1						
The aircraft was landed on the ice of a lagoon. As it was slowing at end of landing roll the left gear axle failed. The gear strut pulled out of its fitting and the left wing and horizontal stabilizer contacted the ice.																

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071

PART II

GENERAL AVIATION ACCIDENTS INVOLVING FIXED-WING AIRCRAFT IN EXCESS OF 12,500 POUNDS CERTIFICATED TAKEOFF WEIGHT AND HELICOPTERS

G12

RECAPITULATION OF U. S. GENERAL AVIATION ACCIDENTS
INVOLVING FIXED-WING AIRCRAFT IN EXCESS OF 12,500 POUNDS
CERTIFICATED TAKEOFF WEIGHT AND HELICOPTERS
(Calendar Year 1957)

[illegible]	Fatal Accidents	Aircraft Damage			Crew Injury			Passenger Injury			Others Injured			Total Aboard	Fire		
		Destroyed	Substantial	Minor/None	Fatal	Serious	Minor/None	Fatal	Serious	Minor/None	Fatal	Serious	Minor		In Air	After Impact	On Ground
	2	3			4												
	2	4	14		6		32	8		35				81		4	1
	1	1			2												
			1				2							2			
		1	2	1			5							5			
	1	2	2		4	2	3				3	15	55	9		2	
	1	1			1									1		1	
			2				5							5		1	
	1	1	3		1	2	4		1	1				9		1	
	6	9	24	1	12	4	51	8	1	36	3	15	55	112		9	1
			3				3			6				9			
			5				9			1				10			
		2	10				13							13		1	
			4			1	3			8				12		1	
	1	1	1			1	1	1		2				5		1	
			1				1			1				2			
			1				1			1				2			
	3	3	2		2	1	3	1		1				8		1	
		1	3				5							5			
	1	1	1		1		1			1				3			
			1				1			2				3			
	4	6	3		4	1	4	3	2	5				19		2	
			3				3			3				6			
			1				1							1			
			2				2			1				3			
	9	14	41		7	4	51	5	2	32				101		6	
	15	23	65	1	19	8	102	13	3	68	3	15	55	213		15	1

RECAPITULATION OF U. S. GENERAL AVIATION ACCIDENTS
INVOLVING FIXED-WING AIRCRAFT IN EXCESS OF 12,500 POUNDS
CERTIFICATED TAKEOFF WEIGHT AND HELICOPTERS
(Calendar Year [illegible])

CLASS OF OPERATION	Total Accidents	Fatal Accidents	Aircraft Damage			Crew Injury			Passenger Injury			Others Injured			Total Aboard	Fire		
			Destroyed	Substantial	Minor/None	Fatal	Serious	Minor/None	Fatal	Serious	Minor/None	Fatal	Serious	Minor		In Air	After Impact	On Ground
FIXED-WING																		
Executive (Corporate)	17 ~~18~~	2 ~~3~~	3 ~~4~~	14		4 ~~6~~		32	8		35				81		4	1
Other General Aviation																		
Cargo	2 ~~1~~	1	1	1		2		2							2			
Ferry	4		1	2	1			5							5			
Test	4	1	2	2		4	2	3				3	15	55	9		2	
Training-Check	1	1	1			1									1		1	
Demonstration	2			2				5							5		1	
Aerial Crop Control	4	1	1	3		1	2	4		1	1				9		1	
Subtotal	34	6	9	24	1	12	4	51	8	1	36	3	15	55	112		9	1
HELICOPTER																		
Executive	3			3				3			6				9			
Instructional	5			5				9			1				10			
Aerial Crop Control	12		2	10				13							13		1	
Other General Aviation																		
Passengers - Revenue	4			4			1	3			8				12		1	
Passengers - Nonrevenue	2	1	1	1			1	1	1		2				5		1	
Other Industrial	1			1				1			1				2			
Power-Pipeline	1			1				1			1				2			
Exhibition-Demonstration	5	3	3	2		2	1	3	1		1				8		1	
Testing-Experimental	4		1	3				5							5			
Ferry	2	1	1	1		1		1			1				3			
Cargo	1			1				1			2				3			
Contract-Charter	9	4	6	3		4	1	4	3	2	5				19		2	
Air Taxi	3			3				3			3				6			
Training-Check	1			1				1							1			
Other[1]	2			2				2			1				3			
Subtotal	55	9	14	41		7	4	51	5	2	32				101		6	
GRAND TOTAL	89	15	23	65	1	19	8	102	13	3	68	3	15	55	213		15	1

[1] Only preliminary information received.

073

GENERAL AVIATION ACCIDENTS INVOLVING FIXED-WING AIRCRAFT
IN EXCESS OF 12,500 POUNDS CERTIFICATED TAKEOFF WEIGHT
(Calendar Year 1957)

Time of Accident	Date	Location	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury								
							Crew			Passengers			Others		
							F	S	M/N	F	S	M/N	F	S	M
		EXECUTIVE (CORPORATE) OPERATIONS													
1215 EST	1/21/57	Teterboro, N. J.	DC-3	Substantial	None	7			2			5			
An ILS approach was being made in deteriorsting weather. Following touchdown, about midway the runway, braking action was ineffective on the wet surface and the aircraft went off the runway end, collided with an ILS antenna shack, and came to rest in a drainage ditch.															
1214 CST	1/31/57	Tuscaloosa, Ala.	Lockheed 18	Substantial	None	2			2						
The aircraft veered from the runway while landing in strong crosswind conditions and slid into a fence and ditch bordering the airport.															
1623 EST	2/5/57	Atlanta, Ga.	Lockheed PV-1	Substantial	None	2			2						
After takeoff, the left gear could not be retracted fully. The flight returned to point of takeoff and circled the field to burn up fuel. Following repeated unsuccessful efforts to lock the gear down, a landing was made with the right main and nose gears retracted and the left gear dangling, the latter collapsing on touchdown.															
1203 EST	3/1/57	Williamsport, Pa.	Lockheed 18	Substantial	None	6			2			4			
The pilot was unable to bring the aircraft to a stop following touchdown far down on a snow-covered runway, and it went off the runway end into a fence.															

F - Fatal; S - Serious; M/N - Minor and/or No Injury.

Time of Accident	Date	Location	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury								
							Crew			Passengers			Others		
							F	S	N/N	F	S	N/N	F	S	N
		EXECUTIVE (CORPORATE) OPERATIONS (continued)													
1315 EDT	5/22/57	New York, N. Y. (La Guardia)	Lockheed L-14 Learstar	Substantial	None	6			2			4			
Directional control could not be maintained during takeoff and the aircraft veered from the runway.															
1310 AST	5/28/57	Tanana, Alaska	Convair LB-30	Substantial	None	5			3			2			
While in an area of scattered thunderstorms and proceeding under instrument conditions, the aircraft was struck by lightning.															
1230 EST	6/5/57	Lexington, Va.	DC-3	Substantial	None	2			2						
Brakes were ineffective following touchdown on a short clay runway covered with moist, tall grass. An unsuccessful attempt was made to groundloop to avoid overrunning the field. The aircraft slid through a fence into a road embankment.															
1000 CST	6/14/57	International Falls, Minn.	Lockheed PV-1	Substantial	None	5			2			3			
Following an instrument letdown and when clear of the overcast, the pilot made a right circling approach to check runway and wind conditions. Noting that he was not properly aligned with the runway, he retracted the gear and flaps and made a go-around. He failed to lower the gear for the ensuing landing and landed wheels-up. The gear warning horn did not function, but the gear warning light was operable.															
1615 CST	7/8/57	Pensacola, Fla.	Lockheed 18-56	Substantial	None	3			3						
Following collapse of the right gear during the takeoff run, the pilot reduced power and applied brakes which were ineffective in preventing a continued veer to the right and the aircraft went off the runway into a turf area.															

