DEPARTMENT OF TRANSPORTATION

Office of the Secretary

14 CFR Chs. I and III

23 CFR Chs. I, II, III, and IV

33 CFR Ch. I

46 CFR Chs. I and III

49 CFR Subtitle A, Chs. II, III, IV, V and VI

[OST Docket No. 46574, Notice No. 89-22]

RIN 2105-AB52

Alcohol Abuse Prevention Program for the Transportation Industry

AGENCY: Office of the Secretary, DOT.

ACTION: Advance Notice of Proposed Rulemaking.

SUMMARY: The Department of Transportation is exploring the need to adopt additional regulations for the transportation modes it regulates to prevent employees from performing sensitive safety- and security-related functions while under the influence of alcohol. This ANPRM solicits public comment on the scope of the problem, the need for additional action and the feasibility and scope of several possible options, if further action is deemed necessary.

DATE: Comments on the ANPRM must be received on or before January 31, 1990.

ADDRESS: Comments on the ANPRM should be mailed to Documentary Services Division, C-55, Department of Transportation, Room 4107, Docket 46574, 400 Seventh Street, SW., Washington, DC 20590. In order to provide a copy for each modal administration's docket and to facilitate the Department's review, we request that an original and seven additional copies of the comments be submitted. Because of the size and complexity of the document, we also ask commenters to designate the section letters and numbers to which their comments refer. Comments will be available for review by the public at this address from 9:00 a.m. through 5:00 p.m., Monday through Friday. Persons wishing the agency to acknowledge receipt of their comments should include a stamped, self-addressed postcard with their comments. The Documentary Services Division will time and date-stamp the card and return it to the commenter. The comments will be reviewed and, in the event that further action is taken, they will be furnished to those modal administrations that are responsible for taking the action.

FOR FURTHER INFORMATION CONTACT: Neil Eisner, Assistant General Counsel for Regulations and Enforcement, or Gwyneth Radloff, Attorney, Department of Transportation, (202) 366-9305, 400 7th Street SW., Washington, DC 20590.

SUPPLEMENTARY INFORMATION:

Table of Contents

I. Introduction

A. Background

The Department of Transportation (DOT or Department) is comprised of the Office of the Secretary (OST) and nine separate modal administrations: The Federal Aviation Administration (FAA), the Federal Highway Administration (FHWA), the Federal Railroad Administration (FRA), the Maritime Administration (MARAD), the National Highway Traffic Safety Administration (NHTSA), the Research and Special Programs Administration (RSPA), the St. Lawrence Seaway Development Corporation (SLSDC), the Urban Mass Transportation Administration (UMTA), and the United States Coast Guard (USCG).

Each of the modal administrations operates under different statutory authority; for example, some extensively regulate actions by persons within their mode of transportation, while others do not. As discussed below in greater detail, the Department, through its modal administrations, already has implemented several programs designed to address the use and abuse of alcohol by transportation workers. The states also are active in combating the use and abuse of alcohol; some of these efforts are funded through the Department.

Six of the Department's modes (USCG, FAA, FHWA, FRA, RSPA, and UMTA) recently issued drug testing rules for members of their regulated industries (53 FR 47002 et. seq., Nov. 21, 1988). The rules apply to persons performing sensitive safety- and security-related functions in commercial operations.

During the drug testing rulemakings, the Department noted on numerous occasions that alcohol is a drug. The Department recognized its wide use, its addictive nature, and the number of transportation-related deaths and injuries that result every year from its abuse. However, the Department also realized that, for numerous reasons, the solution to the alcohol abuse problem may be very different from that concerning other drugs, such as cocaine or marijuana. For that reason, with one exception, the modal administrations did not include alcohol among the list of substances to be tested for under the drug testing regulations. (Pursuant to a statutory mandate, the Coast Guard required post-accident alcohol testing, in an amendment to an existing rule permitting that testing. FRA had previously included alcohol in its post-accident testing mandate and had authorized alcohol testing for reasonable cause and pre-employment.) In announcing the drug testing rules, then Secretary of Transportation, Jim Burnley, stated that he had directed his General Counsel's Office to review the Department's existing alcohol regulations to determine if they were sufficient. The extensive press coverage of and public interest in the possible involvement of alcohol in the Exxon Valdez oil spill heightened the governmental interest in this area.

In his June 15, 1989, testimony before the Senate Committee on Commerce, Science and Technology, Secretary Skinner committed the Department to exploring further the need for additional regulations on alcohol use. This ANPRM is intended to elicit public comment on whether the Department's current regulatory requirements and programs are sufficient to respond to the hazards of alcohol use and abuse in DOT-regulated transportation industries and what additional action, if any, should be taken.

If further rulemaking action is necessary, the Department could consider a number of options that could improve safety by reducing alcohol abuse in DOT-regulated transportation industries. The list that follows is not all-inclusive and options may be combined. The options include:

1. Requiring employers to establish Employee Assistance Programs (EAP) that provide education on the dangers of alcohol abuse and training to detect alcohol use or impairment on the job;

2. Requiring employers to set up self- and peer-referral programs designed to identify alcohol abusers and get them into rehabilitation programs, with the understanding that the identified abusers, if rehabilitation is successfully completed, could retain their jobs;

3. Requiring alcohol testing of transportation employees similar in whole or in part to our drug testing rules, summarized in Appendix B (e.g., preemployment, periodic, reasonable cause, post-accident and random testing);

4. Requiring pre-performance testing prior to permitting an employee to operate a vehicle or perform safety- or security-related duties (e.g., a pilot could be tested before entering the cockpit to fly an airplane); and/or

5. (A nonrulemaking option) encouraging the states to implement safety programs directed at alcohol abuse and to increase their enforcement efforts.

If further regulatory action is deemed necessary after a review of the comments on this ANPRM, separate dockets will be set up and notices of proposed rulemakings will be developed by each of the affected modal administrations.

B. Major Issues

The Department particularly desires public comment on the following issues. This list is intended only to serve as a focal point and is not exhaustive. Following the list, there is an extensive discussion of these and other issues, and readers will note many questions throughout the document.

1. Are Additional Measures Necessary To Control Alcohol Abuse Among Transportation Workers?

How well are existing regulations and programs working? We have anecdotal reports that alcohol use is more widespread among transportation workers than other drug abuse, but are there supportive data? Are further regulations needed or would other actions such as increased enforcement of existing rules be more effective?

2. What Should Be Prohibited?

If we decide that new prohibitions or new testing for alcohol is appropriate, an important issue is what use of alcohol to prohibit. Unlike some other drugs, alcohol is a legal substance with legally and socially acceptable uses, at least for persons over 21 years of age. The Department already has made some decisions on what to prohibit. Most of the modes regulating commercial transportation (FAA, FHWA, FRA and Coast Guard) have selected a .04 percent blood alcohol concentration (BAC) level as the standard for determining whether a commercial operator is under the influence of alcohol, and prohibit any use of alcohol on the job. Some modes (USCG, FAA and FHWA) subject commercial operators to pre-duty abstinence periods. FHWA rules require that commercial vehicle operators with any measurable BAC level be placed out-of-service for a 24-hour period. Recreational boaters are prohibited only from being intoxicated, which correlates generally to a BAC of .10 percent. The BAC level is a ratio of the number of grams of alcohol per 100 milliliters of blood; for the purpose of determining BAC through an analysis of the breath, the amount of alcohol in one part of blood is presumed to equal the amount of alcohol in 2100 parts of expired breath sample (by volume).

Should the department undertake to make the transportation industries alcohol-free? Is this practicable, given the fact that alcohol is a legal substance? Or should the Department target impairment on the job, which poses the greatest danger? If so, where should the line be drawn? Should there be differences in this respect for different industries or occupations?

3. If Further Action Is Necessary, What General Forms Should It Take?

a. *Education.* Should the Department mandate employer-provided alcohol abuse training? Should educational efforts focus on convincing abusers to seek treatment or on training supervisors to identify problem drinkers? Are there data to validate the success of alcohol education programs? What elements are necessary for a successful program? Should educational

efforts be coupled with self- and peer-referral rehabilitation programs? Are educational programs more successful if coupled with increased enforcement efforts?

b. *Enforcement.* Are the federal and state penalties for alcohol use sufficient? Are effective actions being taken to ensure compliance with alcohol restrictions? What enforcement strategies are likely to be most effective? What should be the roles of employers and the Federal, state and local governments?

c. *Alcohol Testing.* Mandatory testing programs are costly and inevitably controversial. The Department's recent experience with imposing mandatory drug tests may provide some guidance, but we recognize that alcohol testing may involve different problems.

To what extent do our current drug rules serve as a viable model for alcohol testing? What changes would be necessary to account for the differences between alcohol and other drugs? Does widespread mandatory alcohol testing make sense if we choose to prohibit intoxication or impairment as a distinct from all use of alcohol? The signs of alcohol intoxication are much more widely recognized among the general population than the indicators of drug use. On the other hand, "functional" alcoholics can often mask signs of intoxication. Further, moderate levels of alcohol can impair certain faculties without constituting "intoxication." Would it be cost-effective to randomly test for alcohol intoxication? If not, should the Department require, at a minimum, post accident and reasonable cause testing for alcohol intoxication, where not already required?

d. *State Programs.* State and local governments have extensive experience in dealing with alcohol impairment. Testing for the presence of alcohol has traditionally been done by State enforcement personnel (usually as part of a stop of an individual on the highways). Some States have laws against boating while intoxicated and some states have laws against flying while intoxicated. Under FAA rules, crewmembers must submit to state tests upon request by a state law enforcement officer. The ability to test generally is predicated upon establishing reasonable suspicion to stop, probable cause to test, followed by an arrest if warranted, and finally, conducting a second and more sophisticated test (which would be used as evidence). In what areas can the Department make use of the states' resources and expertise?

4. What Should Be the Consequences for an Employee Identified as Using Alcohol on the Job, Being Under the Influence While on the Job, or Improperly Using Alcohol Prior to Work?

Should all who are found to be under the influence be removed from safety- and security-related jobs until they are rehabilitated? Should the function they were performing when under the influence be relevant? (e.g., filling out paperwork at a desk?) Should an opportunity for rehabilitation be required? Are there distinctions that warrant a federal role in mandating at least one opportunity for rehabilitation for alcohol abuse in light of DOT's position that such a role was inappropriate in the drug area? Rehabilitation may be more successful for alcohol users than for at least some kinds of drug use. Use of alcohol is also legal for persons aged 21 and older. Should either or both of these factors influence how we treat persons identified as alcohol abusers? What is the success rate of existing programs? Should the circumstances of use (on the job, for example) be a factor in determining whether an employee should have a right to rehabilitation? What about the circumstances of identification? Should self-identified problem users be treated differently? Should the level of consumption be a consideration? Should it matter whether the abuse was a cause of an accident? Should a job be held open in the event an employee takes advantage of an opportunity for rehabilitation?

C. General Information and Definitions

Throughout this notice, we have generally relied on or referred to the results of many studies concerning alcohol. Parenthetical references to these studies are included in the text; their full names are listed alphabetically in a bibliography in Appendix A. Copies of all of these studies have been placed in the rulemaking docket. It is important to note that the data we have are not complete; often the database includes only those tests that were performed. Tests are performed after some accidents, but not others depending upon current regulatory requirements, the availability of state enforcement personnel and location and timing of accidents. Also, data are not comparable among the transportation modes, because of differences in reporting requirements, databases and time periods. In addition, the referenced studies generally used different parameters and are not comparable to each other. We welcome the submission of additional data from commenters.

Many of the words relating to alcohol are used interchangeably in our society, which may cause some confusion. In this document, we use the terms "intoxication", "driving while intoxicated" (DWI) and "driving under the influence" (DUI) to refer to the same thing: violation of State and/or Federal BAC standards defining intoxication. "Zero tolerance" refers to a 0.00 BAC standard. "Impairment" and "under the influence" mean affected by alcohol ingestion, without regard to a specific BAC level. An "active alcoholic" is an current problem drinker. Some active alcoholics can successfully mask the effects of drinking and function in their jobs without detection for long periods of time; these people are often referred to as "functional alcoholics", but may still be safety risks in transportation.

II. The Problem of Alcohol Use and Abuse

A. Effect of Alcohol

The potential effects of alcohol abuse are substantial in terms of lives lost and environmental damage. It claims at least 100,000 lives annually, 25 times as many as all illegal drugs combined. In 1988, slightly over 47,000 deaths occurred on our nation's highways, of which 39 percent involved an intoxicated driver or non-occupant (with BAC over 0.10%), and another 11 percent where at least some alcohol was involved. (National Highway Traffic Safety Administration, "Drunk Driving Facts," July 1989).

Ethanol (the psychoactive component beverages) is a central nervous system depressant. It has been widely recognized for years that consumption of alcohol can degrade human performance of demanding or delicate tasks. However, there is somewhat less agreement about how much alcohol must be ingested before there is a significant deterioration in performance. Studies have indicated that the effects of alcohol vary among individuals, and, even for a given individual, alcohol will have varying effects depending on such factors as motivation, fatigue, and previous experience with alcohol (Zero Alcohol, 1987; Ryder, 1981; Landauer, 1983; Lister, 1983). One reason for the substantial variation among individuals is that ingestion of a specified quantity of alcohol will not necessarily produce the same BAC in two different people, even if they have the same body weight (Zero Alcohol, 1987).

In one study, for example, it was found that a particular body-weight-adjusted dose of ethanol could produce a range of BAC levels of .036 to .095 percent (O'Neill, 1983). In addition,

alcohol appears to enter the blood stream at different rates in different people (Zero Alcohol, 1987). In another study, subjects were given controlled doses and had equal amounts of food in their system. Nevertheless, the time required to reach the peak BAC level varied from 15 to 90 minutes after ingestion (Wilson, 1984).

ALCOHOL LEVELS BY WEIGHT

[Here are blood alcohol levels based on one's weight and the amount of alcohol consumed within an hour.]

	Weight			
	100	140	180	220
Beer:				
1 glass	.05	.04	.03	.02
2 glasses	.08	.06	.05	.05
3 glasses	.11	.09	.08	.07
Wine:				
1 glass	.03	.03	.02	.02
2 glasses	.06	.05	.04	.03
3 glasses	.08	.06	.04	.04
Distilled spirits:				
1 ounce	.04	.03	.02	.02
2 ounces	.07	.05	.04	.03
3 ounces	.09	.07	.06	.05

Source National Safety Council.

