PREVALENCE, COSTS, AND HANDLING OF DRINKING PROBLEMS ON SEVEN RAILROADS

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16. Abstract

This report presents and discusses the results of Project REAP (Railroad Employee Assistance Project), an in-depth study of the size of the alcohol abuse problem in the railroad industry, the effects of the problem on companies and employees, and the effectiveness of methods currently used to combat the problem. The study was funded by the Federal Railroad Administration and monitored for technical quality by the Transportation Systems Center. Seven major railroads and their labor organizations participated in the study. The data on which the findings and recommendations are based came from 240 key management and labor personnel who gave personal interviews, 6,300 randomly selected employees, who completed mailed questionnaires (approximate response rate of 70 percent), and interviews of staff members at the employee assistance programs of each carrier. The seven studied railroads employ 234,000 workers, about half of the work force in the country's entire industry.

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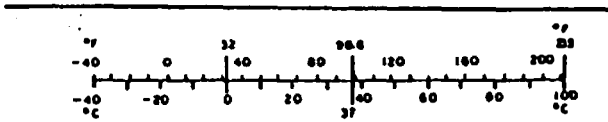
METRIC CONVERSION FACTORS

Approximate Conversions to Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
		LENGTH		
in	inches	2.5	centimeters	cm
ft	feet	30	centimeters	cm
yd	yards	0.9	meters	m
mi	miles	1.6	kilometers	km
		AREA		
in^2	square inches	6.5	square centimeters	cm^2
ft^2	square feet	0.09	square meters	m^2
yd^2	square yards	0.8	square meters	m^2
mi^2	square miles	2.6	square kilometers	km^2
	acres	0.4	hectares	ha
		MASS (weight)		
oz	ounces	28	grams	g
lb	pounds	0.45	kilograms	kg
	short tons (2000 lb)	0.9	tonnes	t
		VOLUME		
tsp	teaspoons	5	milliliters	ml
Tbsp	tablespoons	15	milliliters	ml
fl oz	fluid ounces	30	milliliters	ml
c	cups	0.24	liters	l
pt	pints	0.47	liters	l
qt	quarts	0.95	liters	l
gal	gallons	3.8	liters	l
ft^3	cubic feet	0.03	cubic meters	m^3
yd^3	cubic yards	0.76	cubic meters	m^3
		TEMPERATURE (exact)		
°f	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°c

Approximate Conversions from Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
		LENGTH		
mm	millimeters	0.04	inches	in
cm	centimeters	0.4	inches	in
m	meters	3.3	feet	ft
m	meters	1.1	yards	yd
km	kilometers	0.6	miles	mi
		AREA		
cm^2	square centimeters	0.16	square inches	in^2
m^2	square meters	1.2	square yards	yd^2
km^2	square kilometers	0.4	square miles	mi^2
ha	hectares (10,000 m^2)	2.5	acres	
		MASS (weight)		
g	grams	0.035	ounces	oz
kg	kilograms	2.2	pounds	lb
t	tonnes (1000 kg)	1.1	short tons	
		VOLUME		
ml	milliliters	0.03	fluid ounces	fl oz
l	liters	2.1	pints	pt
l	liters	1.06	quarts	qt
l	liters	0.26	gallons	gal
m^3	cubic meters	35	cubic feet	ft^3
m^3	cubic meters	1.3	cubic yards	yd^3
		TEMPERATURE (exact)		
°c	Celsius temperature	9/5 (then add 32)	Fahrenheit temperature	°f



LIST OF ABBREVIATIONS

AA	Alcoholics Anonymous
AAR	Association of American Railroads
AP	Associated Press
AREAP	Association of Railroad Employee Assistance Programs, Inc.
BAC	Blood Alcohol Concentration
BLE	Brotherhood of Locomotive Engineers
BMW	Brotherhood of Maintenance of Way Employees
BN	Burlington Northern Railroad
BRAC	Brotherhood of Railway and Airline Clerks
ConRail	Consolidated Rail Corporation
DM&IR	Duluth, Missabe And Iron Range Railroad
DOT	US Department of Transportation
EAP	Employee Assistance Program
FRA	Federal Railroad Administration
FSI	Frequency Severity Index used by Project REAP to Measure Problem Drinking
GM	General Motors
HEW	US Department of Health, Education and Welfare
IAM	International Association of Machinists and Aerospace Workers
IBEW	International Brotherhood of Electrical Workers
ICG	Illinois Central Gulf Railroad
LIRR	Long Island Railroad
NCA	National Council on Alcoholism
NIAAA	National Institute on Alcohol Abuse and Alcoholism
Non-Ops	Nonoperating Crafts Personnel
NTSB	National Transportation Safety Board
Ops	Operating Crafts Personnel
oz	Ounces
REAP	Acronym for this project (Railroad Employee Assistance Project)
RLEA	Railway Labor Executives Association
RRB	US Railroad Retirement Board
SCL	Seaboard Coast Line Railroad
SP	Southern Pacific Railroad
SRG	Social Research Group, School of Public Health, University of California, Berkely
TSC	Transportation Systems Center
URC	University Research Corporation
UTU	United Transportation Union.

GLOSSARY

Absenteeism - persistent failure to appear at scheduled times for the performance of work or to be available when subject to call.

Abstinence - refraining from drinking at all times, or drinking only on rare and exceptional occasions in small amounts (for example, as part of a formal test or religious ritual, or by mistake).

Accidents - performance mistakes that result in physical damage or pain to the performer or to other workers; also, unintentional damage to equipment or facilities.

Aftercare - services rendered to patients after their formal discharge from treatment, and intended to reinforce the desired effects of treatment.

Alcohol abuse - the act of consuming alcoholic beverages in a quantity, in a manner, or in a situation that is contrary to the law or that evokes disapproval, often because it is judged at least potentially harmful to the drinker or others. On railroad property, all consumption of alcohol is in violation of company drinking rules. Sometimes used pejoratively; or used ambiguously as a substitute for alcohol addiction, alcohol dependence, alcohol intoxication, alcohol misuse, alcoholism, excessive drinking episodes, habitual excessive drinking, problem drinking, and also with other meanings or other combinations of these meanings either to avoid commitment to a specific meaning or from uncertainty about the nature of the behavior or condition thus labeled.

Alcohol addiction - a form of dependence on alcohol characterized by an overwhelming need to drink intoxicating amounts of alcoholic beverages. It is marked by the drive to obtain the gratification of alcohol intoxication or to escape mental or physical distress, and by loss of control over drinking. The behavior has been attributed to a learned or conditioned dependence activated by critical internal or environmental stimuli, or to a hypothetical alteration in cellular matabolism consequent upon habituation to large amounts of the drug, with development of a withdrawal syndrome when the craving is not relieved.

Alcoholics Anonymous (A.A.) - a fellowship of self-proclaimed alcoholics who reinforce their practice of abstinence through frequent meetings of local groups, at which they narrate their personal histories and constantly affirm their common creed, rules of conduct, and commitment to serve other alcoholics. To avoid notoriety and exploitation, the members refrain from publicizing their names.

Alcoholism - a condition or disease involving a chronic dependence on alcohol manifested by loss of control over drinking and characterized by a consumption of alcoholic beverages sufficiently great and consistent to cause physical or mental or social or economic disability.

Alcoholism program - a planned activity for the detection, identification, or evaluation of behaviors indicative of actual or incipient alcoholism, or for the treatment or referral to treatment of such persons, or for any combination of these undertakings. Or, more broadly, the application of a series of organizational intentions and intervention strategies (policy) in the workplace aimed at making rehabilitation and treatment available to employees with drinking problems and toward securing improvement in their alcohol-related impaired performance.

Arbitration - the hearing and determination of a case in controversy by persons chosen by the parties or appointed under statutory authority. According to provisions of the Railway Labor Act, certain major disputes can be resolved only by agreement of labor and management. Other disputes, such as disciplinary problems or grievance procedures, can be resolved unilaterally with no further recourse available. Disputes over violation of Rules G, H, or P are examples of disciplinary controversies that can be settled without arbitration.

Area coordinator - a person under the supervision of the director of the employee assistance program who is responsible for one geographical segment of a program. Ideally, this individual will have reporting to him counselors who provide one-to-one services to clients referred to the program.

Blood alcohol, blood alcohol concentration, blood alcohol level - the proportion of alcohol in the blood of the organism. The value is frequently expressed as a percentage of the weight of alcohol per unit of blood volume; for example, a blood alcohol concentration (or level) of 0.10% = 100 mg of alcohol per 100 ml of blood.

Bout, drinking bout, binge - a spell of continued intake of alcoholic beverages, with the invariable implication that this represents a spell of continuous drunkenness, lasting usually more than a day.

Confrontation - in business and industrial relations, the process whereby an employee is presented with the facts of inadequate or inefficient work performance and is urged to take steps to remove the cause of performance decline. The usual method is a face-to-face interview with a supervisor or company official. Confrontation sometimes occurs when the presumed cause of the faulty performance is excessive or inappropriate drinking. In this case, help in obtaining treatment is usually offered while the threat of discipline is held out as a penalty. On the railroads, confrontation may take place over the violation of an alcohol-related rule like drinking or possessing alcoholic beverages on company premises while on duty or subject to duty even when there is no question of adversely affected job performance. Clinical confrontation- the process through which a trained specialist leads a person to acknowledge the specific nature of the problem disrupting an important dimension of his daily life, for example, excessive drinking causing problems at work.

Consortium - a group of companies organized to provide counseling services to their employees by means of a central service. In this arrangement a consortium is usually organized in conjunction with an "outside agency." These companies often have common program personnel, have comparable strategies, use the same insurance coverages, and bargain with the same union. Geographic location often permits use of the same treatment facilities. Participating companies frequently engage in common supervisory training.

Continuum of care - a comprehensive complement of services that provides assistance from the time a problem is detected through sustained rehabilitation. In alcoholism services, usually includes outreach, diagnosis, and referral; emergency, inpatient, outpatient, intermediate services and aftercare.

Contract employee - employee covered by a labor-management agreement. On railroads, sometimes called agreement employees. Non-contract employees are known as exempt employees.

Counselor - one who prepares individuals for treatment or who treats behavioral disorders through nonphysical modalities. In alcoholism, especially used to describe a paraprofessional or one who derives his skills from basically nontherapeutic professions.

Cover-up - actions by a problem-drinking employee, or by others to disguise or hide the problem or distract attention from it. In occupational settings, generally reflects labor and management reluctance to confront an employee with a drinking problem, often manifested by insulating him from the consequences.

Critical incident - a crucial act in the work flow of a job situation. Used in performance appraisals to document the quality and quantity of an employee's performance and provide the basis for a performance or confrontation interview. The term has negative connotations for unions.

Deviant drinking - consumption of alcoholic beverages in a manner that constitutes a departure from accepted social norms.

Diagnosis - the determination of the nature of an individual's condition or illness by inferences based on formal examination to ascertain whether and what kind of treatment is required.

