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National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

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In reply refer to: A-92-107 through
A-92-110

Honorable Thomas C. Richards
Administrator
Federal Aviation Administration
Washington, D.C. 20591

The Safety Board recently completed a study on alcohol and other drug involvement in fatal general aviation accidents that occurred from 1983 through 1988.¹ Despite a downward trend in alcohol-involved fatal general aviation accidents, about 6 percent of the fatally injured pilots in the study were flying while impaired. The mean blood alcohol concentration (BAC) of the alcohol-positive pilots was 0.15 percent, nearly four times the 0.04-percent BAC offense level established by current Federal Aviation Administration (FAA) regulations. More than 95 percent of the alcohol-positive pilots had a BAC that exceeded the 0.04-percent BAC offense level, more than 74 percent had a BAC that exceeded the 0.10-percent level established as illegal for drivers by most of the driving-while-intoxicated laws enacted by States, and more than 47 percent had a BAC that exceeded 0.15 percent, the level that is strongly associated with problem drinking. Further, the data show evidence of certificate violations (pertaining to biennial flight review, medical certificates, and airman certificates), and flying inexperience.

Although FAA regulations prohibit acting or attempting to act as a flight crewmember under the influence of alcohol or other drugs and within 8 hours of consuming any alcoholic beverage (known as the 8-hour rule), current regulations also prohibit flying with a BAC at or above 0.04 percent (14 CFR 91.17(a)(1) and (4), respectively). Subsequently, the regulations may lead some pilots to believe that some alcohol consumption is acceptable. Using a conservative estimate of metabolic rates of alcohol (0.015 percent BAC per hour), it would take nearly 8 hours to reduce the mean 0.15-percent BAC level found in the alcohol-positive fatally injured pilots for the 1983 through 1988 period to the 0.04-percent BAC offense level established in the current FAA regulations.

¹ National Transportation Safety Board. 1992. Alcohol and other drug involvement in fatal general aviation accidents, 1983 through 1988. Safety Study NTSB/SS-92/03. Washington, DC.

The high BAC levels found in this study are similar to the high BAC levels found in a 1984 Safety Board study.² As a result of that study, the Board recommended that the FAA eliminate the mixed message on "allowable blood alcohol concentrations" by reducing the BAC offense level to the lowest possible level consistent with the capability of testing equipment to measure any ingested alcohol (Safety Recommendation A-84-45, issued May 1, 1984). The recommendation was classified as "Closed--Unacceptable Action" on September 16, 1985, after the FAA modified Part 91 and established 0.04-percent BAC as the level at or beyond which an FAA violation occurs. The Safety Board continues to believe that pilot performance can be impaired at blood alcohol levels below 0.04 percent and that the FAA regulations should prohibit acting or attempting to act as a crewmember when the individual has a BAC above zero.

The Safety Board has also recommended (in Safety Recommendation I-89-12, issued to the DOT December 5, 1989) a zero BAC for Federal and private sector employees in safety-sensitive positions. The recommendation is classified as "Open--Unacceptable Response" because of inaction by the Department of Transportation. However, in October 1991, Congress passed legislation (P. L. 102-143) that requires the DOT to establish regulations for alcohol testing of such employees. The Board encourages the DOT and the FAA to establish provisions for alcohol-free flightcrews in its regulations. The Safety Board will withhold any further recommendation on a zero BAC until receipt and review of DOT's response to Safety Recommendation I-89-12 and its rulemaking on alcohol testing.

Under the Federal regulations pertaining to alcohol and drug testing in civil aviation (14 CFR 91.17), which include general aviation pilots, pilots must submit to toxicological testing for alcohol if a test is requested by a law enforcement officer under the provisions of State law. If a toxicological (or chemical) test for alcohol is requested from a pilot by a law enforcement officer, the pilot is required by Federal regulation to report the results to the FAA. The law enforcement officer may also report the test results to the FAA, if required by provisions of State law.