There are also performance differences between individuals that are unrelated to the blood alcohol concentration. It appears, for example, that highly skilled professionals may be better able to compensate for the physiological effects of alcohol than persons who are less skilled, particularly at lower BAC levels. In two studies comparing the effect of alcohol on the performance of racing drivers and ordinary drivers on a closed track, the skill of the ordinary drivers showed some deterioration at a BAC of .05 percent, while the racing drivers showed no impairment until they had substantially higher BAC levels (Forney, 1961; Lovibond, 1970). Similarly, in a comparison of nonprofessional and professional pilots at BAC's of .04, .08, and .12 percent, the nonprofessionals made numerous errors in tracking, while the professionals' tracking ability did not decrease even at the highest BAC levels. (Billings, 1972) (However, the study noted that the professional pilots committed more procedural errors than normal after alcohol consumption. There may also be compounding factors, such as fatigue, that could affect results in a real-world situation.)

Under the circumstances, it must be recognized that a uniform standard will necessarily have nonuniform effects when measured against the behavior of specific individuals. However, this has not limited the states' ability to define and enforce driving-under-the-influence (DUI) standards and does not mean that we cannot take action. Rather, it means merely that a wide variety of factors must be weighed as we reevaluate our current requirements and consider new ones.

Most States have adopted a BAC of .10 percent as the definition of intoxication in connection with laws on driving under the influence. Some use it as a rebuttable presumption of a violation; others as a *per se* violation. (Several states are considering lowering their BAC standards to .08; and a number of states are in the process of considering adoption of the FHWA BAC standard for commercial drivers of .04.) States with BAC standards for operating vessels of aircraft typically use .10 percent.

However, as indicated above, a number of laboratory studies have shown that performance on some tasks can begin to deteriorate at BAC levels well under .10 percent (Moskowitz, 1973; Drew, 1959; Landauer, 1983). Some studies have suggested that performance deteriorates in a linear fashion, beginning with the lowest levels tested (Moskowitz, 1985; Drew, 1959). BAC's lower than .05 percent have been associated with increases in errors in tasks requiring divided attention, and it appears that cognitive performance is decreased for most individuals at BAC's of .04 percent or less (Zero Alcohol, 1987; Evans, 1974). Low BAC levels have also been shown to affect a driver's stopping distance and to increase errors in steering (Laurell, 1977). There is no definitive answer to how much the risk of accident occurrence increases as a result of the performance deficit, but some relationship can be assumed. Those administrations in the Department that have set allowable BAC levels for transportation workers (FAA, FHWA, FRA and Coast Guard) generally have used .04 percent as the maximum.

In addition, there is some evidence that serious impairment may continue after alcohol has been eliminated from a person's blood. National Institute on Alcohol Abuse and Alcoholism-supported researchers found that "handover effects" seriously impaired the performance of ten pilots on a flight simulator for as long as fourteen hours after they consumed enough alcohol to render them legally intoxicated in most states. They showed an inability to prevent the plane from veering away from a straight course and to hold the plane straight on landings. The researchers found no correlation between the pilots' degree of flight experience or their subjective interpretation of their performance and the investigators' objective measurements. (American Journal of Psychiatry, December 1986). BAC tests in the above situation would be negative.

A common problem is multiple substance abuse, impairment by a combination of alcohol and other drugs. The tendency of drug or alcohol abusers to abuse other substances poses a serious danger to the travelling public and complicates the treatment of the abuser. Combinations of substances can have unforeseeable synergistic effects, resulting in greater impairment. We also are concerned about the propensity of users to switch from abusing one substance to abusing another depending upon what is being tested for.

B. The Alcohol Problem—Generally

The National Institute on Alcohol Abuse and Alcoholism (NIAAA) reported in 1987 that, in the United States, two in every three adults drink, but 10 percent of those drinkers consume half of the nation's beer, wine, and liquor. An estimated 17 million U.S. adults are alcoholics, which is about six times higher than the number of cocaine users. (NIDA study, 1989).

C. Costs of Alcohol Abuse to Society

While it is difficult to estimate the precise cost to society from alcohol abuse, there is no doubt that the cost is enormous. The potential effects of alcohol abuse are substantial in terms of lives lost, personal injuries, property damage, business losses (lost productivity, absenteeism, etc.) and environmental damage.

According to a Research Triangle Institute study performed for the Department of Health and Human Services, the overall economic cost to American society from alcohol abuse was $89.5 billion in 1980. This amount represents direct costs, such as medical treatment, and indirect costs, such as lost wages and reduced productivity. In 1987, the NIAAA estimated the economic costs to society of alcohol abuse to be nearly $117 billion a year, including $18 billion from premature deaths, $66 billion in lost productivity, and $13 billion for rehabilitation. Assuming the base numbers are still the same, inflation presumably has increased the cost in current dollars.

D. Alcohol Abuse in the Transportation Industry

1. General

Generally, the Department's anti-alcohol abuse efforts have focused on alcohol as it affects an individual's medical qualifications; prohibitions on

on-duty use and operating while under the influence, and, in certain cases, use during defined pre-duty periods; and sanctions for violations of the Federal regulatory scheme, as well as sanctions for violations of State alcohol laws. Thus, alcohol testing, with limited exceptions, is left to State enforcement personnel. (Coast Guard and FRA rules provide for post-accident and reasonable cause testing. As noted above, the FAA requires crewmembers to submit to state tests upon request.) Each of the following sections briefly describes the existing federal rules by mode of transportation; Appendix B describes them in additional detail. The following sections also contain data that the Department has on the alcohol problem in each mode.

We specifically invite commenters to provide any additional relevant data or statistics about the alcohol problem in the different modes of transportation.

2. Aviation

The FAA regulations prohibit a person from acting or attempting to act as an aircraft crewmember if he or she is under the influence of alcohol, or has consumed any alcoholic beverage within 8 hours of reporting for duty. They also prohibit crewmembers from flying with a BAC of .04 or higher. If a history of drug dependence, alcoholism, or mental problems is discovered, the FAA may disqualify the pilot. In 1987, the Department's Inspector General's office checked the National Driver Register (NDR) and records in the Florida Department of Motor Vehicles; they found that nearly 8,000 FAA-certified pilots in Florida had been convicted of drunk-driving offenses. The FAA was unaware of these DUI convictions because the pilots had not reported them to the FAA as required. The FAA recently issued a DUI enforcement policy and an NPRM that includes, among other matters, a process for examining driving records.

There has never been an accident involving a transport-category U.S. air carrier in which the probable cause was attributed to alcohol use. However, starting in the early seventies, the Air Line Pilots Association and the major airlines, in cooperation with the FAA, developed a program to identify alcoholic pilots, so that they could be treated and, if appropriate, returned to duty. More than 1,200 pilots have been through this program, with a relapse rate of less than 15 percent. Since the program provides for stringent surveillance of treated pilots, there has been no compromise of safety. Nevertheless, the existence of this extensive a program demonstrates that the air carrier industry is not immune to the problem of alcohol abuse. We do not have any data, however, on the costs of alcohol abuse in terms of such things as lost productivity and increased medical expenses.

The number of general aviation accidents that can actually be attributed to the use of alcohol is uncertain. In the past, general aviation accidents have usually not been investigated by the National Transportation Safety Board (NTSB) to determine cause. FAA accident investigations are intended merely to be fact-finding and do not make a finding of probable cause. We do know, however, that in 3,949 general aviation accidents occurring between 1978 and 1987, 239 or 6 percent of the pilots involved had BAC levels above .04 percent. However, the general pattern over those ten years improved; the incidence of alcohol among private pilots involved in accidents actually declined by 36 percent over the course of the period, from 8.3 percent of all general aviation accidents in 1978 to 5.5 percent of such accidents in 1987.

3. Motor Carriers

It is a criminal offense to operate a commercial motor vehicle (CMV), or any vehicle subject to the Federal Motor Carrier Safety Regulations (FMCSRs) under the influence of alcohol or drugs. FHWA regulations prohibit the use of alcoholic beverages within 4 hours of reporting to work and also prohibit a driver from working while having any measured BAC or any detected presence of alcohol in his or her system. This effectively amounts to a zero alcohol threshold for CMV operators. A driver will not be considered physically qualified to drive a motor vehicle if, among other things, the driver is currently an active alcoholic. On October 4, 1988, FHWA issued requirements that states must adopt regulations, whereby a commercial motor vehicle (CMV) operator convicted of having a BAC level of .04 or above will be deemed to be DUI and subject to a disqualification of at least one year, or they will lose a percentage of federal-aid highway funds. These BAC regulations are integral to the commercial driver's license (CDL) program, a nationwide restructuring (under FHWA and state auspices) of testing, licensing, and disqualification procedures for CMV operators. Mandated by the Commercial Motor Vehicle Safety Act of 1986, the CDL program includes a national clearinghouse through which states will exchange commercial drivers' record information, including BAC violation histories.

Accident statistics indicate that nearly half of the fatally injured noncommercial motor vehicle drivers had a measurable amount of alcohol in their blood (usually .01 percent or more) compared to about 15 percent of fatally injured drivers of medium and heavy trucks. Moreover, as the chart below indicates, for those truck drivers who had been drinking prior to an accident, the highest accident rate was among those consuming the most alcohol. Drivers of heavy and medium trucks with positive BAC's are involved in about 750 fatal crashes annually, along with another 7,700 crashes resulting in personal injuries and 4,750 crashes involving only property damage (Zero Alcohol, 1987).

	Percentage of all fatal truck accidents	Percentage of the 15 percent of truck drivers who had alcohol in their blood
No truck driver use of alcohol	85.0	—
BAC = .10 or more	9.1	60
BAC = .04–.10	2.7	18
BAC = .03 or less	3.2	21
Total	100	

(Zero Alcohol, 1987)
(FARS data tapes, 1982–1985)

The NTSB is in the process of studying alcohol (and other drug) use by motor carrier operators in fatal accidents. We hope to have the results for consideration at the next stage of this rulemaking. We do know, however, that the cost of accidents to employers is substantial, over and above the lives lost, whether these accidents are caused by alcohol or something else. The National Safety Council estimates that an on-the-job accident is four times more costly than one that occurs in a personal vehicle, with an average cost to employers of $168,000 for a fatal accident and $6,900 for a nonfatal accident. To the extent alcohol use increases on-the-job accidents, its cost impact could be quite significant.

4. Rail

The FRA regulations prohibit on-the-job use of, possession of, or impairment by alcohol or any controlled substance. They also prohibit railroad employees subject to the Hours of Service Act from having a BAC level of .04 or more while on the job. This is a per se violation; however, it is used for civil, and not criminal purposes. Following innovations such as an industry program called "Operation Redblock" and the

FRA's testing and rehabilitation program, alcohol use among railroad workers, which has always been a serious problem for the industry, may be in decine.

However, we recognize that problems continue in this area. From February 1986, when mandatory post-accident blood testing for alcohol began, through the end of 1988, 13 employees tested positive for alcohol (0.6 percent of employees tested). In five accidents/incidents, involving two deaths, two injuries, and $3.18 million in property damage, alcohol appears to have played a causal role. In one, the engineer tested positive at a BAC level of .16, and alcohol was found by the NTSB to be a contributing factor in the accident, which caused $1.58 million damage and the death of the engineer. In another accident, which is still under investigation, eight injuries and $194 thousand in damage were caused, and a dispatcher tested positive at .15 percent BAC. Three additional accidents so far in 1989 also involved four employees who tested positive for alcohol.

Reasonable cause breath testing under the FRA program (triggered by rule violations, less serious accidents and injuries, or reasonable suspicion) has produced the following results: 11 of 348 persons tested positive in 1986 (3.2 percent); 24 of 593 tested positive in 1987 (4.2 percent) and 46 of 1005 tested positive in 1988 (4.6 percent). FRA regulations define a "positive" breath test as one indicating a BAC level of .02 percent or above. The significance of these results with respect to prevalence in the population is difficult to determine, since a number of the tests were performed because of reasonable cause, and it should be expected that a high percentage of reasonable cause tests would be positive since prohibited use or impairment has already been identified or is suspected.

5. Maritime

Coast Guard regulations prohibit persons from operating a vessel while intoxicated, and merchant mariners from drinking on duty or assuming duties within 4 hours of consuming alcohol. In accordance with a statutory requirement, the regulations established Federal behavioral and BAC intoxication standards for both commercial and recreational vessel operators. Either the behavorial or BAC standard can be used independently to determine intoxication. The rule applies a .04 percent BAC standard to operators of all commercial vessels, including fishing vessels. For recreational boaters, the Federal BAC standard is .10 percent. For recreational boaters, this BAC standard and the Federal behavioral standard apply only in the absence of existing State BAC and behavioral standards or outside of State territorial waters. The Coast Guard regulations also require post-accident testing for alcohol and other drugs.

In its 1986 NPRM on operating a vessel while intoxicated, the Coast Guard stated that alcohol use has had an adverse effect on marine safety. It examined commercial vessel casualty records, which indicated that 44 deaths, 3 persons missing, and 33 injuries were attributable to alcohol during the period of January 1981 through May 1986. During the period 1982 through 1984, the Coast Guard took suspension and revocation action against 72 seamen for alcohol-related incidents.

Recreational boating casualties are much higher than commercial vessel casualties, second only to U.S. highway deaths as a cause of transportation deaths. They have been dropping in recent years, due to increased efforts in the cooperative safety programs of the Coast Guard, the states, and volunteer safety organizations. In 1988, 946 boating fatalities occurred, down from the previous record low of 1,037 in 1987. (Coast Guard report, "Boating Statistics 1988"). Studies conducted by the Coast Guard and the NTSB indicated that up to 50 percent of all recreational boating fatalities may have been alcohol-related.

6. Pipeline

RSPA has no specific regulations on alcohol. It does have a general regulation on health of pipeline workers at liquified natural gas plants. Pipeline operators must look for any physical condition that would impair performance, including any observable disorder or condition that is discoverable by a professional examination. We have no specific data on alcohol-related accidents or lost productivity data in this area; however, a number of the commenters in the anti-drug rulemaking seemed to believe that alcohol was a more pervasive problem than drugs. We are also aware that many companies in the industry are known to have alcohol prevention programs, but we do not have statistics or data on the prevalence of the problem in the industry. Although we recognize that most accidents are caused by excavation workers (people not regulated by RSPA) digging into pipelines, we would like to gather data on whether alcohol abuse does or can cause safety problems in the pipeline industry.

7. Mass Transportation

UMTA does not have any regulations concerning alcohol. However, many of UMTA's grantees are subject to other Federal requirements on alcohol use. All commuter rail lines funded by UMTA, for example, are subject to FRA regulations. All drivers of UMTA-funded motor vehicles that are capable of carrying more than 15 passengers, including the driver, are subject to the FHWA DUI standards which are enforced by the states.

Data available to UMTA indicate that approximately 50 commuter train accidents in the last 13 years have been attributed to drug-or alcohol-impaired workers, and, in the last three years, 15 percent of employees tested following commuter train accidents tested positive for drugs or alcohol. (The data do not provide separate figures for alcohol alone.) In informal implementation discussions following adoption of the UMTA anti-drug rulemaking, some industry members have indicated that they believe alcohol is a more serious problem than drugs. One of the few surveys taken indicated that, between 1982 and 1985, only five out of 1,210 bus drivers tested positive for alcohol following a fatal accident. However, information originating from industry sources indicates that transit bus drivers are heavier drinkers than the general population (U.S. Census Bureau, 1984b). One survey is reported to have found that 57 percent drink at least weekly, with an average consumption of nine drinks per week; the national median is six drinks per week (U.S. Census Bureau, 1984b). No information is available about drinking on the job (Zero Alcohol, 1987).

At this time, we do not have any useful data on the other costs of alcohol abuse, such as lost productivity and absenteeism, and we again invite commenters to supply information on these matters. We specifically request additional data relating to the problem of alcohol abuse and use in each mode of transportation. We particularly want commenters to address whether the current rules and programs are sufficient and, if not, why. We welcome suggestions on areas where further action is necessary.

III. Legal Authority/Issues

An analysis of the Department's authority to adopt any of the options discussed in this ANPRM would vary with the specific option.

The option that may be considered the most intrusive would be a requirement to conduct alcohol testing. For that

reason, we discuss that option here. If further rulemaking is deemed warranted, in subsequent documents, our analysis will address the option or options selected.

As a general matter, the legal authority, both statutory and constitutional, to mandate any alcohol testing would be the same as that relied upon to issue the drug testing rules, except the Coast Guard also has a statutory mandate to conduct post-accident alcohol testing. Although the existing case law addressing the constitutionality of employee alcohol testing programs is more sparse than that with regard to drug testing, the Department believes that the available precedent supports rulemaking efforts that may require alcohol testing in the regulated transportation industries.

As courts have held with regard to government drug testing of employees, alcohol testing mandated by the government is considered a search within the meaning of the Fourth Amendment of the U.S. Constitution. See, *Schmerber* v. *California*, 384 U.S. 757, 767–768 (1966) ("compelled intrusions into the body for blood to be analyzed for alcohol content" must be considered a Fourth Amendment search); *Skinner* v. *Railway Labor Executives' Association*, 489 U.S. , , 109 S.Ct. 1402, 1412 (1989) ("Subjecting a person to a breathalyzer test, which generally requires the production of alveolar or 'deep lung' breath for chemical analysis * * * implicates similar concerns about bodily integrity and, like the blood-alcohol test * * * considered in Schmerber, should also be deemed a search.")

In determining whether a particular search comports with Fourth Amendment requirements, courts must establish that under all the particular circumstances the search itself is "reasonable." As the leading case on bodily fluid testing, *Skinner* v. *Railway Labor Executives' Association*, makes clear, issuance of a warrant or the existence of probable cause or individualized suspicion is not a minimum essential requirement in establishing the reasonableness of a search under an administrative testing program.

In Skinner, the Supreme Court upheld regulations issued by the Federal Railroad Administration governing drug and alcohol post-accident and reasonable cause testing of railroad employees (49 CFR part 219). The Court concluded that the testing procedures and methods of procuring blood, breath, or urine samples for testing as set forth in Subparts C and D of the FRA regulations "pose only limited threats to the justifiable expectations of privacy of covered employees." 489 U.S. at , 109 S.Ct. at 1417, 1419. By contrast, the Court found that the government's interests in seeking to determine the cause of an accident or incident, deterring alcohol and illegal drug use by rail employees, and safeguarding the general public are compelling. Under these circumstances, the Court held that alcohol and drug testing pursuant to the FRA regulations are reasonable within the meaning of the Fourth Amendment.

Also, the lack of a demonstrated substance abuse problem among the workforce in a particular industry should not, of itself, pose insurmountable constitutional impediments to a testing program for that workforce. This point was made clear by the Supreme Court in *National Treasury Employees Union* v. *Von Raab*, 489 U.S. , , 109 S.Ct. 1384 (1989), which was decided the same day as Skinner. In Von Raab, the Court upheld urinalysis testing for illegal drugs of U.S. Customs Service employees slated for promotions into positions that involved either interdicting illegal drugs or carrying a firearm. Despite the Commissioner of Customs' stated belief that "Customs is largely drug-free," the Court concluded that there was little reason to suspect that the Customs Service was "immune" from society's pervasive drug abuse problem and held that the testing program was constitutionally defensible as a means to ensure that employees promoted to these sensitive positions are drug-free. *Id.*, 489 U.S. at , , 109 S.Ct. at 1387, 1395.

Pre-Skinner court decisions addressing the constitutionality of various employee alcohol testing programs have also concluded that such testing comports with the Fourth Amendment. Thus, a state regulation requiring jockeys to submit to mandatory warrantless breath alcohol tests on each racing day was found to be constitutionally permissible. *Shoemaker* v. *Handel*, 795 F.2d 1136 (3d Cir.), *cert. denied*, 479 U.S. 986 (1986). Similarly, alcohol and drug testing during a pre-employment physical examination, work-related examination, return to work after unscheduled absence, or on the basis of reasonable suspicion or involvement in an accident or incident was upheld in the case of mass transit employees directly involved in the operation, maintenance and decisionmaking of a public transit system. *Amalgamated Transit Union, Local 933* v. *City of Oklahoma City*, 710 F. Supp. 1321 (W.D. Okla. 1988). *Accord, Amalgamated Transit Union, Division 1279* v. *Cambria County Transit Authority*, 691 F. Supp. 898 (W.D. Pa. 1988) (mandatory drug and alcohol testing during annual physical examination does not violate Fourth Amendment).

Also, DOT is aware of at least one recent Federal appellate court case upholding employee alcohol testing in the wake of Skinner. In that case, the U.S. Court of Appeals for the Third Circuit upheld, *inter alia*, random breathalyzer testing of mass transit operating employees. *Transport Workers Union, Local 234* v. *Southeastern Pennsylvania Transportation Authority*, 863 F.2d 1110 (3d Cir. 1988), *vacated and remanded*, 109 S.Ct. 3209 (1989), *aff'd on remand sub nom. United Transportation Union* v. *Southeastern Pennsylvania Transportation Authority*, 884 F.2d 709 (3d Cir. 1989).

Consistent with the Supreme Court's analysis in Skinner and Von Raab and lower court decisions, if the Department determines that there is a need for properly-administered alcohol testing to ensure that employees in transportation industries are not impaired while performing sensitive safety- or security-related functions, that need would outweigh the privacy interests of these employees and, thus, would be constitutionally permissible.

IV. International Issues

We are aware that any decision to issue regulations requiring alcohol testing or some of the other options discussed in this ANPRM is certain to raise questions about compatibility with the laws of foreign countries. Our drug testing requirements have already resulted in government-to-government consultations, which we believe will ultimately result in mutually satisfactory arrangements. Nevertheless, it would be useful, even at this early stage of our analysis, to understand more about how other countries whose transportation industries operate in the U.S. or perform sensitive safety or security-related work for U.S. operators outside the U.S. view the problem of alcohol use and abuse among transportation employees, how they respond to the problem, whether they conduct any alcohol testing and how those programs operate. We specifically invite comments on those situations where our regulations might have an international effect. Among other things, it should be noted that Annex 2 to the Convention on International Civil Aviation (the Chicago Convention), section 2.5, states that no person shall pilot or act as a flight crewmember while under the influence of an intoxicating liquor or any

narcotic drug "by reason of which his capacity to so act is impaired." It is the U.S. government's intention to work with foreign governments to resolve potential conflicts in a manner that accommodates their concerns while ensuring the necessary level of safety by those we regulate.

V. Questions of Approach

A. Introduction

If we determine that further action against alcohol abuse is necessary, there are several alternative approaches that we are considering. They could be adopted singly or in combination. As a preliminary matter, we first discuss who should be covered by any program we set up, which is relevant to all but the enforcement options. A discussion of each alternative and questions that each poses then follows. We welcome public comments on these alternatives. We also welcome public comment on any other approaches that the Department could take to address the alcohol problem in the transportation industry.

B. Covered Employees

Our modal drug rules generally cover persons who perform sensitive safety- or security-related functions in commercial transportation. They affect approximately 4 million persons and include, for example, commercial truck drivers, pilots, pipeline operators, licensed and documented mariners and others serving on board a vessel with a licensed operator, mass transit operators, and railroad workers subject to the Hours of Service Act. (See the end of Appendix B for a short summary of the drug regulations.) The Department's existing alcohol regulations cover a somewhat different population. Chart 1 provides a general description of the types of people covered by the drug regulations.

The basis for imposing any requirements concerning alcohol abuse would be sensitive safety- or security-related functions. It would appear that the same employees who could cause safety problems if they are on drugs could cause problems through misuse of alcohol.

What, if any, rationale is there for covering a different population for alcohol testing than drug testing? In addition, we would like public comment on whether the line we drew between commercial operations and private operations for the drug rules should be changed with respect to alcohol? If so, why? Would the answers to these questions be different if the Department required action other than testing? Why?

C. The Options

The specific options include:

1. Education

a. *General.*

CHART 1—PERSONS COVERED BY DRUG RULES

FRA	UMTA	USCG	RSPA	FAA	FHWA
Engineers, Brakemen, Dispatchers, Block Operators, Signal Maintainers, Conductors.	Vehicle Controllers, Vehicle Operators, Mechanics.	Licensed/documented persons and persons serving under such lic/doc persons in a sensitive safety position, including for example: licensed officers, mates, (chief, first-third), and chief/assistant engineers; documented oilers, wipers, quarter masters, able and ordinary seamen. Includes persons on inspected vessels (deep draft, passenger & small passenger, off shore supply, & mobile offshore drilling units) and uninspected vessels (Inland, Great Lakes, Ocean & Harbor tow boats, passenger & fishing boats).	Operations, Maintenance, Emergency Response.	Pilots, Flight Navigators, Aircraft Dispatchers, Mechanics, Repairmen, Flight and Ground Instructors, Flight Attendants, Air Traffic Controllers, Aviation Security, Screening Personnel, Ground Security, Coordinators, Flight Engineers.	Drivers (Interstate) of vehicles of: 26,001 or more pounds, 15 + passengers, hazardous material (placarded).

One approach would be to emphasize education to increase employee perception of the risks of performing duties or operating a vehicle under the influence of alcohol. There is some disagreement about the respective effectiveness of education vis-a-vis enforcement. Some researchers claim that education is more effective in preventing alcohol abuse than apprehension of the abuser. The American Automobile Association Foundation for Traffic Safety compared eight states that adopted tougher drunk driving laws with six that did not. The new laws had no effect at all on traffic fatalities. The Foundation attributes the overall decline in U.S. traffic-related deaths between 1980 and 1985 to public awareness campaigns by such groups as Mothers Against Drunk Driving (MADD). A Boston University researcher similarly concluded that social pressure and publicity "may be as important as government regulations in reducing drunk driving and fatal crashes." (Both quoted in USA Today, Wednesday, August 3, 1988.) However, would social pressure have less effect on commercial operators who face economic pressures to complete their jobs?

These studies have been criticized as poorly designed and misleading, since education programs were never isolated as an independent variable for comparison. NHTSA believes that the most effective programs are those that combine education and enforcement. Public information and education programs, in the absence of enforcement or sanctions activities, have never been shown to impact alcohol-related fatal crashes. Conversely, scores of studies have found that programs involving enhanced enforcement, roadside sobriety checkpoints and the use of sanctions such as license suspensions frequently have resulted in significant reductions of alcohol-related fatalities. Although there is disagreement on the effectiveness of education alone, it appears that using education as an adjunct to deterrent measures would make them more effective.

Education may be less effective for illegal drugs, because the users have already decided to do something illegal. Having crossed over that line, they may be less susceptible to educational efforts. For that reason, alcohol abuse may warrant a different response from the approach the Department took to illegal drug use.

b. *Employee Assistance Programs.* One method of preventing, as well as

encouraging the voluntary cessation of, alcohol abuse is to establish an Employee Assistance Program (EAP). An EAP can have education, training and rehabilitation components that benefit both management and employees and can be positive factors in determining the employee acceptance of and success of an anti-alcohol abuse program. The Department's own EAP offers education and training for its employees and supervisors. The drug testing rules all require companies regulated by the Department to provide information to employees on the dangers of drug use and the consequences of that use. In addition, supervisors are required to be trained in the detection of drug use among employees. Similar requirements could be imposed with respect to alcohol use and abuse.

We would expect to find that the additional cost of adding information about alcohol to the existing drug prevention programs would be relatively small. We ask for public comment on whether this would be a useful approach. Also, how often should training be required and for whom? It would be helpful if any data on the success or failure of educational efforts could be provided. Finally, we would like any data on costs, especially for programs that are added to existing drug programs.

c. *Drug Free Workplace Programs.* The Federal government recently enacted rules (54 FR 4946, January 31, 1989) that apply to its contractors and grantees as a result of the Drug-Free Workplace Act of 1988 (Pub. L. 100–690, title V, subtitle D). These rules require that grantees and contractors (1) certify that they will provide a drug-free work environment; (2) establish a written drug-free workplace policy; (3) inform employees about the consequences of drug use and about any resources to assist those employees with drug abuse problems; (4) notify the government if an employee is convicted of a criminal drug offense occuring in the workplace; (5) take action (disciplinary action or rehabilitation) with respect to a convicted employee.

Given the fact that the Department already requires a drug free workplace for its grantees and contractors, could a similar program for alcohol be initiated for companies regulated by the Department? (Many of our regulated companies would also be covered by the drug free workplace requirements if they also are contractors or grantees of federal agencies.) What should the elements of such a program be? Could alcohol easily be added to existing industry drug-free workplace programs? Should alcohol be treated as an entirely separate issue requiring separate programs? What, if any, are the problems associated with implementation? For grantees that also are regulated by the Department (e.g., UMTA grantees), could this serve as a cost effective program? Would it be cost effective for persons and companies not now subject to the drug free workplace rules? Who should be subject to such a requirement? Would the rule be enforceable? Effective? In some regulated industries, such a certification would be viable; in others it may not. Commenters should address how it could work or would not work in particular industries. Is a conviction reporting requirement practical?