Disability - in occupational settings, any condition, disease, illness or pathology which, in the judgment of formally empowered persons, interferes with an employee's capacity to meet minimally acceptable performance standards of specified work. On the railroads, judgments about disability result from formal procedures that lead to eligibility for compensatory benefits. Alcoholic disability - any disorder due to the use of alcohol which interferes with the capacity to function normally on the job.

Dismissal - the release of an individual from active duty without specification of a time for reinstatement. In practice on the railroad, dismissal seldom, if ever, means permanent loss of job, since dismissed employees are generally permitted to return.

Drinking behavior - the way or manner of drinking: frequency, volume and pattern. Also, any phenomena of personal conduct associated with the consumption of alcoholic beverages, such as becoming talkative, friendly, amorous, morose, combative, sleepy, or getting drunk.

Drug abuse - any use of a drug contrary to law or contrary to the customs approved by the community. Or, drug addiction. On the railroads, use of unprescribed drugs is in violation of company rules.

Employee assistance program - a program designed to assist employees experiencing personal problems including, but not restricted to, alcohol problems. Generally, a broader approach to detecting and reducing personal problems that adversely affect work performance than the approach taken by programs restricting services to persons who have alcohol problems.

Excessive drinking - drinking which results in intoxication or illness or disturbance in a major aspect of daily life. The term is inherently subjective and when used in formal descriptions, the amounts, time, effects, or other determining factors are arbitrary and require specification.

Front-line (first line) supervisors - personnel in direct contact with employees and responsible for the operation of specific shops.

Hangover - slang, used to describe a post-intoxication state showing the immediate aftereffects of drinking alcoholic beverages in excess. Physiological signs include fatigue, heavy smoking, headache, thirst, vertigo, gastric disorder, nausea, vomiting, insomnia, fine tremors of the hands, liver function impairment, and raised or lowered blood pressure. Fatigue is sometimes obscured by congenial company and pleasant conditions and may contribute as much as intoxication to these unpleasant aftereffects. Psychological symptoms, which are closely allied, may include acute anxiety, guilt or remorse, depression, and extreme sensitivity.

Hidden alcoholic - an alcoholic 1) who drinks secretly and manages to conceal his condition; or 2) whose drinking behavior is not recognized or acknowledged as alcoholism either by his family and friends or by recording agencies; or 3) whose alcoholism is masked by mislabeling.

Grievance procedure - a step-by-step process, spelled out in a labor-management contract, to resolve labor-management disputes. On the railroads, processes under the Railway Labor Act and collective bargaining agreements by which certain complaints by union members against management are investigated and settled.

Illegal drug use - any use of a drug which is forbidden by law.

Incidence - the number of new cases of a particular condition that occur in a defined population during a specified period of time. In occupational alcohol-related programs, the number of new cases of problem drinking in a given work force during a stated time period.

Intoxication - a state of altered perception and judgement, with uncoordinated motor activity, caused by the ingestion, inhalation or absorption of a chemical substance. Alcohol intoxication - drunkeness; a condition marked by varying degrees of diminished physical and mental control caused by the action of alcohol in slowing or depressing the activity of the brain's control center.

Investigation - the first step of the formal process by which disciplinary matters are handled. A quasi-judicial procedure in which the employee entitled to counsel is represented by his local or general chairman, or rarely by a lawyer. During the investigation process, facts are presented and, when appropriate, witnesses called. Violations of railroad Rules G, H, and P are typically handled through this process.

Joint labor-management committee - a formally constituted body of management and labor representatives. In some occupational programs, representatives from labor and management support and participate in the employee assistance program by jointly reviewing its plans and activities.

Labor-management cooperation - in occupational programs, an informal, often unwritten agreement between labor and management to support an approach toward employees manifesting certain kinds of problems. Concerning alcohol problems, the joint adoption of strategies for intervening in cases of problem-drinking behavior (policy), and the formal implementation of the policy through activities such as policy diffusion, confrontation, counseling, rehabilitation, referrals, etc. (program).

Legal drug use - any use of a drug which is not forbidden by law.

Line staff relation - a non-supervisory working relationship between two employees at different levels of a company's hierarchical structure. This relationship does not exist in the railroad industry.

Loss of control over drinking - loss of ability consistently to choose 1) to refrain from drinking or 2) to stop if drinking is begun.

Middle management - personnel directly responsible for immediate operations (e.g., superintendents, general foremen) and their subordinates not covered by the Railway Labor Act (trainmasters, road masters, shop foremen, etc.)

Moderate drinker - one whose drinking does not adversely affect his health, family or social life, or the welfare of the community, and never or rarely results in intoxication.

Motivational interviewer - in occupational programs, a counselor who uses his understanding of the psychodynamics of alcoholism, of confrontation techniques, and of community resources to persuade poor work performers to consider the degree to which their problems may be alcohol related and, if necessary, to make use of available rehabilitative services.

Multiple-drug abuser - one who uses a variety of drugs contrary to community-approved custom. Or, concurrent addiction to more than one drug.

Nonsupervisory personnel - personnel covered by the Railway Labor Act who do not have anyone reporting directly to them. In ongoing work processes they make no decisions about benefits or services to fellow employees, or wage or salary decisions (except indirectly as members of a union), and perform no formal performance evaluations.

Non-ops - an abbreviation frequently used on railroads to refer to nonoperating personnel or workers like clerks, craftsmen, electricians, etc., who are responsible for the maintenance of engines, trains and equipment. For the sake of readability, the term non-ops is used throughout this report.

Occupational alcoholism program - a program designed to provide services to employees with alcohol-related problems.

Operating personnel - on the railroads, employees who move trains, cars, and equipment.

Ops - an abbreviation often used in the railroad industry to refer to operating personnel or workers such as engineers and conductors who are responsible for the operation of trains and engines. For the sake of readability, the term ops is used throught this report.

Pathological reaction to alcohol, Pathological intoxication - an extraordinarily severe response to alcohol, especially to small amounts. It is marked by apparently senseless violent behavior, usually followed by exhaustion, sleep, and amnesia for the episode. Intoxication is apparently not always involved, and for this reason pathological reaction to alcohol is the preferred term. The reaction is thought to be associated with exhaustion, great strain, or hypoglycemia, and to occur especially in people poorly defended against their own violent impulses.

Penetration rate - the relationship between the determined or estimated potential caseload and the actual caseload for a given condition. In occupational alcohol-related programs, the number of employees who use the program's alcohol-related services as a proportion of the number estimated as needing these services.

Performance impairment - an observable defect in the quality or quantity of an individual's normal work or productivity in business or industrial activity.

Periodic alcoholism - alcoholism in which bouts of gross drinking alternate with long periods of abstinence or moderation.

Personal injury - in occupational settings, damage or harm done to the body or psyche of an individual in the course of carrying out one's work. On the railroads, the Federal Railroad Administration defines categories of personal injuries in its Frequency Severity Index (FSI). The FSI requires railroads to file uniform records on personal injuries based on the index.

Personal problems - difficulties people experience that impede or at least threaten the normal performance of non-work related responsibilities and roles. In work places, personal problems are the interpersonal attractions or dislikes that interfere with work performance, and the private feelings of alienation, fear, and anger generated in some employees by work processes and formal work structures.

Plateau drinker - a type of presumed alcoholic who drinks regularly to the point of reaching a level of mild or moderate intoxication, which he maintains by continuing to drink small amounts at intervals, without becoming grossly intoxicated.

Policy - the formal statement of a company's official approach to recurrent issues, problems or situations. In occupational alcohol-related programs, the program statement - a company's position on strategies and procedures it will use to deal with employees who have job problems linked to drinking.

Prevalence - the estimated cases of a particular condition in a defined population at a stated time. In occupational alcohol-related programs, all the estimated cases of active problem drinking in the work force population at a stated time.

Prevention - a planned process or activity which inhibits or forestalls the development of an undesired condition or event. In alcohol-related discussions, more precise meanings must be derived from a further specification of the undesired condition or event, e.g., excessive drinking incidents or patterns, problem drinking incidents or patterns, alcoholism, etc. In occupational alcohol programs prevention is usually thought to mean the avoidance of alcohol problems adversely affecting job performance.

Problem drinker - a repetitive excessive drinker whose use of alcoholic beverages is regularly and directly linked to private or public harm and is seen as the source of difficulties in one or more important aspects of his life. The category includes the alcoholic. Sometimes used, especially in business and industrial programs, as a euphemism for alcoholic. Or, one who scores high on a scale of items intended to elicit indications of potentially harmful drinking patterns or incipient alcoholism. In the railroad industry, a non-problem drinker is sometimes said to have an alcohol-related problem in the sense that he can be disciplined or dismissed for using or simply possessing alcoholic beverages on company premises while on duty or subject to duty. However, the term "problem drinker" in its common usage would not apply in such cases.

Problem drug user - one who uses any drug in a way or in a degree that is seen to cause harm to himself or others. The category includes the drug addict, and the term may be used as a euphemism for drug addict, especially in business or industrial programs to avoid the implication of a diagnosis. Or, one who scores high on a scale of items intended to elicit indications of harmful drug use or addiction.

Program coordinator - one who manages the day-to-day activities of a program. A member of a work organization--either from management or union--who acts to facilitate and implement the use of a job-based alcoholism program. A program coordinator represents the program to potential and present users, explains its channels of communication carries out the policy provisions assigned to him, and sometimes performs the referral function.

Program success - the accomplishment of a program's specified objectives. Accomplishment must be reasonably attributable to program activities, and program objectives must be specified in advance of any attempt to measure results. In some occupational settings, the return by problem drinking employees to acceptable levels of work performance within the norms of the workplace as a result of program participation. In other occupational settings, abstention resulting from program participation.

Recovering alcoholic - a term used in A.A. circles to characterize the abstinence of an alcoholic as a tenuous condition. The term derives from the assumption that the disablement from controlled drinking associated with alcoholism is never eliminated completely but is always present to some degree among non-drinking alcoholics.

Recovery - the restoration and maintenance of a desired or unimpaired condition over a relatively long period of time. For an alcoholic, cessation or successful control of the urge to drink for a substantial period of time, usually manifested by abstinence during several years. Occasionally, recovery has been reported in the form of successful moderate drinking over a long number of years.

Referral - the giving of advice as to where treatment or help may be obtained. Or, arranging for the reception of a person in need of treatment or help by an institution or agency to which he has been taken or sent. In occupational programs, the process through which an employee whose work is impaired is informed about and introduced to sources of required assistance.

Rehabilitation - the restorative process through which a handicapped, disabled or sick person is enabled by treatment and help to resume normal or adequate functioning in a specified affected area of life. In alcoholism, the planned process that results in the cessation of drinking (or, rarely, in reported controlled drinking) and the restored ability to obtain gainful employment, to maintain stabilized interpersonal relations and to carry out responsibilities in accordance with reasonable community expectations. Or, more narrowly, the eradication of a specific alcohol-related disability; for example, when a person is restored to normal or less-impaired work performance that meets minimally acceptable standards within a particular work grouping.