Under most State laws, an officer may not request a test unless an offense has been committed in the presence of the officer or the officer has cause to believe that an offense has been committed. The authority to request such a test is dependent on the existence of a State law pertaining to flying while intoxicated.

Although 44 States have some form of law related to flying-while-intoxicated (FWI), the provisions of the law vary from State to State. Only 16 States with FWI laws have an implied consent provision (for chemical testing) and establish a BAC level at which a pilot is presumed to be impaired; 15 of these 16 States require reporting of test results to the FAA.

² National Transportation Safety Board. 1984. Statistical review of alcohol-involved aviation accidents. Safety Study NTSB/SS-84/03. Washington, DC.

States cannot adequately identify pilots who fly under the influence of an impairing substance and corrective actions cannot be taken without comprehensive FWI laws. Thus, in Safety Recommendation A-92-113 issued as a result of the study, the Safety Board urged States to enact comprehensive laws pertaining to alcohol and drug use in aviation, or to amend existing laws as appropriate to include: (a) an implied consent provision to obtain biological specimen(s) for toxicological tests, for alcohol and other drugs, of pilots involved in accidents that result in death, serious injury, or substantial aircraft damage; (b) definition of the specimen(s) that may be obtained--such as breath, blood, urine, and/or other bodily substance; (c) a blood alcohol concentration that defines the offense; and (d) a requirement to report to the Federal Aviation Administration toxicological test results and refusals to submit to testing.

According to conversations with the FAA personnel at FAA headquarters and the Civil Aviation Medical Institute (CAMI), States with laws that require reporting of toxicological test results from an aviation accident customarily report the results to the FAA Flight Standards District Office (FSDO). It was not clear from these conversations, however, if the results are then transferred to the FAA Flight Standards, Aviation Medicine, or Accident Investigation Office, or what action, if any, is taken on the test results. The Safety Board has encountered similar responses on the subject in other conversations with FAA personnel during the last several years. The lack of consistent and specific responses suggests that the FAA has no established procedures for receiving, processing, and analyzing State toxicological test results transferred from the FSDO. The Safety Board believes that the FAA should establish procedures for receiving, processing, and analyzing toxicological test results reported by the States, including the designation of appropriate FAA field offices (such as the FSDOs or other appropriate FAA offices) to which States are to report toxicological test results and refusals to submit to testing, and the designation of one office within the FAA to which the FAA field offices transfer the test results for analysis.

State and local aviation authorities should be made aware of the procedures established by the FAA for the reporting of toxicological test results to the FAA. Dissemination of the notification procedures could be aided by the National Association of State Aviation Officials (NASAO), which encourages cooperation among States and the Federal government on matters pertaining to civil aviation and provides member access to information on State and Federal aviation programs. Consequently, the Safety Board believes that the FAA should, in conjunction with the NASAO, distribute to State aviation authorities and local law enforcement agencies the procedures for States to follow when notifying the FAA of toxicological test results and refusals to submit to testing.

There appears to be no system-wide FAA drug enforcement or testing program that addresses toxicological testing for drugs following nonfatal general aviation accidents. The FAA regulations require a pilot (or other crewmember) to submit to a test for alcohol when requested by a law enforcement officer and when, under authority of State or local laws, the officer has cause to believe that the pilot is intoxicated; however, the FAA

regulations do not require a pilot to submit to a test for drugs when there is cause to believe that the pilot is impaired by drugs. Nevertheless, because some States currently extend, and others may consider extending, their alcohol testing provisions to authorize postaccident testing of general aviation pilots for drugs other than alcohol, pilots may be requested to submit to a test for drugs. According to 14 CFR 91.17(d), the results of any tests for drugs may be requested by the FAA Administrator when there is a "reasonable basis to believe" that a drug-impaired flight occurred. The FAA regulations do not prohibit a general aviation pilot from refusing a drug test.

Most State laws prohibit operation of motor vehicles by persons under the influence of an impairing substance (alcohol and other drugs). Following a nonfatal highway accident, a law enforcement officer may request a toxicological test from a driver when the officer has reasonable suspicion that the driver is impaired by drugs. This suspicion is likely to be based on characteristics such as circumstances of the accident, driver behavior and physiological characteristics, time of day, and the officer's experience with other accidents and drivers.

Following a nonfatal aviation accident, a law enforcement officer may have a reasonable suspicion of drug impairment and may request a toxicological test from the pilot for drugs in States with laws that provide the authority to test for drugs. The FAA considers the operation of an aircraft while under the influence of an impairing substance to be grounds for action against the crewmember's certificate or rating (Section 61.15). Thus, it seems reasonable that the FAA should require crewmembers to submit to a toxicological test for drugs, when such a test is requested by a law enforcement officer upon reasonable suspicion, just as the FAA requires of crewmembers regarding tests for alcohol. Accordingly, the Safety Board believes that the FAA should amend 14 CFR 91.17 to require crewmembers to submit to a toxicological test for drugs when requested by a law enforcement officer under authorization of State or local laws.

Data from the recent study indicate that substance abuse countermeasures are especially necessary for pilots with high BAC levels and for pilots who have limited flying experience.

Pilots-in-command in the alcohol-involved fatal general aviation accidents tended to have less flying experience than did pilots in the substance-free accidents.³ Further, the percentage of pilots with student certificates was three times greater in the alcohol-involved group than in the substance-free group. The difference may indicate a lack of understanding by student and recently certificated pilots about the effects of alcohol impairment on a person's ability to perform flying tasks and to make sound judgments. It may also indicate a need for greater emphasis in

³ As used in this letter, substance-free means that the Safety Board did not cite alcohol or other drugs as a cause or factor in the accidents. Some of the substance-free accidents may have involved alcohol or other drugs, but there was no evidence of their use.

ground school and by certified flight instructors on the effects of alcohol and drug use to create a better understanding among students and inexperienced pilots. Of those pilots with a BAC of 0.15 percent or higher, 17.7 percent held a student certificate.

Ground school can serve an important role in the education of new pilots on the effects of alcohol and other drugs on performance. However, ground school instructors and class materials (including textbooks) may address alcohol and other drugs primarily in terms of FAA regulations (the 0.04-percent BAC offense level, and the 8-hour rule) and limit the amount of information pertaining to the effects on performance. Although the instructors and textbooks address alcohol and other drugs, the Safety Board is concerned that the emphasis is not adequate.

Because ground school must cover many topics that are critical to learning about the operation of an airplane, there is a continuing need after ground school and flight training for educational and informational material that pertains to the effects of alcohol and other drugs on pilot performance, not only for pilots with limited flying experience but for all pilots as well. The need for materials on alcohol was previously addressed in the 1984 Safety Board study. The Board recommended that the FAA develop educational and classroom materials on the subject and distribute them through its accident prevention program to appropriate FAA personnel, pilots, fixed-base operators, flying clubs, flight schools, and flight instructors (Safety Recommendation A-84-47, issued May 4, 1984). Based on the action taken by the FAA, and the FAA's plans to develop new materials as information became available, the Safety Board classified the recommendation as "Closed--Acceptable Action" on February 19, 1985. A similar recommendation was issued to the Aircraft Owners and Pilots Association, the National Agricultural Aviation Association, and the National Association of Flight Instructors urging the organizations to disseminate to their members information on the dangers of alcohol use in aviation (A-84-51, issued May 4, 1984). Based on the actions taken by the organizations, the Safety Board classified the recommendation as "Closed--Acceptable Action" on August 27, 1987.

The efforts taken by the FAA and various organizations to inform pilots about the effects of alcohol on flying may have helped to reduce the incidence of alcohol involvement in fatal aviation accidents. However, considering the high BAC levels found in the recent Safety Board study and the 1984 study, additional efforts appear to be warranted to prevent pilots from flying while impaired.

The Safety Board believes that the recent reductions in drunk driving on the highways can be attributed to legislative action, improved law enforcement, citizen advocacy, and to the development and promotion of intervention programs. Highway safety advocates started personal intervention programs with public information messages more than 20 years ago (such as "Friends Don't Let Friends Drive Drunk") and have expanded them to include actions that persons other than the impaired driver may take to prevent a person from driving while intoxicated (for example, "Take the keys," don't ride with a drunk driver, report drunk drivers). The Safety Board believes that peer intervention programs directed at general aviation

could also reduce the incidence of flying while impaired by alcohol or other drugs, which, in turn, should reduce the number of accidents attributed to impairment.

Materials that advocate intervention and that relate techniques to successfully and safely intervene when a pilot attempts to fly while impaired would enhance current or future programs that promote aviation education, safety, and accident prevention. These materials, such as brochures and the display of posters at FAA Flight Standards District Offices, fixed-base facilities, and airports, should be directed toward persons in a position to intervene; for example, other pilots, passengers, fixed-base operators, flight instructors, aviation personnel, and friends and family of flight crewmembers. Further, intervention should also be promoted through mailings to certificate holders and flight instructors, and material for aviation periodicals and other media.

The Safety Board believes that the FAA and organizations representing pilots, fixed-base operators, flight instructors, and State aviation officials should be part of the efforts to reduce the number of general aviation accidents involving alcohol or other drugs through educational and informational materials. Accordingly, the Board believes that the FAA and appropriate aviation trade associations should develop and disseminate new educational and informational materials that may be needed on (a) the effects of alcohol and other drugs on flying and in general aviation accidents, and (b) procedures or actions that will encourage persons to intervene when a general aviation pilot attempts to fly after consuming alcohol or using other drugs.

Therefore, as a result of its safety study, the National Transportation Safety Board recommends that the Federal Aviation Administration:

Establish procedures for receiving, processing, and analyzing toxicological test results reported by the States, including the designation of appropriate Federal Aviation Administration (FAA) field offices (such as the Flight Standards District Offices or other appropriate FAA offices) to which States are to report toxicological test results and refusals to submit to testing, and the designation of one office within the FAA to which the FAA field offices transfer the test results for analysis. (Class II, Priority Action) (A-92-107)

Distribute, in conjunction with the National Association of State Aviation Officials, to State aviation authorities and law enforcement agencies the procedures for States to follow when notifying the Federal Aviation Administration of toxicological test results and refusals to submit to testing. (Class II, Priority Action) (A-92-108)

Amend 14 CFR 91.17 to require crewmembers to submit to a toxicological test for drugs when, under authorization of State or local laws, a test is requested by a law enforcement officer. (Class II, Priority Action) (A-92-109)

With the assistance of the Aircraft Owners and Pilots Association, the Experimental Aircraft Association, the National Air Transportation Association, the National Agricultural Aviation Association, the National Association of Flight Instructors, and the National Association of State Aviation Officials, develop and disseminate, as appropriate, any new educational and informational materials that may be needed on (a) the effects of alcohol and other drugs on flying and in general aviation accidents, and (b) procedures or actions that will encourage pilots, fixed-base operator personnel, flight instructors, Flight Standards District Office personnel, aviation safety specialists, and family and friends of pilots to intervene when a general aviation pilot attempts to fly after consuming alcohol or using other drugs. (Class II, Priority Action) (A-92-110)

Also as a result of its safety study, the Safety Board issued recommendations to the Governors and Legislative Leaders of the States, the Aircraft Owners and Pilots Association, the Experimental Aircraft Association, the National Agricultural Aviation Association, the National Air Transportation Association, the National Association of Flight Instructors, and the National Association of State Aviation Officials.

Chairman VOGT, Vice Chairman COUGHLIN, and Members LAUBER, HART, and HAMMERSCHMIDT concurred in these recommendations.



By: Carl W. Vogt
Chairman