2. Rehabilitation

a. *General.* We believe that both employers and employees benefit from the availability of rehabilitation programs. The opportunity for rehabilitation can encourage employees to seek help and increase their overall acceptance of an anti-alcohol program. Employers benefit from greater productivity, fewer accidents, and lower turnover costs if employees are rehabilitated.

b. *Employer-mandated Programs.* One approach would be to encourage or require employers to offer rehabilitation opportunities to their employees. The Department decided that it would be inappropriate for the federal government to mandate employer-provided drug rehabilitation in its modal drug testing rules and that this issue should be worked out between employers and employees. However, as an employer, the Department provides such services. It offers a one-time opportunity for rehabilitation (usually paid for by the employee's health insurance) for employees who test positive under its internal drug testing program. The employees eventually can be reinstated if they successfully complete rehabilitation and undergo subsequent monitoring. Counseling and rehabilitation opportunities are also provided to any DOT employees who seek help for alcohol problems.

Is there any justification for requiring employers to provide rehabilitation for alcohol abusers, but not for drug users? If so, please explain why. Should rehabilitation be offered to those who volunteer or those who get caught or both? Would required rehabilitation, by removing the incentive for self-referral, only ensure that the alcohol abuse continues until the violator is caught or causes an accident? Would education work effectively without rehabilitation? Would education work if the Department encouraged, but did not mandate, rehabilitation?

c. *Expansion of Rehabilitation Programs Like "Operation Redblock" to Other Modes.* To be effective, it appears that "providing an opportunity for rehabilitation" means holding the same or similar job open for the employee. The railroad industry's voluntary program called "Operation Redblock" is designed to identify substance abusers and get them into rehabilitation programs, with the understanding that persons who complete the program successfully will retain their jobs. The program relies on voluntary self-referral (where the employee agrees to seek help before an on-duty alcohol violation, based on his or her own initiative or an EAP contact by a family member or other concerned person), and peer-referral (where the co-worker notes on-the-job alcohol use and identifies the user as unsafe to work with). Employees have a natural reluctance to report on a friend when it means that the friend could lose his or her job. Because Operation Redblock allows employees to bypass disciplinary rules, one important aspect of the program is that it helps overcome this reluctance. Operation Redblock also includes an opportunity for treatment even where the employee's alcohol or drug use is detected through management action; but this is a special "incentive provision" offered in exchange for employees' active participation, through prevention committees, in rule enforcement. As such, it may be more appropriate for negotiation between employer and employee than as a regulatory requirement.

A somewhat similar alcohol prevention program for airline pilots is run by the Air Line Pilots Association and many of the major airlines. Also, Coast Guard regulations allow licensed personnel to voluntarily deposit their license, certificate or document and seek drug or alcohol rehabilitation prior to being subjected to a suspension or revocation proceeding for intoxicant-related incompetence. (This option is unavailable if the person caused an accident.) The document will not be returned until the individual successfully completes a rehabilitation program and participates in a post-rehabilitation monitoring program.

Through some combination of regulation and promotion of voluntary efforts, these types of programs could be used in all transportation industries in order to encourage more people to step forward and receive help. It is more likely to result in the employee seeking early treatment. A critical issue is when

the opportunity for treatment will be offered. If an individual knows that he or she automatically will be provided rehabilitation after testing positive, he or she may have no incentive to volunteer before being detected or causing an accident. Of course, peer referral may not be possible in some transportation operations (e.g., segments of the trucking industry). We ask for public comment on how successful this approach is in the industries where it is used. Is it appropriate for all modes of transportation? For small companies as well as large? What could be done for owner-operators? Would this approach be successful with respect to persons who abuse both alcohol and other drugs? Would it be appropriate for the Department to require such a program in light of the fact that it did not think it appropriate to do so in the drug testing rules? We are especially interested in data on current rehabilitation efforts by transportation employers: the cost of the program, the success rate, specific implementation problems, and so forth.

d. *Implementation Issues.* If we pursued the rehabilitation option, should we mandate the particulars of a rehabilitation program? Who should pay for inpatient rehabilitation and the subsequent monitoring program? Should an employee continue to be paid while undergoing rehabilitation? What would be the economic costs of holding the job open? Would this be an impossible option for small companies? Should they be exempt or would that have adverse effects? How much time should an employee be allowed to complete a rehabilitation program, taking into account how long it may take an employee to be admitted into one? We are interested in comments on how to implement opportunities for rehabilitation among small companies and owner-operators.

e. *Medical Review Officers.* The kind of rehabilitation program needed (inpatient, outpatient or counseling/abatement) will necessarily vary from case to case. Who should make that determination? Under the drug rules, employers are required to appoint or designate a Medical Review Officer (MRO) to review the results of the employer's drug testing program, interpret each confirmed positive test result, and evaluate an individual who has undergone rehabilitation before he or she can return to the job. Should a similar requirement be included in any alcohol rule requiring or permitting rehabilitation? How would an MRO "verify" a positive in an alcohol case? Should an MRO have to be a licensed medical doctor or other substance abuse professional? Are there distinctions between the necessary qualifications for an MRO in the drug area and one in the alcohol area? The MRO could be a currently employed company physician or could be a private physician who performs MRO service for the employer on a contractual basis.

D. Enforcement

1. General.

The Department relies mainly on the states to enforce its highway and maritime regulations against persons operating while intoxicated. In recent years, it has encouraged greater enforcement efforts by the states against alcohol and other drug abuse. NHTSA has several programs to provide financial and technical assistance to states for improving laws and programs to combat alcohol- and drug-impaired driving. As discussed in Appendix B, FHWA and NHTSA have regulations that require states to adopt minimum BAC standards for commercial motor vehicle operators and to implement the minimum age 21 drinking age law, respectively, or face the loss of some federal funding.

2. Effectiveness of Deterrent Actions

Enforcement is the most important deterrent activity, when accompanied by sufficient public visibility. For example, if motor vehicle DWI offenders are not arrested, no sanctions can be imposed and no deterrence can occur. However, even if there is an increase in enforcement, this does not ensure that deterrence will result, since the public may not be sufficiently aware of such efforts.

The effectiveness of enforcement efforts has been recently summarized by Voas and Lacey (1988) and the effectiveness of roadside checkpoint operations has been summarized by Dickman (1987). Highly visible enforcement, particularly the frequent use of roadside sobriety checkpoints, has frequently, but not always, resulted in reductions in alcohol-related fatal crashes or in surrogate measures. Many of the examples of such reductions have been in foreign countries (Ross 1973; Ross 1984; Homel 1986; Ross 1988). In the United States, positive results have been documented for programs in Largo/Clearwater, Florida (Lacey et al. 1986); Charlottesville, Virginia (Voas, Rhodenizer and Lynn 1985); Arizona (Epperlein 1986); Stockton, California (Voas and Hause 1987) and Bergen County, New Jersey (Levy, Shea and Asch 1987). Additional evidence for the deterrent effects of roadside checkpoints has been provided by Williams and Lund (1984), who found that drivers perceived higher enforcement levels in areas where checkpoints were used than in areas where they were not used, even though actual arrest rates were sometimes higher in the latter. As a rule, 15–30 percent reductions in alcohol-related fatal crashes have been documented in the above studies. Most of the observed reductions were temporary in nature, primarily because the enforcement efforts, themselves, were short-term. However, it would be improper to criticize enforcement programs for providing only temporary reductions when these programs have more frequently resulted in "bottom-line" reductions in crashes than any other approach. Further, the ongoing roadside checkpoint program in New South Wales, Australia (Homel, Carseldine and Kearns 1988) has demonstrated that long-term reductions in alcohol-related fatal crashes can be effected with long-term enforcement emphasis.

The deterrent effects of sanctions have been reviewed by Voas (1986), Peck, Sadler and Perrine (1985) and by Nichols and Ross (1988). Nichols and Ross reviewed studies of the specific and general deterrent effects of confinement, license suspensions, fines and, to some extent, treatment programs. They concluded that all sanctions provided some evidence of impact but that license actions provided consistent evidence of both specific and general deterrence effects. With regard to the effectiveness of license suspensions on offenders who receive them, several controlled studies found that license suspensions have a significant impact on a variety of traffic safety measures, including subsequent total convictions, total crashes, alcohol-related crashes, non-alcohol-related crashes and serious injury and fatal crashes (e.g. Hagen 1977; Popkin et al. 1983; Blomberg, Preusser and Ulmer 1987; and Preusser, Blomberg and Ulmer 1988). In addition, several controlled studies provided evidence of a general deterrent impact, as reflected by population-wide reductions in alcohol-related fatal crashes (e.g. Blomberg, Preusser and Ulmer 1987; Ross 1987; Zador et al. 1988; Klein 1989). The results of these studies provide reasonably sound evidence that the deterrent effects of license suspensions extend beyond those offenders who are caught and sanctioned. Nichols and Ross speculated that this was at least partially because license actions are feared more by DWI offenders than any other sanctions. Nearly all of the studies that found reductions in crashes following an increase in the use of

license sanctions were studies of administrative license suspension laws. This suggests that the certainty of imposing license actions is also likely to be an important factor.

In summary, it is likely that the effect of the arrest itself results in reduced drunk driving among those offenders who are caught. Further, enhanced enforcement efforts can extend such deterrent effects beyond offenders who are caught. In addition, it appears that the imposition of license sanctions (and to a lesser extent jail sentences) on offenders who are caught results in reductions in their recidivism rates beyond those caused by arrest. Much of the reduction in recidivism among offenders receiving license actions appears to be due to reduced exposure, rather than deterrence itself. However, since frequently-imposed license sanctions, like high visibility enforcement, have been shown to reduce alcohol-related fatal crashes on a population-wide basis, a significant element of deterrence must also be operative.

3. The National Driver Register

The National Driver Register (NDR) is a central, computerized index of state reports on drivers whose driving privileges have been denied, suspended or revoked. Applications for driver licenses in many states are routinely checked against the NDR to screen for potential problem drivers. In 1986, Congress enacted legislation to require a uniform national commercial driver's license to end a driver's ability to obtain a license in one state after losing one in another. The Commercial Driver's License Information System, which is tied in with the NDR, enables the states to check commercial driver's licenses by computer.

Recent legislation has expanded the role of the NDR to allow FAA and the rail industry to use it to locate and review individual driving records to screen qualifications of airline pilots and locomotive engineers. The information would be used as an indication of a possible alcohol abuse problem, as well as evidence of any misrepresentation on their FAA medical applications. The FAA and FRA are currently considering regulations that will implement this legislation. The Department also has proposed legislation that would authorize the Coast Guard to use the NDR to obtain information on driving-records violations of merchant mariners.

Should the Department seek access to the NDR for the other modes of transportation? Would information on convictions be useful for identifying possible alcohol abusers in sensitive safety jobs not requiring a Federal license? Are there additional steps that the Department could and should take to increase enforcement of the existing regulations? Should additional legislation be sought as incentives for additional state or local action in lieu of or as a supplement to the other alternatives discussed in this ANPRM? What would be the advantages of such an approach and what would its impact be on federalism? How can the Department best make use of the states' expertise and position in the field to increase enforcement?

E. Alcohol Testing Program

Under this option, employers would be required to institute alcohol testing programs, perhaps similar to our drug testing programs. However, the drug programs focus on illicit use and controlled substances, and thus present different issues than would an alcohol testing program. In some ways, the issues raised by an alcohol program could prove to be more difficult than those of drug testing. They are more complicated simply because alcohol is a legal substance.

Below, we discuss a series of issues and raise questions for commenters to address. These are relevant to pursuing this option.

1. What to Prohibit?

An important issue is what use of alcohol to prohibit. In addition to current restrictions, the Department could prohibit: (1) Any use affecting work, reflected by the presence of any alcohol in a covered employee's blood during working hours; or (2) impairment and/or intoxication on the job, as expressed by given BAC levels or behavior; or (3) a combination of both for different employees or different situations.

Drug testing rules target drug usage by employees, regardless of whether the use occurred on- or off-duty. This makes sense because the drugs we test for are illegal and no one yet has developed the capability to determine, based exclusively on a chemical test, at what level a particular drug impairs the user's performance of a particular function and can have devastating safety consequences. Our current alcohol rules target both use and impairment by prohibiting the employee from drinking on the job or just prior to reporting to work, or from performing a safety-related function under the influence of alcohol identified by a certain BAC level. Data relating body fluid concentrations of alcohol to performance decrements is more extensive than that available for drugs.

Should we expand testing for alcohol beyond the current FRA, Coast Guard, and FAA (consent to testing) rules? If we decide to test, would the approach we took with our modal drug rules be appropriate? That is, should the Department undertake to make transportation workers alcohol-free? Is this practicable, given the fact that alcohol is a legal substance? Is it necessary, or does the accident record indicate that an absolute prohibition would be a case of over-regulation? If "zero" is an unrealistic or unnecessary goal, where should the line be drawn? We would like to hear from companies that prohibit alcohol consumption by their employees on how they enforce this prohibition and whether their programs are successful.

The issue of being under the influence of, or impaired by, alcohol is more complicated than simply having drugs in one's system. To be legally relevant, the use or impairment must occur in the context of job performance. Drinking during most off-duty periods may or may not impinge upon a person's ability to function well in the job, but generally by itself is not illegal. Focusing our efforts on detection of alcoholics would not be sufficient to address the problem. Drinking that causes on-the-job impairment poses a serious danger whether or not the drinker is an alcoholic.

What function the person is performing is important. Finding a BAC level of .04 in an aircraft pilot who is on duty but simply filling out administrative paperwork in an office may be irrelevant to safety; i.e., the effects on his ability to perform paperwork are not related to safety. Therefore, we might only want to test pilots when they are about to enter or leave the cockpit as opposed to when they are performing administrative duties. Such a requirement could complicate the logistics of testing, especially for those people that move in and out of safety-sensitive functions during the workday.

Should testing be limited to those times when the employee is about to perform or is performing a safety function? What are the likely implementation problems? Would it be too difficult to set up a program to randomly test pilots, for example, when they were about to perform or were performing sensitive safety functions?

Do different functions demand different standards? For example, should we continue to have different rules for commercial versus private

operators? What about different job categories—should a pilot be held to a higher standard (i.e., a lower BAC) than a flight attendant or a dispatcher?

2. What is a Positive?

If the Department were to require industry testing programs for alcohol, one of the most difficult issues to decide would be what blood level of alcohol would constitute a "positive" test. The consensus of DOT rules and practice would appear to support, as a measure of intoxication, a *per se* prohibited level of .04 percent. (It should be noted that FRA leaves a conservative margin of error of about .01 percent for field testing. Thus, the effective *per se* level is .05 percent.) However, some current rules imply a tighter standard. For example, FAA prohibits crewmembers from drinking less than eight hours before flight. To enforce this rule, the FAA might want to set a lower BAC on a "positive" level, on the theory that someone at a given BAC level had imbibed within the eight-hour period.

Others might argue that .04 is too strict a standard, that it would have the effect of outlawing alcohol since it is difficult to establish with certainty how long alcohol will stay in a particular individual's system. Still others would argue that the permissible level needs to vary depending on, for example, whether an individual is about to fly an aircraft or fill out paperwork.

In its comments on the FHWA rulemaking that established the .04 BAC standard for driver disqualification, the NTSB recommended that a zero BAC level be used as the standard, because lower BAC levels have some impairment effects. FHWA accommodated this position by requiring that commercial motor vehicle operators with any measured BAC standard be placed out-of-service for the next 24 hours. We do not intend to reopen the issue of whether specific modal standards established for use within the existing regulatory framework should be revisited. However, in the context of considering additional regulatory action, including the possibility of additional testing requirements, we do believe that it is necessary to consider the appropriate BAC level to be used under the different alternatives.

What constitutes impairment? What impairment effects do hangovers have? How can we detect this type of impairment? Should we try? Moreover, how can we avoid establishing a program that encourages "binge" drinking a sufficient number of hours before work to avoid positive BAC tests, but then results in the adverse effects of hangovers? Commenters should address how a program should be structured and what BAC cutoff should be applied. Commenters should also discuss whether sanctions should differ for different BAC levels.

3. Treatment of Positives

Finding alcohol abuse by an individual performing a safety-sensitive function raises questions about how to treat that individual. Because alcohol is a legal substance, the questions may warrant different answers from the ones that would be given concerning a similar individual who had used drugs. The answers also would depend upon what use of alcohol we prohibit. The major issues that would have to be confronted include: Should any action taken against an individual who tests positive depend on—or vary with—whether the individual is performing sensitive safety functions when tested? Should the consequences of testing positive be different for persons known to be chronic abusers versus persons caught under the influence one time? How could dependency on alcohol be accurately determined? Should the employee merely be kept out of the sensitive safety job until sober? Or should rehabilitation be required for every person testing "positive" before that person could be returned to the job? Should action vary depending on how high the BAC level is? How should we treat persons who suffer from multiple addiction to both alcohol and drugs?

4. Occasions/Grounds for Testing

a. *General.* In the Department's drug testing rules, we required preemployment, periodic, reasonable cause, post-accident and random tests (special testing also is required for rehabilitated employees). Depending upon what use we prohibit, alcohol testing, unlike drug testing, may not be the most effective means of detecting abuse in all circumstances. The presence of alcohol is relatively easier to detect from physical symptoms (e.g., breath) or behavior (e.g., inability to walk a straight line) than drug use (although alcohol symptoms often can be successfully masked), and people are more familiar with the symptoms of alcohol intoxication. Also, the time-frame for testing is limited, because the body processes alcohol within hours of ingestion. If we decide to prohibit impairment, rather than use, the time frame for testing would be further limited to the time the job performance. For that reason, certain types of testing may not be as useful for alcohol as they are in testing for drugs. Along with comments on the utility and need for alcohol testing in general, we specifically invite comment on the suitability for alcohol testing of the different types of drug tests (preemployment, periodic, reasonable cause, post-accident and random). Commenters also should address the utility of each type of test. In this regard, we invite comments as to whether different types of tests are called for in different circumstances, such as blood testing only following an accident.

b. *Preemployment Testing.* Preemployment tests (for job applicants or current employees transferring into covered positions) may or may not be relevant, because testing normally would occur when the applicant is not performing any sensitive safety function. However, they may provide helpful information for use by a medical officer in determining whether an individual has a problem.

Drinking prior to interviewing with a potential employer is not illegal even though it might be imprudent. Therefore, there are legitimate questions about the significance of a positive test. On the other hand, it is possible that it could be used, along with other indicators, as a warning signal about alcohol dependency. It might also be useful as one tool among many for an employer to determine whether an applicant can be expected to perform reliably in a safety-related function. For example, the presence of alcohol may indicate the need to ask follow-up questions of the applicants to determine whether there would be a potential safety problem. Would such a test provide sufficient benefits to warrant requiring it? Would it be necessary to limit the use of any positive results; i.e., should we prohibit rejecting an applicant solely on the basis of a positive test?

c. *Periodic Testing.* As with preemployment testing, a primary purpose of periodic testing (at required, scheduled physicals) would be to identify persons who may have an alcohol problem. Periodic testing often occurs during off-duty hours when the fact that the employee may be under the influence is not necessarily relevant to his or her job performance. Unless we determine to prohibit employees from having any alcohol content during a physical examination, the primary purpose of such a test would be as a means of alerting employers to someone who may be a candidate for referral to an EAP or otherwise evaluated for substance dependency. Adding an alcohol test to the regimen for a required physical might be beneficial because the examination might not otherwise identify the employee's problem. If a blood sample is already taken and could

be used, it could lessen any legal or cost obstacles. Would this type of test provide sufficient benefits to warrant requiring it? As with preemployment testing, should we limit the use of any positive results?

d. *Reasonable Cause Testing.* Reasonable cause testing would be useful to determine impairment during job performance. It would be based, as in drug testing, on a rule violation (e.g., FRA rule now provides for this) and/or on a reasonable suspicion by one or more supervisors that an employee appeared to be under the influence. (The standard for triggering a test would differ depending on whether the substantive prohibition of alcohol abuse went only to intoxication on the job or to any measurable BAC while the employee was working.)

Because alcohol use often (at least at higher levels) results in more observable symptoms (and because more research has been done on how to train people to make these observations), this test may be more valuable for alcohol than for drugs. Although a supervisor may not know if the behavior is alcohol-related, whatever its cause it could support a decision to refuse to let the person operate in a sensitive safety position. Supervisor observation would not be a complete solution, however; "practiced" drinkers can appear normal (e.g., they can walk a straight line) and avoid detection. Also, supervisors may have reasons to overlook employee alcohol use (e.g., sympathy for employee and dealing with problem is too much trouble). The Army has found that supervisors have a tendency to underreport alcohol involvement in accidents (The Alcohol and Accidents Guide, February 1987). Commenters also should address how to reduce the possibility of harassment. Would procedures similar to those for our drug testing rules (generally requiring two supervisors, etc.) be appropriate? Also, would this test be especially valuable in conjunction with reasonable cause testing for drugs? If an individual's behavior raises suspicion and the person tests negative on an alcohol breathalyzer, some enforcement personnel might suggest performing a drug test.

e. *Post-Accident Testing.* Post-accident testing is already required by federal regulation in some modes, and serves as a valuable accident investigation and enforcement tool. States also conduct post-accident tests, depending upon the circumstances. Post-accident testing at remote locations might be more difficult to accomplish than drug testing, because alcohol passes from the blood and breath more quickly than most drugs. Delays for transportation of trained personnel to a test site could result in negative or inconclusive tests. Requiring a blood test, for example, to be conducted within a very limited time could raise the costs tremendously by requiring expensive forms of transportation in some instances. Therefore, it may be necessary to use preliminary breath testing. This also may require the use of trained people and special equipment. Commenters are invited to address this question, including the additional cost that may be involved and any special problems that field breath testing would present in terms of the integrity of the test process.

The drug rules require employers to test employees involved in an accident as soon as possible, but not later than specified maximum time limits (generally 32 hours). For the FRA, the average period of time is about 5 hours to get blood, but railroads run on track and accidents occur within limited areas, unlike aviation or maritime accidents. Within what period of time after the accident should an employee be tested for alcohol? Should we arrange with state enforcement and/or investigative personnel to carry out such testing if the accident occurs in a remote area? They may be the first government officials able to get to the scene and are sometimes equipped to conduct field alcohol breath tests.

f. *Random Testing.* Under the Department's drug rules, companies must conduct random drug tests at a 50 percent annualized rate; that is, the number of annual random tests conducted should equal half the number of the testable population. Because alcohol is rapidly eliminated from the body, random testing might be less effective for employees who, for example, do not work close to a place where a test can be conducted. The deterrent effect of random testing might be reduced for the same reason. Commenters are requested to focus on how the objectives of random alcohol testing (e.g., deterrence) could be accomplished. Should we use a higher than 50 percent annualized random testing rate? Because alcohol is generally eliminated from the body within hours, can these tests be effectively administered? Is it too expensive and inefficient a means of identifying abusers? Does it make sense if we only prohibit impairment on the job, rather than any alcohol use? As discussed earlier, must any random testing be limited to the specific times an employee is performing a sensitive safety- or security-related function? If so, how would this complicate implementation of a testing program? If alcohol misuse is more easily uncovered through observation and reasonable cause testing, will random testing add enough more deterrent effect to an overall program to meet constitutional muster?

g. *Pre-Performance Tests*—(1) General. Pre-performance testing could potentially be used in lieu of other forms of alcohol testing. Depending upon the industry, supervised testing could be conducted before a covered person assumed his or her duties on board a plane or ship, or unsupervised self-testing-type systems could be used to prevent a vehicle from operating if a person failed a test.

The advantage of pre-performance testing is that it detects an employee's impairment at the time he or she begins to perform sensitive safety- or security-related functions in a job where it is illegal to be under the influence of alcohol. Of all the kinds of testing, pre-performance tests may offer the most direct nexus to improving safety. They also could provide a strong deterrent. However, pre-performance testing may not be feasible for certain industries. Furthermore, technological and cost issues have not been resolved for some types of tests.

(2) *Pre-Performance Testing: Under Supervision.* An individual could be given a BAC test prior to performing a sensitive safety- or security-related function. This type of test is now being done in Alaska by Alyeska Pipeline Service Company. All crewmembers are tested prior to being allowed to work. Crewmembers that fail the test are not permitted to work until a test is passed.

This same system, or a variation, could be employed in other industries where an individual reports to a specific station before operating a commercial vehicle. For example, in some segments of the trucking industry, drivers report to a central dispatch facility every day and return at the end of the day. Most commercial pilots also report to a central location prior to flying. In such instances, supervised BAC testing may be feasible. In other segments of the two industries noted above, supervised BAC testing could be impractical and unmanageable. However, the system eventually decided upon by the Department to check for alcohol would not need to be uniform in every respect and in every segment of each of the regulated industries, if circumstances warrant different approaches. This may make the rules more complex, but could provide necessary flexibility to

companies. In addition, it might be appropriate to give companies the option of conducting either a pre-performance test or a random test.

Commenters should address how such a system could be developed for each industry, and the costs of such a system. We are also interested in the experience gained by the use of such tests in the U.S., as well as in other countries. What are the benefits of a pre-performance test? How would such benefits compare with a random test? How should a pre-performance positive test be treated? Any rule implemented would prohibit an individual from operating a commercial vehicle (aircraft, vessel, etc.) if a test were failed. However, commenters should address the need for regulations that mandate what additional action should be taken upon a positive test? Are sanctions needed, or should such steps be addressed by individual companies? Would alternative alcohol testing requirements (e.g., pre-performance vs. random) provide flexibility to companies? Is flexibility needed? To be effective, must pre-performance tests be conducted before all operations, or could they be done on a random basis? How often? Should tests be performed at a central meeting place prior to an employee's assumption of duties or should the test be attached to the vehicle's ignition system (discussed below)? Could an employee simply start drinking after passing the pre-performance test?

(3) *Pre-Performance Testing: Unsupervised.* The Department, through NHTSA, began to investigate the use of in-vehicle alcohol test devices (ignition interlock devices, referred to as "IID's") in 1968. The types of devices developed over the years have focused on breath and performance type tests; generally, if a driver does not pass the test, the vehicle will not operate or, under some systems, if operated, the emergency flashers or horn will automatically go off.

A recent report submitted to Congress describes the effectiveness and potential for application of ignition interlock devices to prohibit operation of motor vehicles by intoxicated drivers. ("Potential for Application of Ignition Interlock Device to Prohibit Operation of Motor Vehicles by Intoxicated Individuals: A Report to Congress".) NHTSA also performed laboratory testing for commercially available in-vehicle test devices. ("Further Laboratory Testing of In-Vehicle Alcohol Test Devices.")

Initially, attempts to develop IID's based on breath alcohol tests were hampered by technological limitations and concerns that they were too susceptible to circumvention or cheating. At this point, however, the NHTSA report notes that these problems have been partially or completely solved. The new devices are more reliable and accurate, and are designed to prevent or detect many forms of tampering and circumvention. NHTSA tests have indicated that the devices are more difficult to circumvent, but relatively uncomplicated strategies can still be used to "fool" these devices (e.g., use of bogus air samples or filters). In spite of these evasive practices, improvements are possible that would further address potential circumvention. NHTSA also noted that IID's are now being used by a specific population group (those subject to court supervision because they are convicted of driving under the influence) in passenger vehicles. Their placement in general use would likely meet public resistance due to costs. It should also be noted that the experience gained thus far has been in passenger motor vehicles only. What would the costs be to install comparable devices in commercial vehicles? What about vehicles used in other modes of transportation?

(a) *Performance Tests.* Early research on IID's had focused on performance tests as well as breath tests. However, research and development work have indicated that while performance tests may be operationally feasible, a useful device does not yet exist.

The Canadian transportation ministry funded research that compared one performance test, the Critical Tracking Tester (CTT), with another, the Tracometer. The CTT requires a driver to keep a pointer centered on a dial by appropriate movements of the steering wheel. The device generates random movements of the pointer at an increasing rate, requiring the driver to make corrective movements at an increasing speed. The Tracometer requires a driver to align a pointer with one of five targets that are randomly illuminated, requiring the driver to turn the wheel in the opposite direction of the desired pointer direction. The research concluded that the Tracometer provided better discrimination than did the CTT in detecting BAC limits (0.08 in Canada). However, the researchers concluded that while the Tracometer appeared to be promising, further work was necessary before a practical device would be available.

The NHTSA report concludes that a useful device does not yet exist and thus more work is needed. For example, the CTT's are least accurate at moderate BAC levels (0.05–0.10). The report also notes that there is apparently little development work currently being done on performance-based systems.

(b) *Breath Tests Using Ignition Interlock Devices.* With respect to breath alcohol testing, there are currently three IID's available on the market. Basically the devices are a simple form of a portable breath tester, but are not as sophisticated as evidential quality breath tests used by the police. The three IID's are fairly similar. Each has three components: an alcohol breath test unit, an electronic control device, and a connector to the vehicle's ignition and electrical system. The alcohol sensor is a breath test unit that is a hand-held unit and requires the driver to blow into the device. Only if the driver passes the test can the car be started. The devices use different sensors (pressure and/or temperature) to reduce the likelihood of circumvention.