Reinstatement - the act of reinstating an employee formerly dismissed or suspended from service to active duty.

Relapse - the reversion to an undesirable or impaired condition after its improvement. In some occupational-related programs, resumption of drinking by an employee in remission through abstinence even when drinking does not impair work performance. In other occupational alcohol-related programs, a return to impaired work performance caused by the resumption of drinking by an employee who had been in remission through abstinence, or by the resumption of excessive drinking by an employee who had achieved moderated or controlled drinking.

Reprimand - a severe formal reproof for violating a company's policy or rules. On the railroad, a reprimand originates from a decision made during formal arbitration and is usually accompanied by a warning of the penalty that will be incurred in the event of another infraction. Reprimands are usually entered into an employee's record.

Resource person - a volunteer who assists the staff operating an employee assistance program. Usually a recovered alcoholic, the individual may be involved at any point in the treatment process.

Rule G - railroad regulation which prohibits 1) use of intoxicants or narcotics by employees on duty, subject to duty or on company property; 2) possession of intoxicants or narcotics while on duty or on company property; 3) being intoxicated while on duty or on company property.

Rule H - railroad regulations which prohibit specific undesirable behaviors that are considered unethical or not in keeping with company standards (e.g., desertion from duty, insubordination, dishonesty, making false reports).

Rule P - railroad regulation rendering employees open to possible disciplinary action for not reporting to work or not protecting a worker's assignment.

Sobriety - the state or condition of not being intoxicated, either through abstinence or temperate use of alcoholic beverages. Among members of Alcoholics Anonymous, sobriety and abstinence are often used synonymously.

Social drinker - one who takes alcoholic beverages in compliance with social custom; or one who drinks for socially acceptable reasons and in socially acceptable ways.

Shop steward - the lowest ranking official of a union. The term is not used on railroads. There, these union officials are called local chairmen, or sometimes, committeemen. Local chairmen interact on a day-to-day level with first-line supervisors and serve as the immediate representative of employees in the bargaining unit.

Supervisory training - structured learning experiences to improve the monitoring and directive skills of managers. In occupational alcohol programs, supervisory training usually involves teaching managers their responsibilities in setting performance standards, in detecting performance deterioration, and in leading employees whose work is deteriorating to make use of the company's employee assistance program or other resources to identify and resolve the cause of poor job performance.

Suspension - release of an individual from active duty for a specified period of time depending on the nature of the infraction.

Third party payment - the payment of the costs of treatment as by an insurance company, Medicaid, etc. In alcohol-related cases, payment for alcoholism treatment usually by private insurance carriers or their counterparts (hospital associations, etc.)

Top management - executive officers responsible for setting corporate policy and handling financial resources.

Treatment - the application of formal physical, psychological or social techniques to improve the condition of a person whose problem has been diagnosed.

Under the influence of alcohol, of liquor - being affected by alcohol, that is, showing some signs of euphoria or impairment of function after drinking. If used without qualification, implying less than intoxicated. Or, in state law, having a specified blood alcohol concentration,especially in connection with driving a motor vehicle.

Weekend drinker - one who drinks alcoholic beverages only on weekends, abstaining during the work week. Or, one who regularly, or usually goes on drinking bouts at weekends.

Witchhunting - the deliberate searching of an employee's private life for evidence of alcohol or drug abuse that may be used as grounds for dismissal or to process him through an alcoholism policy. The term usually refers to an employer's efforts to ferret out alcoholics. Such efforts focus directly on the drinking of employees and is sometimes used as a tool to get rid of unwanted employees.

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HIGHLIGHTS

The following results are highlights of a study that examined the drinking practices of 234,000 railroad workers on seven railroads during 1978. These railroad workers included 47,000 exempt personnel, 72,000 operating personnel and 115,000 non-operating personnel. They represent about half of the workers on the nation's Class I railroads. The figures given below are estimates based upon sample survey results.

A. PROBLEM DRINKING AND INTOXICATION

1. Number of Problem Drinkers.

An estimated 44,000 of the 234,000 workers on the study railroads are problem drinkers as that term is defined in national studies. About one out of every four workers who drinks is a problem drinker (p.108).

2. Prevalence Rate of Problem Drinking.

The prevalence rate of problem drinking among railroad workers is 19 percent or about the same as the rate of problem drinking among men throughout the country (p.108).

3. Employee Intoxication.

Intoxication rates among railroad workers exceed those of men in the population at large (p.35).

B. JOB-RELATED DRINKING PRACTICES

1. Adherence to Company Rules.

Eighty-eight percent or 205,000 railroad workers did not drink while on duty on even one occasion in 1978 (p.38).

2. Drinking Rule Violations.

There were 175,000 drinking rule violations in 1978, about one violation for every 350 man days worked. Twelve percent or 28,000 workers drank on an average of three days while on duty. Thirteen percent or 30,000 workers drank on an average of three days when subject to call (p. 40).

3. Work-Related Intoxication.

Five percent or 11,000 workers were "very drunk" at least once while reporting for duty or on duty. Fifteen percent or 35,000 workers were a "little drunk" at least once when reporting for duty or on duty (p.40).

C. IMPACT AND COSTS OF EMPLOYEE DRINKING

1. Effects on Safety.

There is evidence that employee drinking is an important contributing factor to railway accidents, but the connection between drinking and safety is not being adequately investigated (pp. 76-84).

2. Other Effects.

Employee drinking also contributed to increased rates of absenteeism, lost productivity, illnesses, labor-management disputes, and reduced employee morale (pp. 66-92).

3. Total Costs.

The problem drinking and job-related drinking of railroad workers cost railroad companies about $100 M in 1978 (p. 91).

4. Highest Cost Category.

The single greatest known cost incurred by railroad companies was the reduced productivity of workers who are problem drinkers (p. 75).

5. Cost of Dismissal vs. Rehabilitation.

It costs more to dismiss a problem drinker than it does to rehabilitate him. (pp. 90 vs. 184).

D. COMPANY-BASED CAPACITY TO HANDLE PROBLEMS OF EMPLOYEE DRINKING

1. Company Rules

a. Deterrent Effect of Company Rules.

Company drinking rules kept most workers from drinking on duty at least sometimes last year (p. 38).

b. Enforcement of Company Rules.

Of the 84,000 on-duty drinking rule violations that occurred last year, 900 were reported and 384 resulted in dismissal. Chances were one in 100 that an on-duty violations would be reported and one in 250 that it would result in a dismissal (pp. 48-49).

c. Visibility and Cover-Up.

Thirty-five percent or 80,000 workers including 15,000 exempt workers observed a drinking rule violation last year. Twelve percent or 28,000 workers including 3,000 exempt workers hid or covered for a drunken co-worker (pp. 48-50).

d. Basic Reason for Failure to Report.

The most important reason given by workers for their failure to report is their fear that an employee might be automatically dismissed even after a first offense and even if he is a problem drinker (pp.

e. Alternatives to Dismissal.

One railroad permits rule violators to maintain their employment status with the company if they undergo counseling and treatment for their drinking problem. The job-related drinking situation on this railroad is among the best of the seven studied railroads (pp. 152-153).

2. Employee Assistance Programs.

a. Rehabilitating Program Clients.

In 1978, employee assistance programs (EAPs) successfully rehabilitated about 70 percent of the clients whom they served. In all, 1,157 workers or about 3 percent of all problem drinkers in the work force were rehabilitated (p. 182-183).

b. Reaching Employees in Need of Services.

Last year, these programs served about 4 percent or 1559 of those whom directors defined as problem drinkers--500 more workers than were handled through discipline in the same period (pp. 183 vs. p. 90).

3. Company-based Capacity to Reach Employees in Need of Services.

Companies have the referral resources (for example, supervisors, labor representatives, co-workers and medical consultants), a legitimate right to intervene (that is, deterioration in work or violation of rules), and the leverage to get employees to seek assistance (that is, threat of job dismissal) (p. 48). These elements can enable companies to more successfully reach workers in need of services (pp. 164-167).

4. EAP Service Delivery Capacity.

Employee assistance programs do not have adequate resources to serve an appreciable increase in employee referrals (p. 156).

E. CONCLUSIONS ON COMPANY MANAGEMENT OF DRINKING PROBLEMS

1. Current Effectiveness.

Company disciplinary and program efforts do not adequately control the job related effects of problem drinking and on-the-job drinking (pp.165-167).

2. Potential Effectiveness.

If properly used, coordinated and supported, mechanisms already in place appear to give the best promise of bringing on-the-job drinking and problem drinking under better control (pp. 48-49; 183).

F. . RECOMMENDATIONS

1. Basic Approach.

At least for the time being, job-related drinking problems should be addressed by voluntary company efforts and the federal government should confine itself to supporting these efforts (pp. 195-196).

2. Joint Action on Safety.

The railway industry and rail labor should immediately join with the FRA to develop more effective ways of measuring, investigating, documenting and controlling the impact of employee drinking on railroad safety (pp. 84).

3. Change in Company Policy.

Companies should institute a policy that allows problem drinkers including rule violators on a first offense to maintain a job relationship with the company as long as they enter and progress in treatment (p.45 and 165).

4. Reaching More Employees in Need of Services.

a. Prior to Rule Violations.

Companies should develop their capacity for getting referrals from supervisors, local chairmen, employees and medical consultants before drinking becomes a matter of discipline (pp. 164-167).

b. After Rule Violations.

Companies should modify the application of drinking rules to increase reporting rates and program referrals (pp. 45 and 152).

5. Improving Program Services.

Programs should make specific changes in the way they are now delivering services (pp. 137-196).

6. Reducing the Number Requiring Attention.

Companies should institute preventive practices aimed at reducing problem drinking and job-related drinking (pp. 172-173).

EXECUTIVE SUMMARY

BACKGROUND AND DESIGN OF THIS STUDY

Since 1974, the Federal Railroad Administration (FRA) has been encouraging railroad companies and railroad labor organizations to continue with their voluntary efforts to deal with problem drinking among their work forces. In 1975 and 1976, FRA sponsored two conferences at which railroad and federal government representatives and alcohol researchers exchanged ideas and potential solutions to the problems caused by the consumption of alcohol by railroad workers affecting their performance. All conferees expressed the opinion that the treatment of problem drinking through employee assistance programs (EAPs) promised the greatest potential benefits to the workers, their employers, and the public.

Reaffirming its commitment to deal with the alcohol problem, FRA announced at the 1976 conference that it would sponsor a major research effort to aid in the development and propagation of EAPs. The research effort was to be divided into two phases--a fact-finding study to determine the policies and practices of existing EAPs in the railroad industry, followed by a large-scale research undertaking with three major purposes:

To determine the extent and nature of drinking on the job and problem drinking in the railroad industry;

To determine the costs of problem drinking to the railroads;

To investigate, in depth, the practices and policies of railroads and EAPs in dealing with problem drinkers, and to make recommendations for revisions in those practices and policies. The recommended new policies were to be applicable not only to the studied railroads, but also to other railroads wishing to establish programs.

University Research Corporation (URC) designed and conducted the second phase of this study with the active participation and cooperation of railroad labor and management. Seven Class I railroads agreed to participate in the study:

Burlington Northern

ConRail

Duluth, Missabe, and Iron Range

Illinois Central Gulf

Long Island Railroad

Seaboard Coast Line

Southern Pacific.

URC agreed to present study results so that information which companies might not care to divulge (for example, problem drinking rates) would not be linked to individual railroads.

Although they are not a random sample of all railroads, these seven companies cover the contiguous 48 states and together employ over half of the country's 450,000 employees of Class I railroads. Since these railroads are not representative of all the nation's railroads, applications of the data from this study to other railroads is not scientifically warranted. On the other hand, information on such large and diverse railroad work forces provides the best available inferential data for other railroads on the probable parameters of their own work-related drinking problems.

We collected data through personal interviews with approximately 30 key individuals on each railroad (a total of over 200) and through surveys of probability samples of EAP clients and work forces of the seven companies. On each railroad we interviewed representatives of the following classes of personnel to obtain their unique perspectives on problems related to employee drinking and potential solutions:

Vice presidents and superintendents (senior management)

General chairmen (senior labor)

Supervisors

Local chairmen

Safety officers

Labor relations officers

Medical officers

EAP directors

EAP counselors.

In addition to our interviews of selected railroad personnel, up to 1,300 employees on each of the seven railroads received questionnaires through the mail asking about their work history, drinking practices, problems resulting from their drinking, and their knowledge of the companies' rules and practices regarding drinking by employees. Response rates were quite satisfactory, ranging from 60 percent to 82 percent, with a median of 69 percent.

We also conducted a survey of EAP clients. Questionnaires were also distributed through program directors to random samples of about 100 program clients on each of the seven railroads. Response rates for this survey averaged only about 30 percent, and we thus do not rely heavily on these data for our analyses.

We also reviewed the records of selected organizations including FRA and the National Transportation Safety Board and the literature on occupational programming for information bearing on the study. The following findings, conclusions, and recommendations are based on our analyses of the data obtained from all of these sources.

MAJOR FINDINGS AND CONCLUSIONS

A. Findings on Problem Drinking and Intoxication

1. Nineteen percent or an estimated 44,000 of the 234,000 workers studied are problem drinkers as that term is defined in national studies (p. 108).

2. Twenty-four percent or almost one out of every four railroad workers who drinks is a problem drinker (pp. 28 and 108).

3. Twenty-three percent or about 16,000 of the 72,000 operating personnel studied are problem drinkers.

4. Twenty percent or about 23,000 of the 114,000 nonoperating personnel studied are problem drinkers (p.108).

5. Eleven percent or 5,000 of the 47,000 exempt workers are problem drinkers.

6. The national problem drinker rate for male and female adults is about 10 percent. The rate for men across the country is 15-20 percent (p. 105).

7. On two railroads, 24 percent or almost one out of every four workers is a problem drinker (p. 108).

8. On several roads, problem drinking rates of oeprating personnel run 30 percent or higher (p.108).

9. Twelve percent of those who call themselve supervisors are problem drinkers (p. 108).

10. Workers on one railroad have problem drinking rates well below those found among males in the national population. On this road, one out of ten workers is a problem drinker (p.108).

11. Last year, two-thirds or eight out of every ten railroad workers who drink got intoxicated at least once (pp. 35-36).

12. National studies show that 35 percent of all American men become intoxicated at least once every two years (p. 35).

13. Last year, one out of every five railroad workers became intoxicated at least once a month; one out of every seven, at least once every two weeks (p.36).

14. An estimated 25,000 workers on the seven railroads got intoxicated at least once a week. If the same rate prevailed throughout the entire industry, at least 50,000 workers would be intoxicated at least once during any week of the year (p. 35-36).

15. On individual roads and within individual job categories, higher percentages of workers got intoxicated at least once for all the time spans mentioned above (p.36).

16. Railroad workers are twice as likely to drink on binges as men are nationally (p. 35).

Conclusions

THE PREVALENCE RATE OF PROBLEM DRINKING AMONG RAILROAD WORKERS IS ABOUT THE SAME AS THE RATE OF PROBLEM DRINKING AMONG ALL AMERICAN MEN.

THE HIGHESTS PERCENTAGE OF PROBLEM DRINKERS IS TO BE FOUND AMONG OPERATING PERSONNEL ACROSS ALL THE RAILROADS.

THE LARGEST NUMBER OF PROBLEM DRINKERS ON EACH ROAD IS TO BE FOUND AMONG NONOPERATING PERSONNEL.

PREVALENCE RATES OF PROBLEM DRINKING VARY AMONG ROADS AND OCCUPATIONAL GROUPINGS AND RANGE FROM WELL BELOW TO WELL ABOVE NATIONAL RATES FOR MEN.

INTOXICATION AND BINGE DRINKING RATES AMONG RAILROAD WORKERS EXCEED THOSE FOR ALL AMERICAN MEN.

B. Findings on Job-Related Drinking Practices

1. Eighty-eight percent or 205,000 railroad workers did not drink while on duty even once last year (p. 39).

2. Twelve percent or 28,000 of the studied workers drank alcoholic beverages at least once while on duty in 1978. These workers averaged about three such incidents for the period. An estimated total of 84,000 on-duty drinking rule violations occurred last year. There was one such violation for every 725 man days worked or an average of 230 on-duty drinking rule violations a day on the seven roads (p. 38).

3. Ninety percent of workers say company drinking rules keep them from drinking on duty at least sometimes. Without rules, on-the-job drinking would be more frequent (p. 42).

4. Higher percentages of workers on individual roads and within particular job classes on individual roads drank on duty at least once last year: for example, 22 percent of workers on one railroad and 28 percent of workers in one job category (p. 38).

5. Problem drinkers (19 percent of the work force as that term is defined in national studies) account for about one third of the regular (that is, at least once a month) on-the-job drinking (p.120).

6. The 81 percent of the work force who are not problem drinkers account for about two-thirds of regular on-the-job drinking (p. 120).

7. Five percent, or a projected 12,000 of the 234,000 workers, reported to work "very drunk" or got "very drunk" on duty at least once last year. One worker appeared on the job seriously intoxicated for every 5,000 man days worked. On any given day, there is an average of 33 such workers on duty on all seven roads combined (p. 38).

8. Fifteen percent, or a projected 35,000 workers, appeared on the job "a little drunk" at least one time during that period. One worker appeared on the job slightly intoxicated for every 1,800 man days worked. On any given day, there is an average 97 such workers on duty on all seven roads combined (p. 38).

9. Less than 1.5 percent of adult males in the national population indicated they get "high" or "tight" on the job at least once a year (p. 35).

10. Twenty percent, or about 46,000 workers, came to work hungover at least once last year. One worker came to work hungover for every 1,300 man days worked. On any given day, there is an average of 125 hungover workers on duty on all seven railroads combined (p.38).

11. At least once in the past year, 7,000 of these workers came to work too hungover to do their jobs (p. 72).

12. Thirteen percent, or an estimated 30,000 workers, drank when on call on an average of three days last year for a total of 90,000 rule violations (p. 38).

13. On-duty violations (84,000) and on-call violations added up to a total of 174,000 drinking rule violations in 1978. There was one violation for every 350 man days worked. On any given day, an average of 475 violations occurred on all seven roads combined (p. 38).

14. About 12 percent of workers within each of the three occupational categories violated on-duty drinking rules last year (p. 38).

15. Since there are almost as many nonoperating personnel as there are operating and exempt personnel combined, the highest absolute number of drinking rule violations are to be found among nonoperating employees (p.38).

16. All classes of personnel on one railroad have much lower rates of on-the-job drinking and intoxication than workers on all the other railroads (pp. 36 and 38).

17. Supervisors and labor representatives said they estimated that 3 percent of workers drink on duty--a serious underestimate (p. 39).

Conclusions

MOST RAILROAD WORKERS DID NOT VIOLATE COMPANY DRINKING RULES LAST YEAR. ABOUT ONE IN TEN WORKERS DID.

ON-THE-JOB DRINKING WAS FOUR TIMES MORE PREVALENT THAN WAS THOUGHT BY INTERVIEWED SUPERVISORS AND LABOR REPRESENTATIVES ALREADY CONCERNED ABOUT EMPLOYEE DRINKING.

THERE WERE SIGNIFICANT DIFFERENCES IN THE ON-THE-JOB DRINKING RATES OF WORKERS ON INDIVIDUAL ROADS AND AMONG JOB CATEGORIES.

COMPANY DRINKING RULES DETERRED MOST WORKERS FROM DRINKING AT LEAST SOMETIMES.

THE PREVALENCE RATE OF ON-THE-JOB INTOXICATION AMONG RAILROAD WORKERS EXCEEDED THAT OF ALL AMERICAN MALES.

THOUGH HIGHER PERCENTAGES OF PROBLEM DRINKERS DRINK REGULARLY ON DUTY, NONPROBLEM DRINKERS, BECAUSE OF THEIR MUCH GREATER NUMBERS, ACCOUNTED FOR TWO-THIRDS OF REGULAR ON-DUTY DRINKING.

WORKERS CAME TO WORK HUNGOVER AND DRANK WHEN SUBJECT TO CALL MORE OFTEN THAN THEY DRANK ON DUTY.

C. Findings on the Impact and Costs of Drinking

1. Impact of Drinking on Companies

a. Absenteeism

Problem drinkers were absent for reasons other than vacation about twice as often as nonproblem drinkers (15 days versus 8 days). The excessive absenteeism of problem drinkers amounts to an estimated 756 man years per year for the seven roads (p. 68).

An estimated 18,000 workers on the seven roads missed the equivalent of 135 man years last year because they were too drunk or hung over to come to work. This absenteeism overlaps with the previous figure but also includes the alcohol-related absenteeism of nonproblem drinkers (p. 66).

In the nonoperating class, absenteeism means lost productivity because positions are left unfilled or are filled through transfer. In the operating class, absenteeism means the inconvenience and time required to fill vacant positions from the extraboard, occasional delays in train departures, and increased costs of paying time and a half when vacancies cannot be filled from the extraboard. Problem-drinking exempt workers are not excessively absent (p. 69).

b. Lost Productivity

Problem drinkers are estimated by supervisors to be 20 percent less productive than other workers (p. 74).

Three percent, or an estimated 7,000 workers, cane to work a total of 13,000 times last year too drunk or hung over to do their jobs at all (p. 72).

The presence of intoxicated workers on the job angers other workers, forces them to work harder than usual in many instances, and often causes them to be afraid about the possibility of injury or property damage from an accident (pp. 74-75).

c. On-the-Job Injuries

Safety officers reported about 30,000 on-the-job injuries last year. An estimated 1,200 of the 234,000 workers were injured because of drinking last year. One in 30 job-related injuries in 1978, therefore, was attributable to alcohol (pp. 76-78).

Most safety and medical officers did not have sufficient information upon which to make estimates on alcohol-related injuries. However, one medical officer estimated that 15 percent of injuries on his road are alcohol-related. One safety officer estimated 10 percent. Another safety officer indicated that four of six deaths occurring on the property in the past five years or so were alcohol-related (pp.76-77).

Supervisors concur that workers who drink on the job run a higher risk of injury than others (p. 76).

Two-thirds of workers fear for their safety when working with co-workers who are drinking (pp. 76-77).

d. Property Damage

Last year, 7,000 of 234,000 reported seeing an alcohol-related train accident. 5,000 workers saw track damage involving drinking. 7,000 workers saw construction equipment damage because of drinking. An estimated 13,000 employees witnessed drinking-related damage to trucks, busses, or autos. 8,000 employees reported observing alcohol-related damage to office or factory equipment (p.81).

Company data on the relationship between damage and alcohol-related cases is sparse. Three safety officers offered estimates on alcohol-related train accidents. Their guesses were that 1 percent, 3 percent, and 25 percent of accidents are alcohol-related (p. 82).

Supervisors agreed that the risk of damage is higher when workers drink (p. 83).

e. Alcohol-Related Illnesses and Disabilities

Four percent, or about 10,000 railroad workers, report that drinking has hurt their health (p. 101-102).

f. Alcohol-Related Grievances

Alcohol-related grievance procedures usually take up 1.5 days of supervisors' time for local grievances, a half day for the local hearing officer, a small portion of the time of the labor realtions staff, time of supervisors at the labor relations office, and undetermined time of witnesses, stenographers, and clerical staff (p. 89).

It costs railroad companies more to dismiss a problem drinking rule violator than it does to rehabilitate him.

2. Company-Incurred Costs of Employee Drinking

The seven study railroads incurred almost $110 million in costs due to employee drinking last year. These costs were distributed as follows: (p. 91)

a.	Absenteeism		
	Sick pay (for the one of seven roads that provides it)	$ 100,000	
	Lost productivity of nonoperators on the remaining six roads because of absenteeism (p. 71)	$3,000,000	
			$ 3,100,000
b.	Lost Productivity		
	Losses when nonproblem drinking workers are present but unable to work because of drinking (p. 72)	$ 600,000	
	Losses because of reduced productivity of problem drinkers (p. 75)	$ 100,000,000	
			100,600,000
c.	Injuries		
	Six railroads, adjusted for seven roads (p. 79)		583,000
d.	Property Damage (p. 83)		650,000
e.	Budgets of Employee Assistance Programs		1,000,000
f.	Portion of Insurance Premiums for Drinking-Related Illnesses		2,300,000
g.	Grievance Process		
	Six railroads, adjusted for seven roads (p. 90)		408,000
			$ 108,941,000

Conclusions

ON-THE-JOB DRINKING AND PROBLEM DRINKING BY RAILROAD WORKERS IMPAIRED ROUTINE OPERATIONS AND WORK, AND RESULTED IN INJURY AND DAMAGE, WHICH COST THE SEVEN ROADS A CONSERVATIVELY ESTIMATED $109 MILLION IN 1978.

THERE IS EVIDENCE THAT EMPLOYEE DRINKING IS AN IMPORTANT CONTRIBUTING FACTOR TO RAILWAY ACCIDENTS, BUT THE CONNECTION BETWEEN DRINKING AND SAFETY IS NOT BEING ADEQUATELY INVESTIGATED.

D. Findings on Current Company Approaches to the Problem

1. Handling Drinking Problems Through Discipline

a. Violations are often visible. In 1978, 35 percent or 80,000 workers surveyed personally observed the violation of company drinking rules. Thirty-one percent, or 15,000 exempt workers witnessed such a violation (p.49).

b. Workers know that supervisors observe rule violations. One out of five workers knows of a supervisor who observed a drinking rule violation in the last year (p. 50).

c. The chances of getting reported for drinking on duty are less than one in a hundred. Although figures are not available on the number of violations that resulted in formal disciplinary procedures, we estimate that about 900 workers were officially reported and investigated last year (p.53).

d. The chances of getting fired for violating company drinking rules is about one in 250. Records of labor relations offices indicate that 384 workers were dismissed last year for breaking company drinking rules (p.54).

e. The chances of getting sent to an employee assistance program after violating a drinking rule are about one in 350. About 15 percent of all referrals to EAPs last year--240 in all--resulted from Rule G violations (p.164).

f. Twelve percent, or an estimated 28,000 workers, covered up for a drunken fellow worker last year. This figure includes one out of five operating personnel, one out of ten nonoperating personnel, and one out of 20 exempt workers. (p. 50).

g. Only one in three exempt workers and one in six contract workers say that they would personally report a rule violation if they knew that the violator would be dismissed. Even if only the threat of dismissal is present, there is tremendous peer pressure not to report drinking rule violators (p.58-60).

h. Probably the single most influential factor in discouraging reporting of rule violations is fear that an employee might be dismissed even for a first offense (p.61 and 165).

i. The perceived or actual noncoverage of exempt workers is sometimes used to rationalize rule violations among contract workers (pp.58-61).

j. Drinking rules are inconsistently and sometimes arbitrarily enforced and result in a wide disparity of disciplinary actions, ranging from a reprimand to permanent dismissal (p. 62-63).

k. The possibility of automatic dismissal discourages reporting of rule violators. The great majority of workers reject this practice, however infrequently it may be carried out. Most workers believe that one's willingness to enter treatment and one's previous record should be taken into account in deciding discipline (pp. 58-63).

l. The practice of automatic dismissal is inconsistent with the underlying principle of most, if not all, occupational programs in other industries. In virtually all programs, workers who avail themselves of assistance and regain and maintain their job performance at satisfactory levels are not penalized (pp. 49-106).

m. One of the study roads has initiated this policy. Some supervisors on all roads give violators a choice between entering the program or dismissal, even though this practice is not in accord with official company policy (p.51 and 152).

n. Drinking rule violators with drinking problems are sometimes returned to work without being rehabilitated (p. 47).

o. Dismissed drinking rule violators with drinking problems who have been rehabilitated are sometimes kept out of work permanently or for as long as a year or more (p. 54).

2. Handling Drinking Problems Through the Programs

a. During the past year, employee assistance programs on the seven railroads reached about 4 percent, or 1,559 of the railroad workers who are problem drinkers-a creditable percentage given the enormous distances involved and the limited staff and resources, but not enough to make a sizable dent in the rate of problem drinking (p. 179).

b. Although programs were highly successful with clients whom they saw last year, they did not receive enough referrals of rules violators to appreciably reduce the effects of on-the-job drinking on the railroads (p.177 and 156).

c. Employee assistance programs rehabilitated 75 percent or 1,157 of the 1,559 problem drinkers they served last year (p. 184)

d. On the two railroads having the lowest ratios of estimated problem drinkers to counselors, programs reached 14 percent and 10 percent of problem drinkers last year (p. 156).

e. Because of limited resources, the current efforts of EAPs are of necessity focused on rehabilitating railroad workers with serious drinking problems. Little systematic effort is aimed at reducing the on-the-job drinking of non-problem drinkers, who account for 61 percent of regular on-duty drinking, or at reducing the incidence of new cases of problem drinking (p. 165-166; 172-173).

f. Programs do not now have a systematic way of assisting on-the-job drinkers who are not problem drinkers (p. 154).

Conclusion

CURRENT DISCIPLINARY AND PROGRAM EFFORTS ON THE SEVEN STUDY RAILROADS DO NOT ADEQUATELY CONTROL THE JOB-RELATED IMPACT AND COMPANY-INCURRED COSTS OF ON-THE-JOB DRINKING AND PROBLEM DRINKING AMONG RAILROAD EMPLOYEES.

E. Findings on Company-Based Capacity to Handle Problems of Employee Drinking

1. Company policy on all seven railroads is that alcohol problems are health problems, that alcohol problems are treatable, and that it is in the best interest of the company to facilitate an ill employee's rehabilitation. Although this publicly stated policy provides the foundation for effective action, all of the implications of this position are not always fully implemented (p. 145-148).

2. Companies have a legitimate basis for intervening in an employee's problem drinking and on-the-job drinking (or any other personal problem) when the problem keeps him from doing his job satisfactorily. Supervisors, however, do not often implement this employer policy when drinking affects work (for example, through unexplained absenteeism or low productivity) (p. 164-165).

3. One out of three employees says he supervises other employees. If this is accurate, the railroads surveyed employ two supervisors for every problem drinker and one supervisor for every three workers. Nevertheless, last year there was only one supervisory referral for every 150 supervisors employed. This referral rate represents underutilization of a powerful referral mechanism. Even if the actual number of supervisors is only one-third the number estimated, the referral mechanism is still underutilized (p.164-165).

4. Company drinking rules provide the railroads with a second basis for intervening into employee drinking affecting the company. In many cases, getting caught for a drinking rule violation carries the ever-present threat of automatic dismissal with the probability of reinstatement only after a long, fixed, minimum period, regardless of what one does about the problem. This use of the rules in an essentially punitive manner instead of as a tool to motivate treatment keeps workers and supervisors from reporting rule violators and thereby reduces the rules' utility as a means of controlling undesirable drinking practices (p. 58-64; 164-165).

5. Labor unions represent another employment-related mechanism for identifying and motivating workers in need of program services to go to the program. This potential referral source is also underused because labor does not have an official, recognized role beyond committee membership on several roads and because some company programs intentionally exclude meaningful labor participation beyond moral support. Consequently, local chairmen often get involved only after a rule violation occurs (p. 166-167).

6. Referrals to the programs from company medical departments and from the thousands of physician consultants who examine employees are low, considering that the railroads categorize alcoholism as a health problem (p. 143).

7. Employee assistance programs report excellent success rates for clients coming into the programs. The potential of this remarkable company-based capability could be more fully realized through changes in company practices that would increase referrals and through selected improvements in program operations and resources that would enable programs to serve more clients even more effectively (pp. 137-195).

Conclusion

MECHANISMS CAPABLE OF BRINGING ON-THE-JOB DRINKING AND PROBLEM DRINKING UNDER BETTER CONTROL ARE ALREADY PRESENT ON THE SEVEN RAILROADS, BUT THEY ARE NOT NOW PROPERLY USED OR ADEQUATELY SUPPORTED.

F. Findings on Current Program Approaches

1. Contextual Variables

a. Efforts at establishing programs were hampered by inadequate data on the extent of the problem and on the effectiveness of programs in dealing with it (p.

b. Workers prefer program offices to be off company property. Some program offices are still on company property (p. 140).

c. Directors agree that the best organizational placement for EAPs is where adequate funding, visibility, and authority are ensured (p.141).

d. Labor's role is often undefined and sometimes not welcomed by railroad companies, yet, workers' trust is related to the degree of participation allowed labor (p. 141).

e. Management gives programs ample leeway to run day-to-day operations within company policy. Management does not receive adequate evaluation data upon which to make program and funding decisions (p. 142).

f. Railroad workers' suggestions on dealing with problem drinking co-workers are enlightened and nonpunitive (p. 143).

g. There is often insufficient cooperation and information-sharing among the programs and related company offices, such as the medical department, the safety department, and the labor relations office (p.143-144).

2. Input Variables

a. Company policies are sometimes unwritten. They differ among themselves in the elements they contain. None of the railroads have a policy statement that specifies an adequate relationship between the program and the disciplinary process (p.155-157).

b. Most programs do not currently possess enough staff or resources to handle the increase in demand that would occur if referrals were more numerous (p. 156).

c. Most programs do not make sufficient use of volunteers to free up time for what the staff is best suited to do (p. 171).

d. Most programs provide assessment referral services. Five are broadbrush, one is chemical dependency, and one is alcohol-only (p. 151).

e. None of the three foci (broadbrush, chemical dependency, alcohol-only) clearly provides better alcohol-related services than the others. Each has its strengths and weaknesses (p. 151).

f. Supervisors are not clear with regard to proper reasons for making referrals for inadequate performance and referrals for drinking rules violations (p. 152-153).

g. Criteria for accepting clients and recommending services are often inexplicit and vague (p. 155).

h. Program staff do not always possess the kind of experiential diversity required by their clientele (p. 158).

i. Program staff and directors do not have adequate performance evaluation systems that will help improve performance of geographically dispersed staff (p. 155).

j. Some of the programs are short of needed staff for present client caseload (p. 56-57).

k. Some programs have a markedly better client/cost ratio than others (p. 159).

l. Most health insurance coverage for alcohol problems pays only for in-patient care and restricts the use of out-patient services, even where those services are adequate and meet the client's needs (p. 160).

3. Functions/Services

a. More resources are needed for program informational efforts. Content usually focuses on the needs of those with problems. Little attention is given to prevention (p. 162-163).

b. Some counselors provide time-consuming services such as extended treatment, which can best be handled by community agencies (p.167-168).

c. Some program staff conduct assessments in a disturbingly subjective manner (p.167).

d. At most programs, referrals to treatment appear to be too heavily weighted toward in-patient care. In some cases, program staff have found in-patient care to be more effective than out-patient care, but in other cases reliance on in-patient care seems rooted in the restrictions of the company's insurance package (p.160).

e. Railroad workers, program staff, and program participants all think highly of Alcoholics Anonymous as an extremely helpful method for reinforcing treatment gains (p. 170).

f. Primary prevention efforts aimed at reducing the incidence of new cases of problem drinking are virtually nonexistent (p. 172-173).

g. Program evaluation depends too much on data provided by the programs. Across railroads, these data often relate to different objectives and time frames and are not easily compared (p. 174).

4. Results

a. Outputs

Most employees know that their company has an employee assistance program, but they do not know much about what it does (p. 175).

Last year all seven programs reached an average of 4 percent of the clients in need of services. (Range = 1.9 percent to 9.9 percent) (p. 183).

Per-client costs were lowest among programs with the highest penetration rate, for an assortment of reasons (p. 177).

Programs report that 65 percent to 95 percent of referred clients accept services (p. 178).

b. Effects

Programs report that 75 percent of those who accept treatment are successfully rehabilitated--at least in the sense that they have returned to adequate work levels (p. 179).

Program clients indicated they experienced reductions in the following job-related events:

Missing work because drunk or hung over

Going to work drunk or hung over

Trouble with boss (p. 180).

Program clients also indicated reductions in off-the-job alcohol-related problems:

Trouble with spouse

Auto accidents

Problems with police

Serious family arguments (p.180).

Most program clients in our sample speak well of their employee assistance programs to fellow workers (p. 181).

Eighty-five percent of the client sample attribute their rehabilitation to participation in their company programs (p. 181).

Ninety percent of clients in our sample gave high ratings to program staff for their competence, willingness to help, respectful attitude, trustworthiness, and confidentiality (p. 182).

The vast majority of the work force as well as virtually all management and labor interviewees like having an employee assistance program in their company (p. 180).

Conclusion

SELECTED CHANGES IN PROGRAM INPUTS AND OPERATIONS (p. 182) CAN INCREASE AND IMPROVE EAPS' CAPACITY TO SUCCESSFULLY DEAL WITH EMPLOYEE DRINKING PROBLEMS.

G. Ways the Study Data Can Be Used

1. The study provides participating railroad companies with data for future program planning--that is, data on the size, nature, and costs of employee drinking problems and suggestions on ways of managing these problems more effectively.

2. The study provides information that will enable future monitoring efforts to determine how well voluntary company efforts are working in controlling job-related drinking problems. This information will assist decisions about whether and what kind of additional actions may be required.

Conclusion

THIS STUDY PROVIDES DATA AND TOOLS TO ASSIST IN THE FORMULATION OF PLANS FOR EFFECTIVE WAYS TO CONTROL EMPLOYEE DRINKING PROBLEMS. IT ALSO PROVIDES BASELINE DATA AGAINST WHICH TO GAUGE THE EFFECTIVENESS OF COMPANY PRACTICES AIMED AT CONTROLLING EMPLOYEE DRINKING PROBLEMS.

RECOMMENDATIONS

On the basis of the findings and conclusions supported by the documentation in this report, we make these recommendations.

1. The railroad industry and rail labor should jointly and immediately work with the FRA to develop more effective ways of measuring, documenting, and controlling the impact of employee drinking on railroad safety.

2. Railroad companies should adopt and implement explicit policies regarding the application of drinking rules. These policies should be disciplinary (that is, educative and restorative) rather than simply punitive in practice. They should be aimed at promoting increased reporting and control of rule violations and should include the following elements:

a. Maintain existing drinking rules.

b. Explicitly and consistently apply these rules to all workers including exempt employees.

c. Allow drinking rule violators (first offenders) to retain an employment relationship as long as they enter and progress in treatment (problem drinkers) or enter and complete some educational regimen prescribed by the program (nonproblem drinkers).

d. After a first offense, keep problem-drinking rule violators out of service only until program counselors certify their fitness to return to service.

e. Instead of dismissing nonproblem drinking rule violators on a first offense, suspend for the average time needed by problem drinkers in treatment to return to service (use no more than three months until an average is established).

f. Abandon all minimum terms for being out of service for drinking rule violations.

g. Dismiss all second offenders.

h. Promulgate and explain this new relationship between the company program and company rules in the company policy statement and program materials.

3. Railroad companies should develop their company-based capability for making referrals to the program.

a. Supervisors: Clarify two-fold responsibility of supervisors to refer employees to the program on the basis of unacceptable job performance as well as to refer them on the basis of drinking rule violations. Arrange systematic ongoing training of supervisors on how to handle referrals based on unexplainable deterioration in work and observed rule violations.

b. Local chairmen: Institute and maintain an ongoing peer intervention program among local chairmen and company contract employees under the supervision of the director of the employee assistance program.

c. Medical officer and consulting physicians: In cooperation with the medical office, develop and implement a campaign to encourage consulting physicians to refer workers with alcohol-related problems to the program.

d. Employee receptivity: Plan, increase, and regularize program promotional efforts and provide railroad labor with a formally recognized process for making input and a defined role in the program to enhance worker receptivity of program services.

4. Railroad companies should make four major changes in EAP operations to enable them to handle a greater volume of clients caused by increased referrals:

a. Responsibilities of program staff: Make assessment and referrals, develop referral mechanisms and worker receptivity, and monitor treatment providers are the principal responsibilities of all program staff. Enjoin counselors from doing extended counseling, except where counselors are clearly qualified to treat and where it is cost-efficient to provide treatment within the program.

b. Systematic volunteer utilization program: Isolate especially time-consuming program functions that can be done by volunteers (for example, follow-up). Train the director in how to set up a volunteer utilization program, including ongoing training of volunteers in selected services and functions.

c. Selective increases in program resources: On roads that are already getting relatively cost-effective results and have a high volume of unmet needs, provide additional facilities (resources) and staff to serve more people.

d. New strategies aimed at reducing demand for services: In addition to improving and increasing services to financially feasible limits, initiate plans aimed at the worker and his environment to reduce the incidence of company-related drinking problems.

5. Employee assistance programs should implement the following steps to enhance the use and success of their services.

a. Contextual Variables

Use this study's data on the magnitude and impact of problem drinking and on the effectiveness of programs to make presentations aimed at initiating or maintaining/expanding company programs.

Where possible, locate or relocate program offices off company property.

Seek an organizational position for EAPs that ensures adequate funding, visibility, and authority and, therefore, continuation.

Initiate and continue a formal relationship with labor representatives and assign a specific role to labor in planning and monitoring program progress.

Provide adequate data to management upon which informed program decisions can be made.

Initiate and sustain a more cooperative relationship with the company's medical, safety, personnel, and labor relations offices.

b. Input Variables

Together with other program directors, identify and standardize elements and content of company policies.

Whatever the program type, foster confrontation of workers over work performance as an essential ingredient in encouraging referrals of employees with alcohol-related problems.

Clarify the relationships, responsibilities, and access procedures of supervisors in program literature and presentations.

Develop explicit criteria for accepting clients and for making specific kinds of referrals to community service organizations.

In recruiting new staff, aim for a diverse mix of professionals (with whom managers often seem to be more comfortable) and para-professionals with railroad experience (with whom contract workers often seem to be comfortable)

Examine the program's relative cost-effectiveness by calculating per-client costs and compare these to costs for other railroads.

C. Functions/Services

Revamp promotional and training materials to include information on prevention.

Train counselors in assessment referral skills, basic communication skills, and alcohol abuse combined with drug abuse.

Install a regular process for staff performance evaluation aimed at self-improvement.

Consider outpatient care as a referral option if finances and the client's predisposition or circumstances indicate its use.

Engage outside assistance to make the program more amenable to evaluation. Do a better job of substantiating results.

Together with other program directors, select criteria and measures for evaluating programs and standardize record-keeping practices to allow comparability of data.

5. Railroad companies should institute preventive practices aimed at reducing problem-drinking and job-related drinking. These strategies ought to be aimed principally at changing the work-related drinking practices and environment of railroad workers.

6. At least for the present, the Federal Railroad Administration should confine itself to promoting the initiation and development of the company practices and programs described in this report by sponsoring activities such as the following:

a. Delivery of Technical Assistance

To the study roads

To the nonparticipating roads with programs

To companies interested in starting a program.

b. Development of Training Packages

To train supervisors

To set up a labor peer intervention program

To train local chairmen

To deliver the findings of this report.

c. Delivery of Training

To EAP directors on establishing a volunteer utilization program

To directors on program evaluation

To counselors on assessment referral skills and basic communication skills

To directors on staff evaluation.

d. Additional Research

Continuing analysis of study data in response to program directors' needs for specific information

Examination of drug abuse among railroad workers.

7. The Federal Railroad Administration should support interested participating railroads in conducting additional studies to determine:

The degree to which voluntary company efforts are controlling employee drinking problems

The possible need for additional action.

8. Individually and collectively program directors should analyze and selectively implement the results of Project REAP.

1. INTRODUCTION

This report describes the methods and contains the findings of a study conducted both to determine the effectiveness of railroad programs that identify and assist railroad employees with alcohol abuse problems and to specify how such programs can be improved.

University Research Corporation (URC) conducted the study for the Federal Railroad Administration (FRA) and the Transportation Systems Center (TSC). Named Project REAP (Railroad Employees Assistance Project), this research effort had the following objectives:

Gather data on the extent of problem drinking, the impact and costs of problem drinking, and methods to alleviate the practice and effects of problem drinking;

Specify ways railroads can use and benefit from this data;

Identify railroads' policies and practices used to locate and rehabilitate problem drinkers, thereby reducing the incidence of problems caused to the railroads and the public by these individuals.

We conducted the study in two phases: a background data-gathering and methods-development phase lasting one year, and a data collection and analysis phase also lasting one year. Each phase included several discrete tasks.

Phase I tasks were to (1) review the August 1976 Department of Transportation (DOT) sponsored report "Alcoholism and Drug Abuse in the Railroad Industry," conduct a critical review of the literature on alcohol programs in industry, and provide operational definitions of key terms; (2) devise methods for calculating the prevalence and cost of alcohol abuse in selected railroads; (3) devise a method for evaluating the effectiveness of railroad programs for dealing with alcohol abuse; and (4) select a sample of seven railroad programs now being used to counteract alcohol abuse on which to conduct the study.

Phase II tasks were to (5) apply the methods developed in numbers 2 and 3 above to measure effectiveness of employee assistance programs operated by sample companies; (6) determine strongest and weakest characteristics of programs; and (7) make recommendations for the railroad industry as a whole.

1.1 PURPOSE

The study was based on three premises: First that alcohol abuse adversely affects industry in several ways. For example, alcohol abuse increases operational costs through lowered employee productivity and abnormally high absenteeism rates. Second, that effective occupational programs can lead to a reduction in alcohol abuse. Third, that the programs operated by railroads when the study was launched had not reached a very large number of affected employees. Moreover, the Federal Government had serious doubts about the utility of establishing regulations on alcohol abuse in an industry already considered overregulated by railroad officials.

The FRA hoped that individual railroads could get practical information upon which to develop effective voluntary alcohol abuse programs. Our findings are intended to form guidelines acceptable to management, labor, and government for launching voluntary employee assistance programs and for improving existing programs.

We surveyed the railroad work force to determine the prevalence of drinking problems among workers, including problems on the job, at home, with the law, and in various other aspects of life. The study drew correlations between the types of individual problems experienced and the personal characteristics of individuals including age, sex, type of job, and working conditions. In addition, we described the impact and, if possible, the cost of alcohol abuse to railroads. Seven railroads participating in the study have reliable information on the impact and cost of problem drinking to their companies, and other railroads can use these cost estimates to make informed decisions.

We also identified the characteristics of existing employee assistance programs and their accomplishments, including employees' awareness of and acceptance of programs, extent of contact between employees and the programs, and extent of employee rehabilitation.

We collected data from management and labor leaders, program clients (past and present), and the general railroad work force. We then compared the data with data in the literature on the operation of employee assistance programs so the study team could make recommendations on possible methods for improving employee assistance programs, including methods related to organizing and putting programs into effect.

1.2 BACKGROUND

In this study, we obtained information that would be useful to several groups in the railroad industry. Labor union representatives were primarily concerned with the health and well-being of workers; they also fear job dismissal as a result of individual drinking problems. Managers face increasing costs as a result of drinking problems among their work force and the loss of valuable employees. Railroad safety officers' concerns were associated with the already-documented relationship between drinking and several serious railroad accidents. Employees were reluctant to report drinking by fellow workers, and directors of employee assistance programs needed information that would increase their understanding of how widespread drinking problems were and how best to conduct programs to assist workers.

Prior to this study, five alcohol-related accidents occurred during a 10-year period and involved 11 deaths and $5 million in damage. A freight train accident focused attention on the problem. The train, with 5 locomotives, 70 cars, and a caboose, had hit another train because of the engineer's failure to respond either to mechanical signals to slow down and stop or to signals from flagmen on the train that was hit. Two people were killed, five others were injured. Damage to equipment was more than $1.5 million, and the cost of clearing the wreck was great.

An autopsy found that the engineer's blood alcohol concentration (BAC) was 1½ times as high as the legally defined minimum intoxication level in the state where the accident occurred. The National Transportation Safety Board (NTSB) concluded that:

> ". . . the probable cause of the accident was the failure of the crew. . . to stop their train, which was being operated at excessive speed by an engineer under the influence of alcohol. Contributing to this failure was the ineffectiveness of the /railroad/ in assuring compliance with its /own/ operating rules and procedures which were specifically designed to prevent an accident of a crew member who failed to perform his duties." (NTSB, 1974, page 2)

The NTSB recommended the development and installation of new types of accident-preventing hardware and the training of employees to take positive action to prevent such accidents. It also recommended that the FRA establish recommendations to prohibit use of narcotics and intoxicants for a specified period prior to reporting for duty. The industry preferred voluntary action to the administration of federally imposed tests for operating crews when they reported for duty. The FRA, labor, and management recognized the seriousness of having employees perform duties while under the influence of mind-altering substances but viewed with disfavor adding new federal regulations to an industry they considered as overregulated already. In a later FRA review of the situation, then-FRA Administrator Asaph H. Hall indicated that "the rail industry is moving positively to solve the problem without adding further outside governmental pressure." (NTSB, 1975, p. 5)

1.3 OTHER RAMIFICATIONS OF PROBLEM

Rule G of the General Rules in the Consolidated Code of Operating Rules of the Association of American Railroads prohibits railroad operating crafts employees from possessing or using intoxicants while on call, on duty, or on corporate property. Railroads which are not subject to the Consolidated Code, including Amtrak, have equivalent rules, and most railroads have explicit or implicit rules for exempt and nonoperating crafts employees. Many representatives from management, labor, and the government have expressed the view that drinking rules alone have not solved the problems created by drinking among railway employees.

Often, Rule G and similar rules are not obeyed or enforced. Perhaps because violation of drinking rules is punishable by firing, supervisors are often reluctant to take action that will lead to an employee's dismissal. Even if Rule G is strictly enforced, employees are entitled to a formal investigation and can file grievances, precipitating costly proceedings to adjudicate or dispose of the matter. In some cases, dismissal triggers action by the union if the employee is covered by a collective bargaining agreement. Appeals can be made, under terms of collective bargaining agreements, to the carrier officer assessing the dismissal. If the dismissal is upheld, the appeals can go on to the highest designated officer of the carrier and even to the national Railroad Adjustment Board or to special boards of adjustment on the individual roads. A neutral arbitrator or referee then makes a final decision, either sustaining the carrier's decision or ordering reinstatement with or without pay, depending on whether disciplinary action was considered excessive.

Individuals dismissed for rules violations are sometimes experienced and talented employees. In 1976, three railroad employment programs described typical members of the work force with drinking problems. The typical problem drinker on railroad number one was between 30 and 49 years old with 11-20 years of service. Railroad number two's typical drinker was 43 years old with 17 years of service. Railroad number three's problem drinker typically was 35-41 years old with 10 years of service. The problem drinkers reported were those in employee assistance programs. Data from other railroads indicate that employees dismissed for drinking violations are from the same age groups with 10-20 years of service and are highly trained and experienced workers. (Hitchcock and Sanders, 1976)

Certain features of railroad work may make employees particularly susceptible to the development of alcohol-related problems. These features are primarily requirements and circumstances regarding the use of time. Often, railroad workers do not work fixed hours and cannot plan their social lives so that drinking does not coincide with a call to work, for example, on 2 hours' notice. Many workers spend many hours on the job unsupervised. Researchers suspect that low employee visibility can lead to an increase in on-the-job drinking. (Trice and Roman, 1972) For example, a signal maintainer may spend many days on the job without ever seeing a supervisor. Other railroad personnel often spend long layovers away from home with few ways to fill their time productively. Trice (1966) has discussed how repeated absence from the family can lead to the development of a deviant drinking pattern.

From 1975 until 1977, several efforts were made to study the problems associated with drinking among railroad employees. In 1975, the FRA held a conference on detection, prevention, and rehabilitation of the problem-drinking employee, followed in 1976 by another conference on employee assistance programs. In 1976, other researchers conducted a survey of alcohol and drug abuse programs in the railroad industry. Finally, we began the present study of employee drinking patterns and associated problems and solutions in 1977.

1.4 LABOR-MANAGEMENT COOPERATION IN STUDY

Prior to beginning this study, we held briefings with representatives of managements and labor to obtain their ideas and assistance in the study's design. We worked to ensure the cooperation of personnel on each of the participating railroads so that all the required data could be obtained efficiently. We anticipated that, even though briefings had been held, respondents might have reservations about the study. Directors of employee assistance programs, for example, might fear that findings would cause them or their programs to appear to be deficient in some respects. Labor might fear that the results would identify individual workers. Management might fear that the information would give their roads a bad image with the government, stockholders, or passengers. Therefore, we met with labor leaders, corporate officers, and employee assistance program personnel to keep everyone informed and to alleviate concerns.

As a result of these meetings, URC received the support needed to conduct the study from labor and management at the national and local levels. The Railway Labor Executives Association (RLEA) and the Association of American Railroads (AAR) assigned liaisons to Project REAP. Each of the study railroads designated contacts to facilitate preparatory and study visits to the seven participating railroads. The directors of employee assistance programs provided intensive support in setting up the logistics of the study and in providing

or acquiring relevant information. All of these labor and management representatives advised URC on study methodologies and assisted in implementing the study design.

2. STUDY METHODS

This section records the process by which we carried out our preliminary research (Phase I) and formulated the methodology to be used in Phase II, the data collection and analysis phase. The work took one year and involved four tasks: critically reviewing literature, devising methods for calculating the prevalence and cost of alcohol abuse in selected railroads, devising a method for evaluating the effectiveness of railroad programs for dealing with alcohol abuse, and selecting a sample of up to eight railroads with employee assistance programs (EAPs).

For ease of reference, this section is divided into three parts. Part A deals with the way in which the above four tasks were carried out. Part B deals with the product of that research and the methodology and instruments developed as a result of it. Part C describes how the research was conducted.

2.1 DEVELOPMENT OF STUDY METHODS

2.1.1 Critical Review of Literature

Our first task was to review existing sources of information on alcohol and drug problems in the railroad industry. This research effort served three ends: to analyze those elements of the railroad working environment which may contribute to alcohol-related problems; to identify existing data on prevalence of alcohol problems, costs to the industry, and evaluation of treatment and remedies; and to generate a standard lexicon of terminology with which to evaluate existing data. Achieving these objectives involved both a review of over 200 reports, books, and articles, and several consultations with experts from the field.

a. Railroad Working Environment

A review of the literature found that since the railroad work force is over 90 percent male*, problem drinking rates are probably higher for railroad workers than for the general population. Existing literature (e.g., Trice and Roman, 1978) suggests that several other characteristics of the railroad working environment probably contribute to problem drinking:

Some employees are on eight-hour call and thus cannot always distinguish social from on-the-job drinking;

Many railroad employees are subject to extensive layovers, alone, and away from home;

Employees are often not under direct observation by supervisors and are subject to frequent supervisor turnover;

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*Because the railroad work force is so predominantly male, we use the masculine forms of personal pronouns when referring to railroad workers throughout this report.

Stringent penalties prescribed for alcohol use make supervisors reluctant to report observed infractions of the rules;

Drinking rules create a costly and cumbersome process for appeals of drinking-related dismissals of contract workers and result in both lack of reporting and the returning of the offender to the work force;

Supervisors frequently report drinking rule violators only after the employee's drinking has reached the point of alcoholism or chronic use.

Largely on the basis of these facts, a 1975 FRA-sponsored conference held in Evanston, Illinois, recommended that remedies for the problem of drinking among railroad workers be confined to voluntary programs, developed by and tailored to the needs of individual railroads. As evidence of its support, the FRA in 1976 sponsored a literature search on occupational programs in other industries and a descriptive analysis of 20 railroad employee assistance programs by the Naval Weapons Support Center. The report from that study, entitled A Survey of Alcohol and Drug Abuse Programs in the Railroad Industry (Hitchcock and Sanders, 1976), was a central resource to us in beginning the next phase of our literature survey.

b. Existing Data on Prevalence, Costs, and Evaluation of Present Programs

We conducted an extensive literature review to collect data on prevalence, costs, and evaluation. Our findings on prevalence and costs were considerably less than we had expected. Evaluation data were more abundant.

Prevalence data were flawed by several defects:

Prevalence data were based on extrapolations from other industries even though certain characteristics of railroad workers and railroad work are possibly more conducive to alcohol problems than is the case in other industries;

Many prevalence data were based on alcoholism data derived through indirect estimation of a given geographic area or occupational group; and

Many of the data were based on surveys of client records (from treatment programs) or from surveys of supervisors, neither of which can be taken as an unbiased estimator for the total population.

Because of this dearth of reliable information, only one method appeared useful to calculate the extent of alcohol-related problems: to collect data ourselves by surveying the overall railroad work force.

The main challenge in determining costs of problem drinking was to choose a suitable system for calculating these costs. Three methods of cost calculation were identified: the Winslow approach (a cost-accounting model), the cost-benefit model, and the cost-effectiveness model.

The Winslow approach is essentially a method for calculating costs of alcohol problems. It involves the calculation of costs in four general areas: cost of impaired productivity, cost of interpersonal friction, cost of absenteeism, and cost of health and accident problems. This approach does not compare alcohol-related costs with program results in any way. After reviewing the literature on the estimation of these costs, we determined that the limitations of railroad policies, the intangibility of some costs

and recordkeeping practices would restrict our ability to derive estimates for some cost categories in the Winslow schema. DOT literature, for example, revealed that most railroad employees do not receive sick pay. The effects of interpersonal friction are too vague to measure in dollars and the employee health records from railroad medical departments are likely to omit mention of drinking problems.

The second model was the cost-benefit model. By using this method, the cost of an employee assistance program would be compared to the estimated dollar value of program benefits in order to develop a cost-benefit ratio. Although it is possible to estimate a fairly incontrovertible dollar value for some program benefits (for example, reductions in alcohol-related absenteeism), it is not possible to do so for other important program benefits (for example, group morale, reduced alcohol-related illnesses, and reduced on-the-job injuries). Since any dollar value assigned to some important program benefits are likely to be controversial, we decided not to apply a cost-benefit methodology.

A third method--one more suited to the project's purpose and the kind of cost information likely to be available--was the cost-effectiveness method. This method involves describing and comparing the impact of alcohol problems and program results in ways that do not exclude, but are not confined to, dollar estimates. This method permits the evaluation of programs against important impact criteria which are not easily translated into dollars (for example, reduced labor-management tension or reduced employee-customer disputes) as well as other impact criteria which are more easily converted into dollar savings.

In conducting a review of literature on evaluation of social programs in industry, we relied on several resources:

NIAAA National Clearinghouse for Information;

Rutgers Center for Alcohol Studies;

The Naval Weapons Support Center's Survey of Alcohol and Drug Abuse Programs in the Railroad Industry; and

Relevant professional journals.

We did not restrict ourselves to programs dealing exclusively with alcohol abuse, since the purpose of our research was to explore the methods for undertaking such evaluations.

Our review identified three methods of evaluation: the goal-attainment model, which describes the population before and after intervention; the systems model, which gathers process and outcome data; and the cost-benefit model identified above. (A detailed critique of the three systems and their application in both social programs and alcohol programs can be found in "Evaluation and Process Outcomes of Railroad Alcohol Problems," an interim product of this project.) For each of these evaluation methods three implementation methods may be used:

Experiemental design, involving a control and experimental group;

Quasiexperimental design, involving a treatment group and a comparison group; and

Nonexperimental design, in which no comparison or control group is used.

Our evaluation review determined that our own survey should combine elements of the goal-attainment and systems models and that a quasiexperimental design be employed because, although comparisons would be necessary, it would be impossible to employ true control groups.

c. Generate Standard Lexicon of Terminology

During the literature review phase, we worked with a panel of nationally prominent experts to develop definitions of terms which would be crucial to the study. Included on this panel were alcohol specialists, specialists in occupational programs, and directors of railroad employee assistance programs.

Before this meeting panel members were sent an initial list of 29 terms specified by FRA and were asked to submit definitions as well as additional terms which they felt needed definition.

The panel was then assembled for a full day's conference to resolve discrepancies in definitions. The final glossary included more than 80 items. (See the second section of this report for the dictionary of definitions.)

d. Summary of Literature Review

Our literature review resulted in several decisions: First, we specified research questions and formulated hypotheses. Second, we decided that a survey would be necessary to gather data on the extent of the problem. Third, we chose a cost-effectiveness model to evaluate the sample employee assistance programs (EAPs). Fourth, we determined that our own survey techniques would require a quasiexperimental approach to a combination goal-attainment systems model.

2.1.2 Devising Methods for Calculating the Prevalence and Costs of Alcohol Abuse in Selected Railroads

a. Prevalence

This study undertook three activities to devise methods for determining:

The number of problem drinkers employed by all the sample railroads, by individual railroads and within different job categories on individual railroads.

The frequency of drinking problems on all these railroads, on individual railroads, and within different job categories on individual railroads.

These activities included: the convening of an expert panel on prevalence; the design of surveys, with panel guidance, of EAP clients and other railroad workers; and the collection of information from company records relevant to alcohol-related problems.

Prevalence panel members included three prevalence researchers, an epidemiologist, and a director of a railroad alcohol abuse program.

Before the meeting, we sent the members copies of preliminary drafts of our literature review to elicit their comments and to provide direction for the meeting.

Panelists concurred with our literature review findings that existing data were insufficient for indirectly estimating the prevalence rate of problem drinking on railroads. After reviewing three methods currently in use, the Jellinek method, the Marden method, and the method being used by Creative Socio-Medics, we determined that each of these methods of indirect estimation would produce estimates of dubious utility. Methods developed by Jellinek and Creative SocioMedics are designed to generate estimates of alcoholism, not problem drinking. More importantly, the Jellinek method is circular; it actually requires and assumes an estimate of alcoholism in the formula used to generate the estimate. The kind of medical information required by Creative SocioMedics' method is not available for railroad workers. Marden's technique uses problem drinking data from the population at large--a population that could differ in important respects from the railroad employees in this study. What is more, the principal demographic variables used by Marden--sex and age--are not very precise predictors of problem drinking. We concluded that only by conducting a survey would we be able to generate valid and reliable estimates.

We also planned to examine other sources of data on prevalence including employers, doctors, supervisors, and other management staff of the study railroads. Through personal interviews and questionnaires, we intended to assess the effects of problem drinking on such important aspects of railroading as employee health, labor relations, and safety.

We created a panel to review methods and procedures identified during the literature review. Cost panel members included URC staff, a railroad economist, two program representatives who have done pioneer work in estimating the cost of alcohol problems to industry, an economist, an evaluator/researcher of occupational programs, and a railroad employee assistance program director. We determined that neither cost-benefit techniques nor the Winslow methodology was completely suitable to our purposes. Cost benefit analysis would necessitate dropping real but nonquantifiable program benefits from the study's purview. Winslow's cost categories did not correspond to accounting categories used on railroads. We modified Winslow's accounting technique to match the way in which railroads themselves tracked costs for some aspects of the study. In addition, we classified each type of potential cost as to whether we could generate estimates, could not generate estimates, or might be able to generate estimates. For other aspects of the study we applied a general cost-effectiveness model.

We sought to obtain cost data by extrapolating cost estimates from other industries, by ascertaining costs from company records, and by integrating cost questions into the prevalence survey. Cost estimates would be derived for accidents, grievance proceedings, disciplinary actions, turnovers, absenteeism, health and medical costs, and disability. Although advised to eliminate deterioration of morale and loss of productivity as areas to be examined, we decided to see if impact or cost data could be derived for the study railroads.

Consequently, the prevalence survey was expanded to include new categories of cost estimates.

2.1.3 Devising Method for Evaluating Effectiveness of Railroad Programs for Dealing with Alcohol Abuse

Our first step in devising methods for evaluating existing programs was to convene a panel of experts on such evaluations. The panel included: the director of an earlier FRA-sponsored study on alcohol abuse, an epidemiologist, a former staff member of the Occupational Branch of the National Institute on Alcohol Abuse and Alcoholism, two alcoholism researchers, and an evaluator.

Panel members were presented with our findings from the literature review, and we told them that we wished to conduct a process and outcomes evaluation incorporating the following elements:

a. Process Variables

The sequence of events that lead to program development;

The company's written policy specifying its attitude toward employees with alcohol problems;

Education of the work force on the policies and procedures for assistance;

Channels through which clients are identified, counseled, and referred;

Cooperation by labor and management in providing program support;

The extent to which the program aids management and employees;

Program self-evaluation;

Number and involvement of paid and unpaid staff;

Enforcement of drinking rules and interaction with the program; and

Awareness of supervisory personnel and willingness to help subordinates.

b. