TECHNICAL REPORT STANDARD TITLE PAGE

1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.
FAA-AM-71-9		

4. Title and Subtitle	5. Report Date
PHYSICIAN PILOT-IN-COMMAND FATAL FLIGHT ACCIDENTS 1964 THROUGH 1970	March 1971
	6. Performing Organization Code

7. Author(s)	8. Performing Organization Report No.
A. Cierebiej, M.D. S. R. Mohler, M.D. V. G. Stedman, B. A.	

9. Performing Organization Name and Address	10. Work Unit No.
Office of Aviation Medicine Federal Aviation Administration Department of Transportation 800 Independence Avenue, S.W. Washington, D.C. 20590	11. Contract or Grant No.
	13. Type of Report and Period Covered OAM Report
12. Sponsoring Agency Name and Address Office of Aviation Medicine Federal Aviation Administration Department of Transportation 800 Independence Avenue, S.W. Washington, D.C. 20590	14. Sponsoring Agency Code

15. Supplementary Notes

16. Abstract

It was reported in 1966 that the prevalence of fatal aircraft accidents among physician pilots during 1964 and 1965 was four times that of general aviation pilots. There was a marked drop in the total number of fatal accidents among physician pilots during the years 1966, 1967, 1968 but an increase in 1969 and further increase in 1970. Among all general aviation pilots, there has been a steady decline in fatal accidents since 1968.

17. Key Words	18. Distribution Statement
Medical Doctors, Physicians, Aircraft, Fatal, Accident, Pilot, General Aviation	Availability is unlimited. Document may be released to the National Technical Service, Springfield, Virginia 22151, for sale to the public.

19. Security Classif. (of this report)	20. Security Classif. (of this page)	21. No. of Pages	22. Price
Unclassified	Unclassified	7	$3.00

Form DOT F 1700.7 (8-69)

PHYSICIAN PILOT-IN-COMMAND FATAL FLIGHT ACCIDENTS 1964 THROUGH 1970

I. Problem.

In 1966, S. R. Mohler, et al.[1] reported that the prevalence of fatal aircraft accidents among physician pilots during 1964–65 was four times that of the general aviation pilot population. This report generated considerable interest, not only among physicians and pilots, but in the news media and general public as well. This study seeks to compare the numbers of physician-pilots killed in subsequent years, the total number of general aviation pilots killed, and identify the major causal factors involved.

II. Method.

The files of the Accident Investigation Branch of the Office of Aviation Medicine[2] were analyzed. These files contain reports from the FAA General Aviation District Office Inspectors, National Transportation Safety Board Investigators, Aviation Medical Examiners, coroners, pathologists conducting autopsies, the CAMI Biochemistry Laboratory, other laboratories conducting toxicology studies, Regional Flight Surgeons, and the Aeromedical Certification Branch.

Often it is difficult to isolate the primary causal factor and assign relative importance to contributing factors. It is felt that the major causal factors act synergistically and that many accidents would not occur if one or more of the contributing factors were not present. Therefore, it was decided to indicate the major causal factors without attempting to quantitate their relative significance.

In 1966, Robert L. Wick, Jr.[3] reported some of the difficulties in arriving at accurate accident rates for pilots with various occupations. He pointed out that we do not have accurate figures as to the number of physicans who fly, how many hours they fly annually, or number of takeoffs and landings per physician annually. These statistics figure prominently in the calculation of accident rates.

III. Results.

Figure 1 shows the number of M.D. pilots killed annually in aircraft accidents from 1964 through 1970. It does not include physicians who were aboard crashed aircraft as student pilots with instructors or as passengers. Frequently, student pilots or passengers are not identified as to occupation, so it is not possible to arrive at accuate figures for physicans in these categories. A drop in number is seen in 1966, following the report pointing out the high

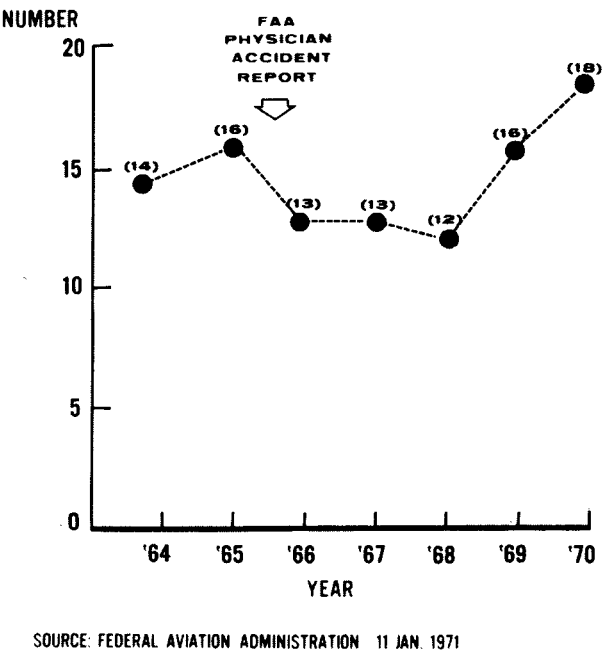

FIGURE 1. Physician (M.D.) Pilot-in-Command Fatal Aircraft Accidents.

prevalence of fatal accidents among physician pilots. This drop was sustained through 1968, but was followed by an increase in 1969 and further increase in 1970. Total General Aviation fatal accidents (Fig. 2) have shown a continuing decline since 1968. Frequently, the preliminary accident reports classify paramedical, academic,

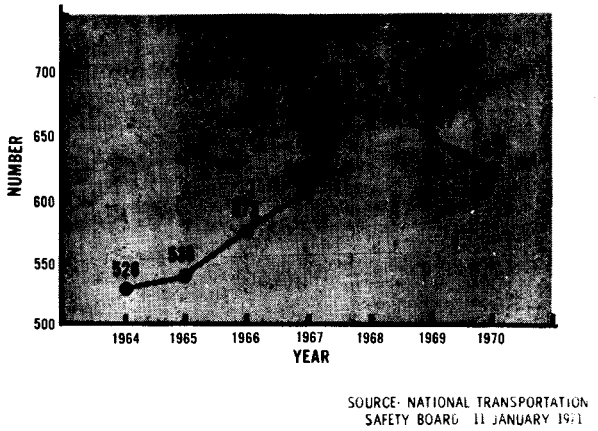

FIGURE 2. U.S. General Aviation Fatal Accidents.

and other technical personnel as doctors. For purposes of this study, careful checks were made to insure that only Medical Doctors were included.

The primary factors involved have been identified and listed with accident numbers in Table I to permit additional studies as desired. Weather appears most frequently as a primary factor (Fig. 4) with inexperience and mechanical failure well represented (Fig. 4, Table I through Table VII).

In many of the weather accidents, the pilots were aware of the hazardous conditions well in advance of encountering them. They took the time to receive weather briefings, but chose to ignore the information given. The following weather accidents have been selected from the 1970 reports to illustrate this fact.

Case 70–1217

A 43-year-old surgeon indicated to the local fixed base operator that he had to fly to a distant city on business, but would return that evening so that he could be on duty at the hospital that night. No problems were encountered on the first leg of the flight. On the return leg, he contacted the Flight Service Station several times, both before and after taking off and was advised of the deteriorating weather conditions. Although he was not instrument-rated, he continued the flight. Witnesses reported the aircraft flying very low in very hard rain with lightning and thunder just before the crash. It struck a mountain approximately 100 feet from the top. Inspection of the crash site indicated that it was in level flight at the time of impact.

Case 70–1164

The 32-year-old instrument-rated physician pilot was accompanied by his wife, also a private pilot. They were returning from a vacation and were anxious to see their three children. Weather was checked prior to taking off. The husband suggested filing for a city enroute and spending the night there because of the weather at their destination, but the wife said "No." Two other pilots indicated their intention of remaining overnight because of weather. The wife told them that her husband was instrument-rated and that they were going to "plow on and see how far they could get." They got to about fifty miles of their destination, before crashing in heavy precipitation, severe turbulence, lightning and thunder.

IV. Summary and Conclusions.

Every year, a significant number of physician pilots are killed in aircraft accidents. Often, medical associates, paramedical personnel and members of their families are also killed (Fig. 3).

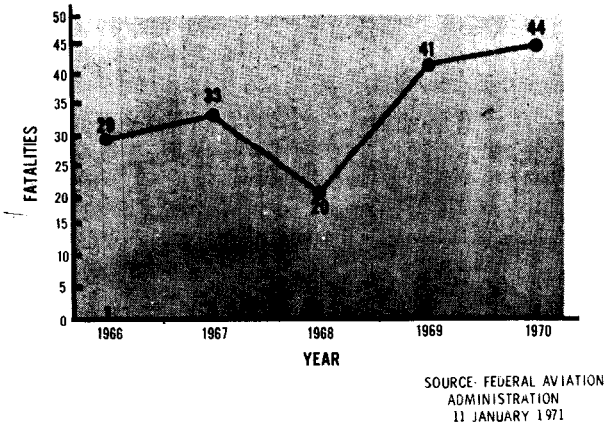

FIGURE 3. Total Fatalities in Physician Pilot-in-Command Flight Accidents.

TABLE I. Primary Causal Factors in Physician Pilot-in-Command Fatal Aircraft Accidents in 1964

Accident No.	Primary Factors
64 0087	Dusk, snow, landed on highway
64 0315	Night, marginal weather, mountains.
64-0447	Night, rain, snow, mountains.
64-0527	"No physical investigation"
64-1058	Tight turn at slow airspeed.
64-1778	Low acrobatics, fatigue
64-1958	VFR pilot flying at night in thunderstorms over mountains
64-2438	Night flight in marginal weather.
64-2479	Student pilot encountered fog.
64-2982	Gusty winds, crashed on takeoff.
64-3332	Night/fog. Three hours instrument training
64-4421	Pilot with 40 minutes solo time flew into fog.
64-4980	Overloaded, inexperienced, VFR flight into IFR weather over mountains.
64-5081	Big party the night before. Night flight. Inexperienced pilot

TABLE II. Primary Causal Factors in Physician Pilot-in-Command Fatal Aircraft Accidents in 1965

Accident No	Primary Factors
65 0298	Narcotic addict-positive toxicology for barbituates and meprobamate.
65-0611	Fuel exhaustion-landed in lake-drowned.
65-2458	Adverse weather, mountainous terrain.
65-2706	VFR pilot encountered IFR weather at night
65-2707	Night takeoff without airport lights-investigated and criticized pilot of 2706 who was associate
65-2938	Alcohol, fog, rain, mountains.
65 2978	Overloaded, took off in IFR weather, hit power lines
65-3121	Engine out on takeoff-engine trouble previous week
65-3281	Pilot showing real estate-distracted
65-3597	Weather.
65-4170	Took off at steep angle and stalled out-similar takeoff observed previous day
65-4345	Flying at treetop level dropping markers for new road to camp
65 4565	Severe weather, pilot fatigue, little IFR experience
65-4757	Fog, heavy rainstorms, vertigo reported previously
65-4822	VFR pilot flew into IFR weather, below clouds in mountains
65-5026	Battery needed charging, lineman propped plane to start. Electrical trouble developed and engine failed

TABLE III. Primary Causal Factors in Physician Pilot in Command Fatal Aircraft Accidents in 1966

Accident No.	Primary Factors
66-0038	IFR flight into fog over mountains
66-0241	Pilot lost, disoriented Fuel exhaustion
66-1507	Aircraft fully loaded, took off at steep angle
66-2207	Left engine failed. Attempted emergency landing but inadequate room. Crashed trying to climb over trees
66-2661	VFR flight into IFR weather
66-3169	VFR pilot flew into cloud layer at 75 feet Engine trouble on takeoff.
66-3352	Fire on takeoff Pilot made 180° but nose of aircraft dropped 30 feet above runway Fuel leak.
66-3486	Fog, alcohol, history of vertigo, unilateral deafness
66-4226	Noninstrument pilot flew into weather.
66-4600	Inflight fire-fuel leak.
66-4614	VFR pilot encountered IFR weather over mountains
66-5110	Noninstrument pilot crashed on takeoff from unlighted field before daylight. Fog, frost on aircraft
66-5385	Noninstrument pilot took off at night, became disoriented and crashed 1/2 mile from runway

TABLE IV. Primary Causal Factors in Physician Pilot-in-Command Fatal Aircraft Accidents in 1967

Accident No	Primary Factors
67-0473	Noninstrument pilot flew into IFR weather
67-0888	Noninstrument pilot flew into IFR weather
67-1250	Instrument pilot flew into fog, rain, icing conditions.
67-2263	Noninstrument pilot flew into IFR weather
67-2956	Noninstrument pilot flew into IFR weather.
67-3196	Noninstrument pilot flew into IFR weather.
67-3621	Midair collision in traffic pattern
67-4353	Aircraft overloaded, new auto pilot, confused IFR flight plan, overcast, possible disorientation
67-4470	New plane, flight over water, aircraft not recovered
67-4785	Fuel selector value on empty tank position, fuel starvation.
67-5441	First night flight in 90 days, disorientation, pilot felt fuel supply low and crash landed but one hour supply still on board
67-5507	Alcohol 352 mg % Hospitalized for alcoholism, released two days before accident
67-6025	VFR pilot encountered fog at night

TABLE V. Primary Causal Factors in Physician Pilot-in-Command Fatal Aircraft Accidents in 1968

Accident No.	Primary Factors
68-0919*	Simulated engine out landing. Loss of control at slow speed, low altitude. Instruction by unqualified instructor.
68-1579	Night, thunderstorms, alcohol.
68-1851*	Right engine failure on takeoff due to water contamination and/or use of improper gas tanks. Possible coronary insufficiency.
68-1980	VFR pilot encountered IFR weather and rough terrain
68-1989	Disintegration of homebuilt airplane on takeoff
68-2508	Aerobatics, alcohol.
68-3244	Attempted VFR landing in IFR conditions
68-3814	VFR pilot took off from lake, in fog at night.
68-4080	Nose high on takeoff, stalled out.
68-4338	Rain, fog. Instrument rated pilot. No evidence of mechanical malfunction. Possible incapacitation.
68-4856	Icing conditions, lost power.
68-4994*	Line man walked into propeller

* Member of Flying Physicians Association

TABLE VI. Primary Causal Factors in Physician Pilot-in-Command Fatal Aircraft Accidents in 1969

Accident No.	Primary Factors
69-0174*	Night, cloudy, fog. Pilot flying 12 hours became disoriented encountering instrument conditions at low altitude. Left leg amputation - B. K.
69-0807	Flew to the Bahamas with insufficient fuel.
69-1232	CO poisoning.
69-1560	VFR flight into IFR conditions.
69-2258	Possible physical incapacitation. Possible disorientation.
69-2591	Noninstrument pilot flew into heavy rain.
69-2935	Seaplane failed to take off and crashed into seawall. Possible altercation in cockpit.
69-3468	Propeller failure, crashed into power lines.
69-3553*	Glider pilot crashed on takeoff because of insufficient flying speed.
69-3867	Pilot attempted landing on runway with wind gusts of 50 kts. Tried to go around but stalled out and rolled to inverted position
69-4091	Pilot unable to recover from spin.
69-4167	VFR pilot flew into IFR conditions in mountainous terrain.
69-4241	Weather below minimum for any type of instrument approach.
69-4268	VFR pilot flew into IFR weather.
69-4723	VFR pilot flew into IFR weather.
69-4865	Fatigue, hypoxia-oxygen bottles were empty and minimum altitude for flight 15,000 ft

* Member of Flying Physicians Association

TABLE VII. Primary Causal Factors in Physician Pilot-in-Command Fatal Aircraft Accidents in 1970

Accident No.	Primary Factors
70-1071	Severe icing on approach, 10 medications on person.
70-0341	Engine failure over water-most likely fuel exhaustion.
70-1164	Flew into severe weather, wife anxious to get back to her three children.
70-1217	Pilot not current in aircraft or night flight.
70-1295	Noninstrument pilot flew into thunderstorm.
70-1751*	Engine failure on T/C. Fuel exhaustion. Blood alcohol 60 mg %.
70-1901	Chronic myocarditis and pericarditis. Toxicology showed phenobarbital 1.9%. No medical certificate. No weather or mechanical factors.
70-1974	VFR flight into IFR conditions.
70-2010	Midair collision.
70-3008	Pilot encountered severe down drafts on takeoff. Tried to correct and stalled out.
70-3013*	VFR flight into IFR weather in mountainous terrain.
70-3211*	Flight into a box canyon.
70-3374	Very little experience in float planes, stalled out on landing.
70-3686	Landing behind an air carrier aircraft caught in wingtip vortices. Lost control.
70-3226*	Apparent engine failure in mountains.
70-3976	Night flight into IFR weather. Pilot not experienced in either.
70-4271*	Crashed during approach in severe weather.
70-4336	Took off with rear engine inoperative. Stalled out in left turn.

* Member of Flying Physicians Association

Public attention was focused on this problem in 1966 by S. R. Mohler et al.[1] It became the topic of discussion at several meetings attended by physician pilots. A moderate drop in annual fatalities was seen possibly as a result of the safety awareness generated. Recently, however, little emphasis has been given to this problem during the physician pilot meetings and the number of annual fatalities is rising.

Physicians who are pilots have organized into a national association with local chapters that meet periodically. These meetings offer an unusual opportunity to disseminate aviation safety education. Additional effort is necessary to insure maximal participation in such meetings by all physicians who fly and continued emphasis on elimination of exposure to hazardous conditions during flight.

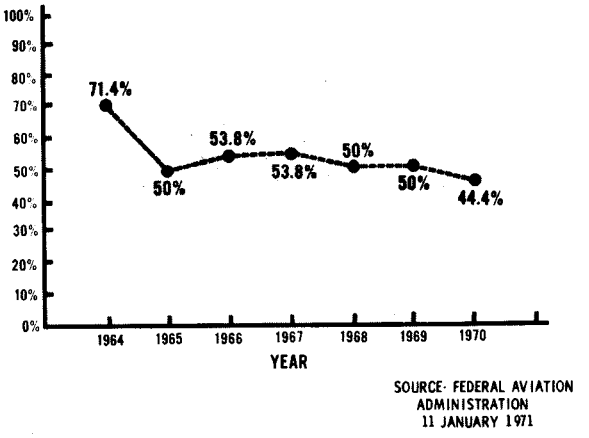

FIGURE 4. Weather as a Primary Factor in Physician Pilot-in-Command Fatal Aircraft Accidents.

FIGURE 5. Fatal Physician Pilot Accident in Southwest U.S.

REFERENCES

1. Mohler, S. R., S. F. Freud, J. E. Veregge, and E. L. Umberger. "Physician Flight Accidents." FAA Office of Aviation Medicine Report No. AM 66-25, 1966.
2. Wick, R. L., Jr. "The Relation of Aircraft Accidents to Occupations." *The Flying Physician* Vol. 10, #3, July 1966.
3. Aircraft Accident Reports, Accident Investigation Branch, Office of Aviation Medicine, Federal Aviation Administration 1964 through 1970.
4. National Transportation Safety Board Press Release SB71-1, Jan. 11, 1971.