The IID's currently are marketed primarily to traffic courts for use with drivers convicted of DWI/DUI. Such drivers may be required by the court to install a device on their car. (Manufacturers envision further use of the devices, such as by fleet owners or commercial vehicles.) Nine states have passed legislation authorizing the use of IID's with convicted DUI offenders. In California, for example, a two-year program was initiated and terminates at the end of 1989, when an evaluation will be made. (California's interlocks prevent persons with a BAC of 0.03 or above from starting the vehicle.) Other states are also considering legislation.

Based on the information available to date, the NHTSA report reached a series of general conclusions about the new breath test ignition interlock devices. These conclusions are listed in Appendix C.

Commenters should address the feasibility of implementing such a program of IID's for a particular company or industries, and specify the potential problems if such an approach were adopted. Would these devices have any application to types of vehicles other than motor vehicles? Will employees accept such devices? What are the practical problems of such devices? Will such a system be effective in cutting down the use of alcohol in the transportation industry? If used in the context of preperformance testing, what staffing problems would this cause? How will it affect accident rates? What are the costs? What are the ways of getting around the system? Even if the systems are not 100 percent tamper-proof, will the fact that such machines are in place make employees more aware of the need to stay sober? Are the

devices cost-effective if this is the case? Finally, IID's are accurate in detecting low BAC levels. Would the usefulness of the tests be affected if we prohibited any positive BAC level?

NHTSA estimated that the one-year lease costs for one IID could be as high as $400–$500. Would IID's be cost effective? How would IID costs compare to random testing costs, for example?

We welcome public comment on any additional new technological devices that are accurate and reliable.

h. *Post-Rehabilitation Testing.* Another approach would be to improve the follow-up of alcohol abusers who receive treatment and re-enter the work force. Alcohol testing could be useful as part of post-rehabilitation monitoring. Once an employee has undergone rehabilitation, there is a need to ensure continued disassociation from alcohol. However, many substance abusers do not restrict themselves to one type of drug; they often combine drugs, including alcohol. Alcohol testing could become a useful part of the follow-up testing of rehabilitated substance abusers.

Is there any data that shows alcohol use rises when drug use declines, or vice-versa? Should we require post-rehabilitation monitoring and a recommendation for reinstatement from the MRO or EAP counselor before an employee can be returned to the job? If not, who should make the decision on what kind of rehabilitation the employee needs? Who should make the determination that the employee has established control over the substance abuse problem and has a good prognosis for recovery? Should there be procedures by which the employee can contest a determination that he or she is not ready to return to work?

Should there be a uniform testing period after rehabilitation, or should this be determined on a case-by-case basis? If we adopt a uniform post-rehabilitation period, how long should it be? Should the length of the follow-up period depend on the BAC level that was detected? Should it depend on the severity of the individual's alcohol problem, as indicated by the kind of treatment that was found to be necessary? (For example, should someone undergoing inpatient rehabilitation be subject to post-rehabilitation testing for a longer time than someone who needs only abatement counseling?) Who should decide? Recognizing that alcoholism may be a lifetime disease, is there a period of time after the initial phase of rehabilitation when a relapse is most likely and during which testing would be valuable? If so, how long is that period? What should happen to a person who tests positive after completing rehabilitation? During the post-rehabilitation period, should we prescribe the minimum and/or maximum number of tests to be administered? We would want to ensure that any necessary tests would be given frequently enough to ensure that the employee is not abusing alcohol. At the same time, however, we do not want alcohol testing to become an instrument of harassment.

One alternative, on which we also invite comments, is a specified post-rehabilitation testing period that would apply only if the employee, the MRO, the EAP counselor, and perhaps the employer failed to agree on an individualized program. Such a fall-back system could provide, for example, for up to four additional tests during the 12 months following rehabilitation.

VI. Means of Alcohol Testing

A. Introduction

This section contains a discussion of the principal methods for conducting tests for the consumption of alcohol, including a list of some of the advantages and disadvantages of each methodology. Comments are requested concerning the cost and practicality of the various methodologies. Commenters should give references to specific studies in support of their comments.

B. Breath Testing

There are two types of breath testing devices: (1) The preliminary breath testing (PBT) device, discussed above in the preperformance section, a hand-held device that is useful as a screening tool; and (2) the evidentiary breath testing device (EBT), generally a larger machine found in police stations, that can provide results allowed as evidence in legal proceedings. The FRA allows the use of PBTs exclusively as a screening technique and requires evidentiary testing to follow.

In the breath alcohol test, often used by police agencies to test suspected drunk drivers, the subject blows into a machine that makes a chemical analysis of the expelled breath. The machine provides a reading expressed in terms of blood alcohol concentration. Breath tests, although they may be considered somewhat invasive, may nevertheless be less invasive and thus more acceptable to some people than other forms of tests. They provide a reasonably accurate measure of BAC, at least if they meet NHTSA specifications for accuracy and are properly calibrated. Many states accept the results of evidentiary breath testing devices as *per se* determinants of intoxication.

Perhaps most significant in the context of workplace testing, breath testing, unlike blood and urine tests, provides an immediate response, so that follow-up action can be instituted promptly. In addition, it does not require elaborate chain of custody procedures for collection or laboratory analysis, since no specimens have to be sent to a laboratory for analysis.

On the other hand, breath testing requires specific training and a quality control program to ensure proper administration of the test and calibration of the device. Calibration requires proper use of a breath alcohol simulator, which in turn may require that the unit be set up by a chemist following a specified procedure. The initial costs of EBT's (between about $400 and $5,000), as well as the costs of calibration, are substantial.

Comments are requested on procedural standards for conducting a breath test. We note that no nationally accepted standards exist, although the FRA, for example, has developed guidance materials for its programs. Each state, however, has its own standards for police administration of breath tests, and these standards vary considerably.

One potential problem with breath testing is that no sample remains after the test for retesting in the event of a challenge. This is of particular concern if the test is administered by the employer, because some employees may question the neutrality of the test; in such cases blood tests might be necessary in order to confirm a "positive" breath test result. What qualifications should people have to administer a breath alcohol test? Is there any need to confirm a breath alcohol test? We request comment on whether any have used this approach and had problems.

C. Blood Testing

In this approach, a blood sample is taken from the individual, by normal medical procedures for taking blood samples. The sample is sent to a laboratory where it is analyzed for blood alcohol concentration. Measurement is thus made of the actual blood alcohol concentration and the test does not rely on breath/blood partition or on interpolation from the urine concentration. Blood testing is accepted in all jurisdictions as evidence concerning whether the tested individual is or is not intoxicated. While the test must be conducted in a laboratory, the medical technology required is not especially great; there

are many laboratories that can perform these tests competently, although there is no certification program comparable to that offered by the Department of Health and Human Services for drug testing. (DOT's Transportation Systems Center does conduct a voluntary program of laboratory proficiency testing. Laboratories that sign up for the program are given blood samples with known quantities of alcohol; if the lab provides an inaccurate test result, it is notified so that it can correct its procedures or equipment.)

Nevertheless, blood testing is the most physically invasive of all forms of alcohol testing, and some people may be afraid of having blood drawn. In addition, taking a blood sample, while relatively simple, is still a medical procedure, and should be performed only by a qualified professional or technician and only at a suitable physical location. It may not be feasible to conduct field sampling of employees' blood. We seek comment on how those who have used this procedure have handled employee fear and other implementation problems.

Blood tests have the same problems as any other test that must be sent to a laboratory (including the drug tests required by the Department). That is, the results of the test are not immediately available, so there would inevitably be a delay before employers would be able to identify the need for further action. And it would be necessary to establish collection, chain of custody and laboratory procedures analogous to those for urine testing. We ask for comment on whether any acceptable procedures exists.

D. Urine Testing

In this approach, employees would give a urine sample, just as in the case of drug testing. The simplest method of administering a urine test would involve collecting a single sample. This would provide evidence with respect to prior alcohol use, but would not give a reliable indication of the current BAC level. A more elaborate two-step process can indicate current alcohol levels. In the first step, the test subject voids. The collector then waits until the subject can give a second sample, typically at least one-half hour. The second sample, since it includes only newly excreted fluids, can be interpolated to calculate the approximate blood alcohol concentration. The success of this method requires that the initial void be complete. The double void will take more employee time than the single void needed for urine drug testing, thus increasing costs.

Compared to blood testing, urinalysis is less invasive physically, although it may be considered more of a privacy invasion. Of all the types of tests, it has the advantage of requiring the least skill to perform the on-site steps. In addition, since urine samples are already being taken for drugs, a requirement to institute alcohol tests might require no additional personnel or on-site equipment. This could be a significant cost advantage.

The disadvantages of urinalysis parallel those of drug testing. The delay necessary between the time of collection and the time results are available means a corresponding delay before corrective action or rehabilitation can be begun, where necessary.

In addition, there is no uniform cut-off parallel to BAC and, except for the Transportation Systems Center's limited and voluntary laboratory proficiency program, there is no nationally-recognized system of regulation for laboratories performing alcohol tests. There is no question that a urine test, particularly a two-step test, can determine whether an individual has recently consumed measurable amounts of alcohol. Thus, if the Department were to establish a permissible alcohol level of "zero," there is little doubt that urinalysis could be a useful tool. Some might argue, however, that the correlation between alcohol concentration in urine and its concentration in blood is insufficiently precise to be used as a measurement for higher cutoffs, such as .04 or .10. However, we note that FRA authorizes the use of urinalysis for alcohol (with a conservative assumption that the urine concentration is 1.5 times the blood alcohol level), and some recent literature has also endorsed it. The use of conservative conversion factors may result in underestimation of the BAC.

E. Other Techniques

There are less-expensive means of determining approximate blood alcohol concentration. We specifically request public comment on the feasibility of using the following devices or other similar ones separately or in conjunction with other methods of testing.

There are strips that turn various colors when wet with saliva mixed with an enzyme. The colors indicate saliva-alcohol concentration, which statistically is a close approximation of blood alcohol concentration. According to a NHTSA study, this method appears to give highly variable results with a high incidence of false positives. However, it could be used by individuals to determine if they can safely drive.

A different device consists of a tube filled with chemical crystals. After breaking an internal ampul containing the crystals, the person being tested expels breath into the tube. The crystals change color to indicate the amount of alcohol in the subject's breath. The device does not accurately measure blood alcohol concentration, but it is useful to indicate the presence of alcohol in the individual's system, and has been marketed for use by private individuals who want to determine whether it is safe for them to drive.

One device now in use by some police agencies is the Passive Alcohol Sensor (PAS), an electronic device which tests ambient air in front of a driver's mouth for the presence of alcohol. It must be placed within six inches of the subject's mouth. The device gives false positives about 10 percent of the time, and temperature and wind conditions affect its accuracy. The more sophisticated PBT's are more accurate, but are also subject to environmental variations from cold, wind, subject's cooperativeness, etc.

These and similar devices could not be used as tests upon which legally effective determinations of intoxication could be made. However, it could be possible, if a blood or urine test were the method of choice, to use such devices as a means of screening employees. That is, if an employee showed no evidence of alcohol on one of these screening tests, a more costly and invasive blood or urine test might not be necessary. To use these devices for this screening purpose, it would be necessary to determine, as well, whether they tend to give false negative readings. We would appreciate public comment on this. We note that the concerns that the Department had with respect to the use of screen test results to make permanent employment decisions also apply to alcohol testing.

One other promising method for identifying people who may be under the influence of alcohol may be behavioral sobriety tests. NHTSA has developed a Standardized Field Sobriety Test (SPST), which comprises three psychophysical tests. The three tests are: Walk and Turn (walking a straight line and back again); One-Leg Stand (one stage of which requires the subject to stand on one leg and count from "one thousand and one" to "one thousand and thirty"); and Horizontal Gaze Nystagmus. The first two tests measure a person's balance, muscular coordination and ability to concentrate on two activities. The horizontal nystagmus technique, which is used by some police departments as part of a

roadside screening, relies on identifying the tendency of the eyes to jerk involuntarily as they move back and forth. This tendency becomes more pronounced with increased consumption of alcohol; depending upon the individual, usually the first clues of impairment occur at BAC levels of .05–.08. It is difficult to fake normal nystagmus and the horizontal gaze nystagmus test is reported to be the most accurate method of detecting alcohol use without breath analysis or other specialized equipment. However, significant training and practice is required to master and retain this "testing" skill. We specifically invite commenters to address the utility of increased training in this and/or other methods of identifying persons who have consumed alcohol.

VII. Other Practical Problems

If alcohol testing is proposed, there are a myriad of implementation questions that will need to be addressed. In many cases, they are the same as, or analogous to, questions that were addressed and resolved in the drug testing rules or the "Procedures for Transportation Workplace Drug Testing Programs" (49 CFR part 40). However, there may also be differences, and we invite commenters to address any practical problems they foresee, including recommended solutions.

One problem has been alluded to already: while we have limited the performance of drug tests to laboratories certified by the Department of Health and Human Services, there is no fully-comparable program to certify laboratories performing alcohol tests. Of course, some tests (i.e., breath) do not require laboratory analysis, so this may not be a problem. In addition, it may be that alcohol testing is sufficiently simple that no special certification is necesssary. On the other hand, if we were to require testing, we would want to take whatever measures are necessary to ensure the accuracy of test results. A related question involving laboratories is capacity. A mandatory alcohol testing program would undoubtedly increase demand for laboratory services greatly. Is there sufficient capacity in the industry to accommodate such a demand?

The role of a Medical Review Officer (MRO) would be another area of controversy. Should an MRO have to certify results before they are reported, as is done for drug testing? One important function of the MRO in connection with drug testing is to ascertain whether there is a legitimate explanation for the presence of drugs in the employee's system (e.g., ingestion of cough syrup). Does this consideration have relevance for alcohol? A legal explanation for the presence of drugs results in a negative finding. However, if an individual exceeds an established BAC level should it matter that it resulted from legal medication; i.e., if the person is under the influence of alcohol while performing a safety function, is it necessary to know more? Does the question turn on the level of alcohol prohibited? Even if an MRO would not be necessary to consider the circumstances of alcohol ingestion, would it not still be necessary to have an independent review of the chain of custody?

What are the costs associated with different types of testing? What kinds of calibration or other standards do we need for different types of tests?

VIII. Regulatory Process Matters

It is not clear at this preliminary point what the annual effect of any rule or program will be on the economy. To the extent the Department is aware of costs or benefits, it has provided that data in this document. However, there are too many variables and possible permutations of alternatives for the Department to provide an overall cost benefit analysis. Upon review of the comments, the Department will assess the costs and benefits if further regulatory action is deemed appropriate. We do not anticipate at this point that the annual effect on the economy will be $100 million or more for any particular mode. If it becomes apparent at a later stage in this rulemaking that the impact on the economy will be major, then we will prepare a regulatory impact analysis. Otherwise we will prepare an economic evaluation in accordance with the Department's Regulatory Policies and Procedures. Commenters should submit any relevant cost data.

This ANPRM is significant under the Department's Regulatory Policies and Procedures, because it involves matters of significant public and Congressional interest.

For the reasons noted above, at this time, we do not know whether there would be a significant economic impact on a substantial number of small entities. A Regulatory Flexibility Analysis will be prepared if we determine that this rulemaking would have such an impact. At this stage, we cannot determine whether this rule will impose any reporting or paperwork requirements under the Paperwork Reduction Act.

Federalism

Depending upon what action we determine to take, this rulemaking may have substantial effects on the states or on the relationship between the national government and the states. One option under consideration is to rely on increased state enforcement to combat the alcohol problem. Because of the many possibilities and permutations, at this time, we do not have enough information to determine whether a Federalism Assessment will be necessary in accordance with Executive Order 12612. We specifically request that commenters consider the impact on federalism of any of their comments or proposals.

List of Subjects

Alcohol abuse, Safety, Transportation.

Authority: 49 U.S.C. 322.

Issued in Washington, DC, October 27, 1989.

Samuel K. Skinner,

Secretary of Transportation.

IX. Appendix A—Bibliography

Billings, C. E., R. L. Wick, R. J. Gerke, and R. C. Chase. 1972. "The Effects of Alcohol on Pilot Performance During Instrument Flight." Report FAA–AM–72–4. Federal Aviation Administration, U.S. Department of Transportation. Cited by H. Moskowitz (1973).

Connors, G. J., and S. A. Maisto. 1980. Effects of Alcohol, Instructions and Consumption Rate on Motor Performance. "Journal of Studies on Alcohol", Vol. 41, pp. 509–517.

Crancer, A. (1986). The Myth of the Social Drinker-DUI Driver. Unpublished paper presented at the Joint Meeting of the American Medical Society on Alcoholism and Other Drug Dependencies, April 18–22, 1986, San Francisco, CA.

Drew, G. C., W. P. Colquhown, and H. A. Long. 1959. Effect of Small Doses of Alcohol on a Skill Resembling Driving. Her Majesty's Stationery Office, London.

Drunk Driving Facts, U.S. Department of Transportation, National Highway Traffic Safety Administration, July 1989.

Eichler, S., C. M. Goldberg, L. E. Kier, and J. P. Allen, "Operation: Redblock Case Study," U.S. Department of Transportation, Federal Railroad Administration, October 1988.

Evans, M. A., et al. 1974. Quantitative Relationship Between Blood Alcohol Concentration and Psychomotor Performance. "Clinical Pharmacology and Therapeutics," Vol. 15, No. 3, pp. 253–260.

Falkowski, C. (1984). "The Impact of Two-Day Jail Sentences for Drunk Drivers in Hennepin County, Minnesota." Final Report, National Highway Traffic Safety Administration, Washington, DC.

Field Manual For Control of Alcohol and Drug Use in Railroad Operations, U.S. Department of Transportation, Federal Railroad Administration, March 1986.

Forney, R. B., F. W. Hughes, H. R. Hulpieu, and C. A. Fsbod/1961. Performance in a Gymkhana Sports Car Event with Low Levels

of Blood Alcohol. "Traffic Safety Research Review," Vol. 5, No. 3, pp. 5–12.

Klein, T. (1989). "Change in Alcohol-Involved Fatal Crashes Associated With Tougher State Alcohol Legislation." Contract DTNH22–88–C–07045 National Highway Traffic Safety Administration, Washington, DC.

Landauer, A. A., and P. Howat. 1983. Low and Moderate Alcohol Doses, Psychomotor Performance and Perceived Drowsiness. "Ergonomics," Vol. 26, No. 7, pp. 647–657.

Laurell, H. 1977. Effects of Small Doses of Alcohol on Driver Performance in Emergency Traffic Situations. "Accident Analysis and Prevention," Vol. 9, pp. 191–201.

Lister, R. G., and S. E. File. 1983. Performance Impairement and Increased Anxiety Resulting from the Combination of Alcohol and Lorazepam. "Journal of Clinical Psychopharmacology," Vol. 3, pp. 66–71.

Lovibond, S. H., and K. Bird. 1970. Effects of Blood Alcohol Level on the Driving Behavior of Competition and Non-Competition Drivers. Presented at 29th International Conference on Alcoholism and Drug Dependence, Sydney, Australia.

Moskowitz, H. 1973. Laboratory Studies of the Effects of Alcohol on Some Variables Related to Driving. "Journal of Safety Research," Vol. 5, No. 3, pp. 185–197.

Moskowitz, H., M. Burns, and A. Williams. 1985. Skills Performance at Low Blood Alcohol Concentrations. "Journal of Studies on Alcohol," Vol. 46.

National Highway Traffic Safety Administration (1988). "Fatal Accident Reporting System: A Review of Information on Fatal Traffic Accidents in the United States in 1987." National Center for Statistics and Analysis, Washington, DC.

National Highway Traffic Safety Administration, "Further Laboratory Testing of In-Vehicle Alcohol Test Devices," NHTSA Technical Report No. DOT HS–807–333.

Nichols, J., Ellingstad, V. and Struckman-Johnson, D. (1978). An experimental evaluation of the effectiveness of short term education and rehabilitation programs for convicted drinking drivers. In Galanter M. (Ed.) "Currents in Alcoholism: Treatment and Rehabilitation and Epidemiology, Volume VI." Grune and Stratton, New York, NY.

Nichols, J., Weinstein, E., Ellingstad, V. and Reis, R. (1980). The effectiveness of education and treatment programs for drinking drivers: A decade of evaluation. In "Proceedings of the 8th International Conference on Alcohol, Drugs, and Traffic Safety, Stockholm, Sweden," National Highway Traffic Safety Administration, Washington, DC.

Nichols, J. and Ross, L. (1988). The effectiveness of legal sanctions in dealing with drinking drivers. In "Surgeon General's Workshop On Drunk Driving: Background Papers." U.S. Department of Health and Human Services, Washington, DC.

O'Neill, B., A. Williams, and K. Dubowski. 1983. Variability in Blood Alcohol Concentrations. "Journal of Studies on Alcohol," Vol. 44, No. 2, pp. 222–230.

Peck, R., Sadler, D. and Perrine, M. (1985). The comparative effectiveness of alcohol rehabilitation and licensing control actions for drunk driving offenders: A review of the literature, "Alcohol, Drugs, and Driving: Abstracts and Reviews." *1*(14), 15–39.

"Potential for Application of Ignition Interlock Device to Prohibit Operation of Motor Vehicles by Intoxicated Individuals: A Report to Congress, May 1988," Rpt. No. DOT HS–807–281. This report is available by request from the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, VA.

Preusser, D., Blomberg, R., and Ulmer, R. (1988) "Follow-Up Evaluation of Wisconsin's 1982 Drinking and Driving Law." Final Report on Contract DOT HS 807 377, National Highway Traffic Safety Administration, Washington, DC.

Ryder, J.M., S.A. Malin, and C.H. Kinsley. 1981. "The Effects of Fatigue and Alcohol on Highway Safety." Report DOT HS–805 854. National Highway Traffic Safety Administration, U.S. Department of Transportation.

Siegal, H. (1985) "Impact of Driver Intervention Program on DWI Recidivism and Problem Drinking." Final Report on Contract No. DTNH 22–83–C–05150, National Highway Traffic Safety Administration, Washington, DC.

Tashima, H. and Peck, R. (1986) "An evaluation of the California Drunk Driving Countermeasure System: Volume 3, An evaluation of the Specific Deterrent Effects of Alternative Sanctions for First and Repeat DUI Offenders." Dept. of Motor Vehicles, Sacramento, CA.

U.S. Census Bureau. 1984b. Statistical Abstract of the United States. U.S. Department of Commerce. p. 106.

Voas, R. (1986) Evaluation of jail as a penalty for drunk driving. "Alcohol, Drugs and Driving: Abstracts and Reviews," Alcohol Information Service, Neuropsychiatric Institute, University of California, *2*(2), 47–70.

Wilson, J.R., et al. 1984. Effects of Ethanol II. Behavioral Sensitivity and Acute Behavioral Tolerance. "Alcoholism: Clinical and Experimental Research," Vol. 8, No. 4, pp. 366–374.

Wyckoff, D.C. 1979. "Truck Drivers in America." D.C. Heath and Co., Lexington, Mass.

Yesavage, J.A., and V.O. Leirer, Hangover Effects on Aircraft Pilots 14 Hours After Alcohol Ingestion: A Preliminary Report, "American Journal of Psychiatry," December 1986, p. 1546.

Zador, P., Lund, A., Fields, M. and Weinberg, K. (1988) "Fatal Crash Involvement and Laws Against Alcohol-Impaired Driving." Insurance Institute For Highway Safety, Washington, DC.

"Zero Alcohol and Other Options, Special Report 216," Transportation Research Board, National Research Council, 1987, p. 40.

X. Appendix B—Existing DOT Regulations

A. Alcohol

1. Introduction

As a general matter, the Department's alcohol efforts have focused on alcohol as it affects an individual's medical qualifications; prohibitions on on-duty use and, in certain cases, use just prior to reporting to work; and sanctions for violations of the Federal regulatory scheme. With limited exceptions, alcohol testing is left to State enforcement personnel. (Coast Guard and FRA rules provide for post-accident and reasonable cause testing. FAA requires crewmembers to submit to tests upon request.) The Department has nine operating administrations. A brief description of their general functions and their specific responses to the problem of alcohol use or abuse follow.

2. Current Modal Administration Regulations

a. *U.S. Coast Guard.* The Coast Guard carries out a number of functions including commercial vessel and recreational boating safety, search and rescue missions, enforcement of maritime law, bridge administration, port and environmental safety, regulation of deepwater ports, marine environmental responses, icebreaking operations, and aids to navigation. In addition, in conjunction with other agencies, the Coast Guard carries out drug interdiction actions aimed at stopping the importation of drugs into the U.S. through its coastal waters.

The Coast Guard has broad authority for commercial vessel safety. The Coast Guard issues licenses and merchant mariner documents to merchant seamen. It also investigates marine casualties and can and does proceed against licenses or documents for violation of dangerous drug laws or for negligent acts while under the influence of alcohol. The Coast Guard also has been taking action against licenses and merchant mariner's documents of seamen who have been found to be either in the possession of intoxicating liquor or intoxicated by alcohol.

The Coast Guard Authorization Act of 1984 established civil and criminal penalties for operating a vessel while intoxicated, as determined under standards developed by the Coast Guard. In addition to establishing penalties for operating a vessel while intoxicated, the Act requires future reports of marine casualties to include information concerning whether the use of alcohol contributed to the casualty. The Coast Guard issued a final rule, effective January 13, 1988, implementing the directive in the 1984 Authorization Act. It established Federal behavioral and blood alcohol concentration (BAC) intoxication standards for both commercial and recreational vessel operators. Either the behavioral or BAC standard can independently be used to determine intoxication. The behavioral standard is useful, because blood tests may be refused or not taken in a timely manner.

The rule applies a .04 percent BAC standard to operators of all commercial vessels, including fishing vessels. For recreational boaters, the Federal BAC standard is .10 percent. This and the Federal behavioral standard apply only in the absence of existing State BAC and behavioral standards or outside of State territorial waters. For example, if a State has only a behavioral standard, the Federal .10 percent BAC level would also apply to recreational boaters. The rule does not preempt enforcement by a State of its applicable laws and regulations concerning operating a recreational vessel while intoxicated or limit more stringent employer-sponsored programs.

The rule requires employers to ensure that intoxicated individuals are not permitted on

duty. Crewmembers are prohibited from operating a vessel while intoxicated, drinking on duty or assuming duties within four hours of consuming alcohol. The rule covers U.S. vessels operating anywhere, foreign vessels operated in U.S. waters and individuals with an essential role in operating a vessel, but not when they are on shore. It provides for licensed personnel to seek voluntary rehabilitation prior to being subject to a suspension or revocation proceeding for intoxicant-related incompetence; allows Coast Guard officers to terminate the use of certain vessels when the operator appears to be under the influence of an intoxicant so that further operation creates an unsafe condition; and requires employers' reports on marine casualties to include specific information on the role of intoxicants in the accident.

The rule allows post-accident and reasonable cause testing for intoxicants by employers and State law enforcement officials. Where practicable, the marine employer's determination of reasonable cause should be based on observation of the individual's behavior and demeanor by two persons. Refusal by commercial mariners to submit to a test is presumptive of intoxication (if State law permits such a presumption; this is true for recreational boaters as well). Individuals determined to be intoxicated will have the opportunity during judicial or administrative hearings to dispute the charge.

In addition, the Coast Guard has instructed its casualty investigators to be closely attuned to the possibility of drug or alcohol involvement in marine casualties and is training investigators to look for and recognize alcohol or drug ties to accidents. The Coast Guard, in cooperation with the National Association of State Boating Law Administrators, and the National Transportation Safety Board (NTSB), has developed and distributed to the states a set of guidelines for states to use in developing state legislation addressing the drug and alcohol problem. Among other concerns, the guidelines address restrictions and prohibitions that should be considered, testing, evidentiary requirements, penalties, and education.

Independent of present regulations, the master of a vessel traditionally has had plenary disciplinary authority aboard his vessel. Even today, a master may, and often does, deal with alcohol-related problems by logging individuals who are intoxicated and docking their pay.

Upon completion of the voyage, a Coast Guard marine investigator reviews the ship's log. In addition to the shipboard punishment imposed by the master, the investigator normally will charge a mariner with misconduct for failure to perform due to intoxication, subjecting the mariner to a suspension and revocation proceeding before an Administrative Law Judge. Depending on the circumstances of the incident, the mariner may be given a letter of admonishment, a suspension under probation, or outright suspension or revocation of his license and/or document. The Administrative Law Judge also may direct the mariner to enter a rehabilitation program.

The Coast Guard also has internal procedures that address alcohol problems and drug use by its military employees.

b. *Federal Aviation Administration.* The Federal Aviation Administration (FAA) is charged with regulating air commerce. This includes programs governing safety, airspace and air traffic management, air navigation facilities, research, engineering, development, testing and evaluation of systems needed for a safe and efficient system, airport development and aircraft registration.

FAA alcohol regulations cover pilots, flight engineers, and other crewmembers. For example, they prohibit any pilot from acting or attempting to act as a crewmember if he or she is under the influence of alcohol, or has consumed any alcoholic beverage within 8 hours of reporting for duty. FAA regulations also prohibit a pilot from flying with a blood alcohol concentration (BAC) of .04 or higher. The FAA can suspend or revoke a certificate or assess penalties for failure to comply with its regulations.

The FAA requires pilots to have medical examinations (private and recreational pilots—once every 2 years; commercial pilots—once every year; airline transport pilots—once every 6 months). If a history of drug dependence, alcoholism, or mental problems is discovered, the FAA may disqualify the pilot. The FAA also uses a "driving while intoxicated" (DWI) or a "driving under the influence" (DUI) conviction as an indication of a possible alcohol or drug problem. The FAA recently issued a notice of proposed rulemaking designed to identify those pilots that are convicted of driving while intoxicated or driving under the influence and review their medical qualifications in light of such convictions.

Finally, the FAA requires crewmembers to submit to an alcohol test on request of a law enforcement officer who has a reasonable basis to believe that the crewmember may have violated state alcohol rules. The law enforcement officer must be authorized under State or local law to obtain such tests. State law and practices vary; only six states give explicit authority to obtain such tests.

It is also important to note the role of international conventions in this area. Annex 2 to the Convention on International Civil Aviation (the Chicago Convention), section 2.5, of which the United States is a contracting state, provides that no person shall pilot or act as a flight crewmember while impaired by an intoxicating liquor or narcotic drug.

c. *Federal Highway Administration.* The Federal Highway Administration (FHWA) is involved in a variety of areas such as financial assistance, highway construction and motor carrier safety. It has the authority to establish medical/physical qualification requirements for truck and bus drivers and has had regulations on this subject for over 30 years. Within the context of a comprehensive, nationwide revamping of testing, licensing and disqualification procedures for commercial motor vehicle (CMV) operators, the FHWA recently established stringent regulations defining driving under the influence of alcohol (DUI) for commercial drivers. However, enforcement of the DUI standard continues to be primarily the responsibility of the States in the motor carrier field.

FHWA regulations require that commercial drivers submit to a medical examination once every two years. A driver will not be considered physically qualified to drive a motor vehicle if, among other things, the driver is currently a practicing alcoholic.

FHWA regulations prohibit the use of alcoholic beverages within four hours of reporting to work, and prohibit a driver from working while having any measured BAC or any detected presence of alcohol in his or her system. These and related infractions carry a 24-hour out-of-service penalty.

The CDL regulations and the FMCSRs also require that a driver be disqualified for one year if the driver is convicted of a DUI offense at the .04 percent BAC level or greater, or for a drug offense. The offenses must have occurred while the driver was driving a CMV or a vehicle subject to the FMCSRs. Second offenses, or offenses involving the movement of hazardous materials, carry longer disqualification penalties, ranging from three years to life.

The Commercial Driver's License Information System (CDLIS), implemented under the Commercial Motor Vehicle Safety Act of 1986, will constitute a useful tool for identifying and removing from the road problem drinkers who drive CMVs. After March 31, 1992, every driver of a CMV nationwide will be required to hold a CDL from his or her state of domicile, issued according to FHWA standards. Since the CDLIS will be the nationwide clearinghouse for driving record information for all CDL holders, and since states must check with the CDLIS to yield important highway safety benefits in the alcohol area.

On October 4, 1988, FHWA issued regulations whereby a commercial motor vehicle (CMV) driver found to have a blood alcohol concentration level of .04 or above will be deemed to be DUI. States are required to adopt this standard for CMV operators, or face the loss of highway funding. They also require commercial motor vehicle operators with any measured BAC to be placed out-of-service for a 24 hour period.

The new DUI standard has not as yet been applied by the States. Under the statutory mandate that authorized the Department to set the DUI standard, Congress recognized that it would take some time for the States to implement the program. Therefore, States have until September 30, 1993 to adopt these standards. The States are rapidly enacting legislation to implement the entire CDL program, including its BAC provisions; over half the States had enacted the .04 percent BAC level for CMV drivers by late summer 1989. The FHWA program thus establishes a DUI standard for a CMV driver, and sets penalties, which are to be enforced by the States. Currently, alcohol testing is done by the States, but the new provisions mandate a lower and uniform BAC, as well as penalties.

d. *Federal Railroad Administration.* The Federal Railroad Administration (FRA) is involved in areas such as railroad safety, financial assistance, and national rail transportation policy. Since 1970, FRA has

had statutory authority to regulate all fields of railroad safety, including employee qualifications as they relate to safety. Historically, FRA encouraged rail management and labor to work together on alcohol and drug prevention programs, especially employee assistance programs. However, such programs were not required.

In 1985, FRA issued a final rule governing the conduct of railroads and employees subject to the Hours of Service Act (engine, train and yard crews, dispatchers and train order operators, and signal employees). The final rule prohibits on-the-job use, possession of or impairment by alcohol or any controlled substance as well as having a BAC level of .04 or more.

The rule mandates full toxicological testing (blood and urine) after certain accidents that involve significant public interest or a high likelihood of human failure (approximately 200 events per year). Railroads also are authorized to conduct breath and urine tests: (1) On reasonable suspicion of impairment; (2) after a human factor accident/incident; and (3) after other specified operating/safety rule violations. Effective March 1, 1986, railroads were required to institute pre-employment drug screening for potential employees, which may include alcohol analysis. The rule further requires railroads to have "voluntary referral" policies, thereby allowing workers to enroll in assistance programs.

e. *Maritime Administration.* The Maritime Administration (MARAD) administers programs to aid the development, promotion, and operation of the U.S. merchant marine. MARAD also administers of U.S. Merchant Marine Academy, which has an enrollment of approximately 1,100 people. The Academy regulations strictly forbid the use and possession of controlled substances and the use and possession of alcohol on Academy grounds. (Consumption of alcohol for special events can be authorized.) Entering freshman at the Academy must submit to urinalysis as part of the admissions process. For good cause, a midshipman can be sent to the infirmary for urine or blood tests for drug or alcohol use. Confirmation of a drug or alcohol rule violation leads to automatic explusion. A full administrative hearing procedure is available. There is also an active counseling program on campus.

f. *National Highway Traffic Safety Administration.* The National Highway Traffic Safety Administration (NHTSA) carries out programs relating to the safety performance of motor vehicles and related equipment, motor vehicle drivers and pedestrains, a national maximum speed limit, and a national minimum drinking age, among other things.

NHTSA is actively involved in developing programs to reduce alcohol and other drug use by all motorists, including operators of commercial vehicles. NHTSA's programs include providing technical and financial assistance to the states.

Under the section 402 program, NHTSA provides for a variety of State highway safety programs. In a joint final rule, published in April 1988, NHTSA and FHWA identified national priority program areas; included among them are alcohol and other drug counter-measures such as enforcement, education and public information and improvement of records and court systems. NHTSA provides technical assistance to states for DUI enforcement, such as the development and promotion of the use of its Standardized Field Sobriety Test (SFST), SFST training and SFST instructor training. The SFST consists of three psycophysical tests that are used to detect drug and alcohol impairment. The three tests are: Walk and Turn (walking a straight line and back again); One-Leg Stand (one stage of which requires the subject to stand on one leg and count from "one thosand and one" to "one thousand and thirty"); and Horizontal Gaze Nystagmus. The first two tests measure a person's balance, muscular coordination and ability to concentrate on two activities. The horizontal nystagmus technique, which is used by some police departments as part of a roadside screening, relies on identifying the tendency of the eyes to jerk involuntarily as they move back and forth.

The section 408 alcohol incentive grant program provides funds to States that have improved laws and programs to reduce traffic safety problems involving drivers under the influence of alcohol or a controlled substance. The program is available to all qualifying States—21 have currently qualified. Through the 408 program, NHTSA also awards grants to States that have programs that satisfy certain supplemental criteria established by regulation, or that enact tough sentencing laws for individuals convicted of driving under the influence of alcohol.

Finally, a joint NHTSA/FHWA regulation implements the Federal statute that requires that certain Federal highway funds be withheld from States that permit the purchase or public possession of alcohol by those under the age of 21. The law provides for a five percent total withholding in FY87 and a ten percent withholding in all succeeding fiscal years.

g. *Research and Special Programs Administration.* The Research and Special Programs Administration (RSPA) regulates the safety of transportation of hazardous materials and the transportation of natural gas and hazardous liquids by pipeline, collects air carrier economic data, and conducts multimodal transportation research and development.

RSPA has no specific regulations on alcohol. It does have a general regulation on health of pipeline workers at liquified natural gas plants. Pipeline operators must look for any physical condition that would impair performance, including any observable disorder or condition that is discoverable by a professional examination.

h. *St. Lawrence Seaway Development Corporation.* The St. Lawrence Seaway Development Corporation (SLSDC) is responsible for the development, operation and maintenance of that portion of the St. Lawrence Seaway that falls within the territorial limits of the U.S.

No specific legislation or SLSDC regulation covers alcohol and other drug use, but a general regulation allows the Corporation to prohibit the transit of a vessel if the crew is incompetent or inadequate and to board the vessel to determine this. The U.S. Coast Guard regulations apply to U.S. pilots, crewmen and vessels.

i. *Urban Mass Transportation Administration.* The Urban Mass Transportation Administration (UMTA) assists in developing improved mass transportation facilities, planning and financing of such systems, and encouraging private sector involvement in local mass transit systems.

The UMTA grant statutes prohibit the agency from making grants unless recipients have the legal, technical, and financial capability to carry out UMTA-assisted projects, including the ability to provide safe transit services. Grantees must exercise satisfactory continuing control over UMTA-assisted facilities and equipment. UMTA has no current regulations concerning alcohol. Even so, many of UMTA's grantees are subject to other Federal requirements on alcohol use. All commuter rail lines funded by UMTA, for example, are subject to FRA regulations. All drivers of UMTA-funded vehicles that are capable of carrying more than 15 passengers, including the driver, are subject to the FHWA DUI standards. However, other grantees, small transit systems, for example, and all UMTA-funded rail systems other than commuter rail, are not subject to Federal requirements on alcohol use.

B. Drugs

On November 21, 1988, six modal administrations of the Department of Transportation published final rules that require the commercial transportation operators they regulate to test employees in sensitive safety- and security-related occupations for drugs and to develop employee assistance programs (EAP) to provide information and training. The rules cover approximately 4 million persons in the aviation, highway, railroad, pipeline, mass transit and maritime industries. The employers are required to conduct preemployment, periodic (physicals), post-accident, reasonable cause, random, and return to duty drug tests and to test for five classes of drugs: marijuana, cocaine, amphetamines, phencyclidine (PCP) and opiates. The testing must be conducted in accordance with DOT-wise regulations based on the Department of Health and Human Services Guidelines (HHS), which are designed to protect the privacy and dignity of the individuals tested. A positive initial screening test is followed by a more specific gas chromatography/mass spectrometry confirmation test. Persons who confirm positive must be removed from their sensitive safety- or security-related position. They can be reinstated only upon successful completion of a rehabilitation program and a return to duty test. The rules encourage, but do not require employers to establish rehabilitation programs. Most testing will begin in December 1989. Small companies have an extra year to imlement drug testing.

XI. Appendix C—NHTSA Conclusion on IID's

• Ignition interlock technology based on breath alcohol test devices for detecting and

preventing alcohol-impaired driving does appear feasible at this time. Devices that measure a driver's BAC level are currently being marketed and used.

- Laboratory tests have shown the current breath test ignition interlock devices, when set to interlock at 0.03 percent BAC, to be relatively accurate in detecting low (i.e., 0.04 percent BAC) as well as high driver BAC levels. The accuracy and reliability of these devices under real-world conditions is unknown. There is no apparent reason why any operational problems cannot easily be overcome.
- The devices contain anti-tampering and circumvention measures that appear to reduce the likelihood of many forms of tampering and circumvention. Such activity by users is not impossible, but operational experience and testing will indicate the extent to which tampering and circumvention will be a problem.
- Current interest has focused on applying this technology to convicted DWI offenders as a condition of probation or to obtain a restricted driving privilege. Critical information necessary to estimate the potential effectiveness of these devices in this application is lacking. This includes whether the devices function properly under real-world conditions and evidence that persons required to use the devices do not tamper or circumvent their use and do not elect to operate other vehicles when drinking.
- There is not yet enough evidence available to judge how effective these devices will be in deterring alcohol-impaired driving and related crashes.
- It is not appropriate for these devices to be used in lieu of other sanctions that have evidence of beneficial effects (e.g., license suspension). Use of this technology as an additional condition of probation or for reinstatement of a restricted driving privilege does appear appropriate.
- The use of these devices with other populations may be feasible (e.g., fleet owners could install them, commercial and public transportation vehicles could be equipped, and individuals interested in this protection could pay for their installation). Widespread use of this type would have to overcome resistance due to the costs, liability issues, and public acceptability issues. Also, considerable research is needed to ascertain the practicality of these uses of the devices.
- Ignition interlock technology for detecting and preventing drug-impaired driving does not appear feasible at this time. There is no easy or feasible in-vehicle test method currently known to detect the use of drugs. In addition, the cost and complexity of testing for different drugs thought to impair driving skill (including legal as well as illegal drugs), makes such an approach even more impractical.

The most immediate issues outstanding regarding the use of breath test ignition interlock technology with convicted DWI offenders are:

- Their operational performance in the real world (i.e., their accuracy, reliability, maintenance and calibration requirements);
- The extent to which the devices are tampered with, circumvented, or non-equipped vehicles are used by persons ordered to only drive cars with ignition interlock devices installed;
- The effectiveness of these devices in reducing alcohol-impaired driving; and
- The certification standards adopted by the states authorizing use of the devices.

NHTSA research will help address these needs:

- NHTSA is currently initiating a project to develop model performance guidelines and test procedures that states can use in developing their own certification standards.
- NHTSA is providing grant funds to California to support their ongoing evaluation of their ignition interlock program.
- NHTSA will provide technical assistance to states or local communities interested in evaluating the effectiveness of their ignition interlock program.

[FR Doc. 89-25802 Filed 10-31-89; 8:45 am]

BILLING CODE 4910-62-M