075

Time of Accident	Date	Location	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury								
							Crew			Passengers			Others		
							F	S	M/N	F	S	M/N	F	S	M
EXECUTIVE (CORPORATE) OPERATIONS (continued)															
0642 AST	7/10/57	King Salmon, Alaska	Lockheed 18-56	Destroyed	After Impact	6	2			4					
Immediately upon becoming airborne, the aircraft was observed to assume a steeper than normal angle of climb which increased abruptly at an altitude of about 200 feet, continuing until it was in a near vertical attitude. A stall occurred at an approximate altitude of 800 feet and the aircraft dived into the ground.															
1304 EDT	8/23/57	Pittsburgh, Pa.	Lockheed P-38	Destroyed	After Impact	2	2								
The P-38 had been cleared No. 3 to land following a Constellation which was acknowledged. Shortly thereafter the captain of the airliner observed the P-38 approach on a collision course and initiated evasive action by pulling up to the right. The P-38 entered a vertical left bank, either as a result of the pilot's reaction to avoid a collision, or by the severe turbulence of the wing vortices of the Constellation, or a combination of both. The aircraft then dived into the ground and burned.															
1655 EST	10/6/57	Uniontown, Pa.	Lockheed Lodestar	Destroyed	After Impact	6	2			4					
During a flight over mountainous terrain, the aircraft was heard from the ground as it passed at a low altitude in the overcast. The aircraft disintegrated as it crashed through trees on a mountainside, approximately 162 feet below the top.															
1730 MST	10/24/57	Roswell, N. Mex.	Douglas B-26C	Substantial	On Ground	7			2			5			
A fire, which had occurred in the right wheel during the landing, was extinguished by ground fire-fighting equipment. Inspection disclosed a broken fuel line fitting through which fuel was ejected into the engine accessory section and drained into the wheel well.															

576

Time of Accident	Date	Location	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury								
							Crew			Passengers			Others		
							F	S	M/N	F	S	M/N	F	S	M
EXECUTIVE (CORPORATE) OPERATIONS (continued)															
0930 EST	10/30/57	Montreal, Canada	North American B-25J	Substantial	None	7			2			5			
Prior to landing, the gear indicator lights and a visual inspection indicated the gear to be down and locked. Shortly after touchdown, however, the left gear retracted and the aircraft swerved from the runway.															
1929 EST	11/8/57	Greenwich, Conn.	DC-3	Destroyed	After Impact	6			2			4			
While leveling off for touchdown, a severe side gust forced the aircraft into a left bank and the wing and gear scraped the runway. The pilot applied full power and retracted the gear for a go-around, however, after clearing a hangar, a sink developed and the plane contacted the ground. Trees and a stone fence were struck as it slid along the ground. A fire that had started in the left engine was quickly extinguished by ground fire-fighting equipment.															
1611 EST	12/10/57	Pittsburgh, Pa.	Lockheed PV-1	Substantial	None	4			2			2			
Following an approach to a short runway in a 15-knot gusty crosswind, the aircraft touched down and bounced. Flaps were retracted immediately. The next touchdown was made on the left gear which collapsed. The gear was retracted to prevent a possible cartwheel and the aircraft skidded down the runway on its belly.															
1225 EST	12/10/57	Pittsburgh, Pa.	DC-3	Substantial	None	1			1						
After having been in hangar storage for about one month, the aircraft was given a preflight inspection, taxi and runup. It was then taxied to position for takeoff. As the brakes were released, the aircraft started the takeoff roll, and the left and right gears retracted successively.															
0735 EST	12/12/57	Charleston, W. Va.	Lockheed 18	Substantial	None	4			3			1			
While taxiing from the ramp, the tail wheel dropped into a snow-filled unmarked trench.															

077

Time of Accident	Date	Location	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury								
							Crew			Passengers			Others		
							F	S	M/N	F	S	M/N	F	S	M
OTHER GENERAL AVIATION OPERATIONS															
Cargo															
1608 AST	10/21/57	Bar 1, Yukon Territory, Canada	DC-3	Substantial	None	2			2						
Braking action was not effective in slowing the aircraft due to glare ice on the runway. The aircraft skidded to the right near the end of the runway and rolled down an embankment.															
Ferry															
1330 PST	3/2/57	Bakersfield, Calif.	Grumman TBM	Destroyed	None	1			1						
The engine lost oil pressure and ran very rough while the flight was over mountainous terrain above broken clouds. The pilot parachuted successfully and the aircraft crashed in an open field. It had been in storage prior to this ferry flight.															
1700 EDT	4/2/57	Miami, Fla.	Lockheed P38L	Substantial	None	1			1						
Prior to landing, the nose gear could not be extended and locked. After unsuccessful attempts to accomplish this, a nose-high landing was made. As speed was dissipated, the nose dropped and skidded along the runway.															
2137 CST	7/28/57	Oklahoma City, Okla.	DC-3	Substantial	None	2			2						
The crew was unable to get a safe gear light indication prior to landing, however, the horn actuated during the approach. When nearing the end of the landing roll-out, the right gear retracted.															
1330 EST	9/13/57	Washington, D. C.	Grumman TBM3 Mooney M18L	Minor Substantial	None	1			1						
Collided while both were taxiing to takeoff position.															

CAB

Time of Accident	Date	Location	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury								
							Crew			Passengers			Others		
							F	S	M/N	F	S	M/N	F	S	M
		OTHER GENERAL AVIATION OPERATIONS (continued)													
Aerial Crop Control															
0945 EDT	5/14/57	Allentown, Pa.	Chase YC-122C	Substantial	None	2			2						
The aircraft dropped in hard from a few feet above the ground when 75-degree flaps were extended instead of the 60 degrees recommended.															
0620 PDT	5/28/57	Maricopa, Calif.	Boeing 247D	Substantial	None	2			2						
At an altitude of about 400 feet en route to an area to be sprayed, both engines stopped. The fuel selector valve was switched to a full fuel tank, however, insufficient altitude remained to restart the engines. A wheels-up landing was made in an open pasture.															
0704 MST	7/11/57	Polaris, Mont.	Grumman TBM-3E	Destroyed	After Impact	1	1								
While engaged in forest spraying operations in high mountainous terrain, the aircraft crashed on the floor of a box-like canyon, bounced into a small lake, and submerged in about 20 feet of water.															
1917 MST	7/13/57	Douglas, Wyo.	Chase YC-122C	Substantial	None	4		2			1	1			
About one-half of the runway was used up prior to touchdown following a high, fast, downwind approach. The pilot failed to apply brakes until close to the runway end at which time he groundlooped. A collision with a ditch resulted.															

CAB

GENERAL AVIATION ACCIDENTS
INVOLVING HELICOPTERS
(Calendar Year 1957)

Time of Accident	Date	Location	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury								
							Crew			Passengers			Others		
							F	S	M/N	F	S	M/N	F	S	M
EXECUTIVE															
1415 EDT	7/23/57	Erving, Mass.	Bell 47H	Substantial	None	3			1			2			
While approaching a small undeveloped area for a landing, the pilot was forced to pull up at the last instant to avoid wires and overshot. He then turned back but the helicopter settled in due to loss of rotor speed. Touchdown was made short of the area on the edge of an embankment, the helicopter tilted back and slid down the embankment.															
1300 CST	8/27/57	Venice, La.	Sikorsky S-55	Substantial	None	2			1			1			
While making a simulated autorotation landing, the pilot held the flare in a nose-up attitude causing the tail rotor to strike the water.															
1304 EST	11/19/57	Newark, N. J.	Bell 47J	Substantial	None	4			1			3			
The pilot made a continuing turn and headed into the wind for an intended landing. As he was preparing to start sideward flight, a sink developed and the helicopter settled in a skid. The main rotor struck the tail cone and the helicopter bounced. Recovery was effected and a controlled landing made. The wind was 15 knots with gusts.															
INSTRUCTIONAL															
1630 CST	5/24/57	Lawrence, Kans.	Sikorsky R6A	Substantial	None	2			2						
The pilot-instructor's only experience in this helicopter type was several hours hovering a few feet off the ground. During this flight with a student pilot, he was unable to maintain altitude. The aircraft settled in, striking the ground tail first.															

U32

Time of Accident	Date	Location	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury								
							Crew			Passengers			Others		
							F	S	M/N	F	S	M/N	F	S	M
INSTRUCTIONAL (continued)															
1645 EDT	7/1/57	Philadelphia, Pa.	Bell 47G	Substantial	None	2			2						
The pilot attempted to maneuver the helicopter within a confined area and the main rotor struck the overhanging doors of the hangar.															
1430 PDT	7/3/57	Pacoima, Calif.	Bell 47G	Substantial	None	2			2						
An autorotational approach was being made as part of a pilot rating check flight. The helicopter touched down hard on the rear of the skids and the tail struck the ground.															
1700 EDT	8/8/57	New York, N. Y. (International)	Bell 47J	Substantial	None	2			1			1			
While landing from autorotation on an undeveloped area of the airport, the tail rotor guard dropped into a depression and the tail rotor struck the ground. The area had recently been dragged by earth-moving equipment leaving a depression in the soft soil.															
1400 EST	9/4/57	Cincinnati, Ohio	Bell 47J	Substantial	None	2			2						
While making a downwind approach for a flare landing the helicopter settled in hard and bounced. After the second impact the entire rotor mast assembly separated and struck parked aircraft. A main rotor blade also struck the tail boom and the entire tail structure was severed.															
AERIAL CROP CONTROL															
1025 EST	1/23/57	Waverly, Fla.	Bell 47B3	Substantial	None	1			1						
The engine stopped suddenly when the flight was over a large grove during return to the loading strip. The pilot immediately went into autorotation but was unable to reach an open area. He made a landing in fruit trees. No cause for the engine failure could be found, however, when the drain valve was opened only a small amount of fuel drained out.															

Time of Accident	Date	Location	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury								
							Crew			Passengers			Others		
							F	S	M/N	F	S	M/N	F	S	M
AERIAL CROP CONTROL (continued)															
1600 PST	3/26/57	Paso Robles, Calif.	Hiller UH12B	Substantial	None	1			1						
It was necessary to pull up about 200 feet to clear trees on the side of a hill upon completion of the spraying run. Following the pull-up and while turning left, the helicopter yawed suddenly to the right and settled into trees before recovery could be effected.															
0830 PST	5/10/57	Pullman, Wash.	Bell 47D	Substantial	None	1			1						
During pull-up from a swath, the spray boom struck a powerline and broke loose. It then struck the tail rotor causing the helicopter to go into a flat spin as the pilot attempted to land. The touchdown was made on a slope and the main rotors struck the ground.															
0630 EDT	5/21/57	Tyro, Va.	Bell 47G2	Substantial	None	2			2						
The pilot checked the area ahead while flying at low altitude. He then diverted his attention to persons on the ground and failed to observe a telephone line directly ahead in time to avoid collision with it. The wire caught in the skids and, as it broke, the helicopter settled and its tail struck the ground.															
1500 MST	5/28/57	Great Falls, Mont.	Bell 47D1	Substantial	None	1			1						
A low altitude downwind turn was being made on completion of a swath. The helicopter settled to the ground in an upright attitude and slid into a deep furrow. This was the pilot's first spraying operation in this type helicopter.															
1900 MST	6/7/57	Great Falls, Mont.	Bell 47D1	Destroyed	None	1			1						
The pilot, unrated for helicopter operation, was engaged in spraying activities. The helicopter settled in during a turn and touched down hard on the heel of the left skid. The main rotors deflected downward and struck the tail boom.															

CAB

Time of Accident	Date	Location	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury								
							Crew			Passengers			Others		
							F	S	M/H	F	S	M/H	F	S	M
			AERIAL CROP CONTROL (continued)												
0645 CST	6/29/57	Stuttgart, Ark.	Bell 47D1	Substantial	None	1			1						
The helicopter was allowed to drift during a spraying run parallel to a powerline at an altitude of approximately three feet. The main rotor struck a pole.															
0650 CST	7/3/57	Askov, Minn.	Bell 47D1	Substantial	None	1			1						
The pilot was pulling up over some trees when he noted wires and attempted to turn. The wires were struck, the tail rotor was rendered inoperative, and the helicopter landed hard.															
0825 PDT	7/16/57	Selma, Calif.	Hiller 12A	Substantial	None	1			1						
The pilot leveled off at about two or three feet over vines when he lost directional control due to a failure in the tail rotor. He cut power and made a partially controlled landing between vine rows, touching down in a slight left skid.															
0730 PDT	8/12/57	Fresno, Calif.	Hiller UH12A	Destroyed	After Impact	1			1						
The engine failed while over a vineyard on approach to a field to be dusted. Rotor speed was lost during an approach for landing in a cotton field, and touchdown was made in a nose-down attitude. The main rotors struck the ground and the tail rotor. Fuel and sulpher spilled over the engine and electrical system and ignited.															
0645 EST	8/14/57	Homerville, Ga.	Bell 47G	Substantial	None	2			2						
The engine lost rpm and the helicopter began to settle while the pilot was circling a forest area prior to spraying. He attempted to make a landing in a small, partially cleared area but the main rotor struck a tree at the edge of the clearing, and the helicopter dropped in on its right skid.															

U35

Time of Accident	Date	Location	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury								
							Crew			Passengers			Others		
							F	S	M/N	F	S	M/N	F	S	M
AERIAL CROP CONTROL (continued)															
Unknown	8/18/57	Deale, Md.	Bell 47B	Substantial	None	Unknown									
The helicopter was being used for spraying operations and had been parked for the weekend. It was subsequently started by an unknown person during hours of darkness and the wreckage was found approximately 30 feet from where it had been parked in the field.															
OTHER GENERAL AVIATION															
Passengers - Revenue															
1000 PST	2/7/57	San Francisco, Calif.	Bell 47G1	Substantial	After Impact	3		1				2			
The helicopter settled and the landing gear struck the edge of a shelf during an approach to land at a heliport on the side of a mountain. It fell backward down the mountain; a small fire started, but was extinguished quickly.															
1115 MST	4/30/57	Salt Lake City, Utah	Bell 47G2	Substantial	None	3			1			2			
The right skid was brought down to make contact while hovering for landing on top of a mountain. Before the pilot could get the left skid down, strong gusts tilted the helicopter and the main rotors struck the snow.															
0750 AST	9/6/57	Nulato, Alaska	Bell 47	Substantial	None	3			1			2			
While flaring out for landing, in a 25 mph gusty, variable wind, a sudden windshift caused the helicopter to settle rapidly. Application of full power was not effective and the helicopter touched down hard and bounced. During the rebound and while settling, the helicopter drifted into trees.															
1530 MST	12/18/57	Norwood, Colo.	Bell 47G	Substantial	None	3			1			2			
The right skid broke through the hard crusted snow in a remote mountain area while a running takeoff was being made. The main rotor struck the ground.															

CAB

Time of Accident	Date	Location	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury								
							Crew			Passengers			Others		
							F	S	M/N	F	S	M/N	F	S	M
		OTHER GENERAL AVIATION (continued)													
Passengers - Nonrevenue															
1830 PST	7/13/57	Big Sand Lake, Idaho (Nr. Missoula, Mont.)	Bell 47G2	Substantial	None	3			1			2			
Shortly after takeoff from a sandbar, at an altitude of approximately 6 feet, the pilot stated that he was unable to gain altitude and was forced to land in shallow water. The helicopter was loaded near gross and the density altitude was 7,620 feet.															
1730 MST	8/8/57	Salmon, Idaho	Bell 47G2	Destroyed	After Impact	2		1			1				
While being flown across a field at an extremely low altitude, the helicopter collided with an electric line, crashed, and burned.															
Other Industrial															
1330 MST	2/5/57	Cascade, Idaho	Bell 47G2	Substantial	None	2			1			1			
This was a "snow count" flight. A landing was made in deep snow and, as collective pitch was reduced, the helicopter started to sink on the right side, the main rotor blades striking the snow.															
Power-Pipeline															
1722 PDT	7/11/57	Silver Lake, Calif.	Bell 47G2	Substantial	None	2			1			1			
A sandstorm, accompanied by strong gusty winds, was encountered. The pilot was temporarily blinded by sand while approaching for a landing. The helicopter touched down, turned left, sheared the skid, and the main rotors struck the tail boom.															

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Time of Accident	Date	Location	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury								
							Crew			Passengers			Others		
							F	S	M/N	F	S	M/N	F	S	M
OTHER GENERAL AVIATION (continued)															
Exhibition-Demonstration															
1130 EST	3/29/57	Stratford, Conn.	Sikorsky S-58	Substantial	None	2			2						
During the course of demonstrating the helicopter's characteristics with float installation, a full autorotative landing was made. Shortly after contact with the water, the left floatation fitting failed. The pilot immediately returned to the heliport where an emergency landing was made using a sandbag platform to support the left side.															
1515 EDT	7/14/57	Waynesburg, Pa.	Bell 47H	Substantial	None	2			1			1			
The pilot was making a demonstration landing from autorotation and had flared the helicopter at about 10 feet above the ground, maintaining idling power. It dropped in hard, touched down skid tube first, and then rocked forward to a level position. The main rotors flexed downward and struck the tail boom, severing completely its rear portion.															
1430 EDT	7/17/57	New Castle, Pa.	Bell 47J	Destroyed	None	2		1		1					
The pilot was making an autorotational landing and was flaring out at an altitude of about 20 feet. The helicopter went into an uncontrolled descent and hit hard on the left skid which collapsed.															
0945 CST	9/21/57	Wichita, Kans.	Cessna Helicopter CH-1B	Destroyed	After Impact	1	1								
The pilot took off from the west side of the field to join two other helicopters at the opposite side for publicity pictures. An altitude of approximately 20-30 feet was attained following a hovering takeoff. Soon thereafter, the helicopter was observed to slowly assume a nose-down attitude while maintaining level flight. This increased, and the helicopter rolled to the right. Its altitude was suddenly lost, and the ground was struck in an approximate 45-degree nose-down angle.															

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Time of Accident	Date	Location	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury								
							Crew			Passengers			Others		
							F	S	M/N	F	S	M/N	F	S	M
OTHER GENERAL AVIATION (continued)															
Exhibition-Demonstration (continued)															
1633 EST	12/1/57	Ocala, Fla.	Umbaugh Rotocopter	Destroyed	None	1	1								
This was an unauthorized demonstration flight of an experimental rotocopter model equipped with main rotors and pusher propeller. After takeoff and while circling the airport at an altitude of about 100 feet, the propeller and rotor blades disintegrated and the rotocopter crashed.															
Testing-Experimental															
1420 EST	2/1/57	Stratford, Conn.	Sikorsky S-58A	Substantial	None	2			2						
This was a flight test to determine height-velocity diagram while utilizing a float installation. After a normal landing from autorotation, the right float broke off, the helicopter rolled to the right, and submerged.															
1030 PDT	5/15/57	Stockton, Calif.	Hiller UH12A	Substantial	None	1			1						
Loss of tail rotor pitch control occurred shortly after takeoff at an altitude of about 65 feet. The pilot cut power, however, insufficient altitude was available to go into autorotation. The helicopter struck the ground while the fuselage was still rotating.															
0815 PDT	8/15/57	Tehachapi, Calif.	Hughes 269	Substantial	None	1			1						
The pilot was completing a series of test autorotational landings. The flare for landing was started at too high an altitude and the helicopter touched down hard on the rear portion of the landing gear skids. It then pitched forward and capsized.															

Time of Accident	Date	Location	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury								
							Crew			Passengers			Others		
							F	S	M/N	F	S	M/N	F	S	M
OTHER GENERAL AVIATION (continued)															
Testing-Experimental (continued)															
1700 CST	10/28/57	Mattoon, Ill.	Sikorsky RB4	Destroyed	None	1			1						
The helicopter was being test flown following a complete overhaul and had been successfully maneuvered through various attitudes at a low altitude. During a circuit of the airport at an altitude of about 150 feet, cyclic pitch control was lost and it went out of control. Vertical recovery was effected by use of power followed by an autorotative landing at a high rate of descent. The landing was made in a normal attitude but with great force.															
Ferry															
1420 EST	10/24/57	Cincinnati, Ohio	Bell 47H	Destroyed	None	1	1								
The takeoff in a 15-20 knot gusty wind appeared normal until reaching an altitude of approximately 100 feet. The helicopter was then observed to suddenly climb steeply, appeared to loop, and then dived to the ground.															
1655 PST	11/6/57	Chino, Calif.	Hiller UH12	Substantial	None	2			1			1			
While hovering at an altitude of about 3 feet, and moving forward slowly, a loud noise was heard and the helicopter settled into the ground, the nose wheel digging into the soft ground.															
Cargo															
1600 EST	8/21/57	Chillicothe, Ohio	Bell 47H1	Substantial	None	3			1			2			
After takeoff, the pilot turned downwind to continue the climb between rows of parked cars. The helicopter settled in despite the use of full power, and came to rest on one of the parked cars.															

Time of Accident	Date	Location	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury								
							Crew			Passengers			Others		
							F	S	M/N	F	S	M/N	F	S	M
[illegible] (continued)															
Contract-Charter															
1639 PST	1/15/57	San Francisco, Calif.	Bell 47D1	Destroyed	None	2	1			1					
The helicopter was observed to suddenly go out of control during what appeared to be a routine flight over water. It crashed into the bay, sank, and was not recovered.															
1610 MST	2/28/57	Frazer, Colo.	Bell 47G2	Substantial	None	1			1						
The pilot stated that he was traversing a mountain pass in visual conditions when suddenly and without warning the visibility became zero. Speed was reduced to 0-5 mph, the helicopter settled to the ground and touched down hard on a slope. The rotor and engine were stopped whereupon the visibility instantly cleared to about 10 miles or more. It is believed that the zero condition was due to weather phenomena wherein a small cloud, or circular vapor rail formed around the helicopter as the rotors disturbed the cooled, saturated surrounding air.															
1600 MST	6/24/57	Monticello, Utah	Bell 47G2	Destroyed	None	3		1				2			
While transporting personnel and supplies over rough mountainous terrain in connection with a land survey operation, the pilot was flying the contour of the ranges with small terrain clearance. At an altitude of 7,300 feet, he attempted to gain altitude to clear an 8,300-foot ridge, however, the helicopter failed to gain sufficient altitude, struck trees, and crashed.															
1330 AST	7/6/57	Dillingham, Alaska	Bell 47G	Substantial	None	2			1			1			
Pilot selected a spot on the crest of a ridge and then made a pass to determine its suitability for landing. During the approach for landing, when at an altitude of approximately 15 feet, the helicopter settled in rapidly and landed hard despite use of full power and collective pitch. The helicopter bounced, then touched down on the side of the hill, and rolled down the slope.															

Time of Accident	Date	Location	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury								
							Crew			Passengers			Others		
							F	S	M/N	F	S	M/N	F	S	M
OTHER GENERAL AVIATION (continued)															
Contract-Charter (continued)															
1900 PST	8/6/57	Steamboat, Oreg.	Bell 47G	Destroyed	None	2	1				1				
The heliport was an improvised rock-strewn area atop a cliff at an elevation of 5,388 feet. The first two approaches were made too high and fast. The third one was made at a shallower rate of descent, however, too fast. The helicopter touched down hard and bounced, breaking the left runner on a rock. The pilot applied power for a go-around, but the main rotor blades cut through tree tops about 50 feet beyond the landing area, and a crash into a heavily timbered area resulted.															
1030 AST	8/12/57	Wood River Buttes, Alaska	Bell 47G	Substantial	After Impact	2			1			1			
Both engine and rotor speed dropped after helicopter had cleared trees following a running takeoff from a small clearing. The pilot was unable to regain positive control and landed in a marsh area to avoid complete loss of control. Touchdown was hard deflecting the main rotor blades into the tail boom.															
0758 MST	8/16/57	Rawlins, Wyo.	Bell 47G2	Destroyed	None	2	1			1					
The flight was observed at a low altitude shortly before engine failure occurred. An approach was made to land in an open area in the fairgrounds. The helicopter struck the ground hard, with initial impact on the tail skid, and rolled as it slid to a stop.															
1415 IST	8/29/57	Asansol, West Bengal India	Bell 47D1	Destroyed	After Impact	3	1			2					
A crash occurred in a nose-down, slightly left banked attitude from a near vertical descent. Available evidence indicated failure of a bolt linking the link assembly swashplate and arm assembly.															

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Time of Accident	Date	Location	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury								
							Crew			Passengers			Others		
							F	S	M/N	F	S	M/N	F	S	M
Contract-Charter (continued)															
1100 PST	12/20/57	Searchlight, Nev.	Bell 47G2	Substantial	None	2			1			1			
While executing a turn during approach for landing on a mountain ridge, the tail rotor struck a large cactus. Pilot lost control of the helicopter and crashed into the side of the mountain.															
Air Taxi															
1030 CST	2/14/57	Morgan City, La.	Bell 47G	Substantial	None	1			1						
Pilot was flying approximately 5 feet above the ground to repark. The main rotor blades and bubble type canopy struck an electric line and the helicopter dropped in.															
1816 EST	4/24/57	Pittsburgh, Pa.	Bell 47H1	Destroyed	None	2			1			1			
As the pilot was maneuvering into a parking area, the tail rotor blades struck the open door of a parked panel truck.															
1555 CDT	7/17/57	Arlington Heights, Ill.	Bell 47H	Substantial	None	3			1			2			
While an autorotation landing was being demonstrated, the touchdown was slightly nose-high causing the main rotor to flex downward and strike the tail boom.															
Training-Check															
1640 EST	5/25/57	Miami, Fla.	Bell 47J	Substantial	None	1			1						
During an attempted power-off autorotation landing on an area of sparsely tufted sand, the tail boom guard sank in the sand and the tail rotor struck the ground.															

C33

Time of Accident	Date	Location	Aircraft	Aircraft Damage	Fire	Total Aboard	Division of Injury								
							Crew			Passengers			Others		
							F	S	M/N	F	S	M/N	F	S	M
				OTHER GENERAL AVIATION (continued)											
Other															
--	11/27/57	Oxford, Miss.	Kaman Helicopter	Substantial	--	2			1			1			
(Preliminary) No details available at this time.															
--	12/10/57	Nelson's Landing, Nev.	Bell Helicopter	Substantial	--	1			1						
(Preliminary) The helicopter was left unattended while idling, and without the use of a friction lock on collective pitch control, and it overturned.															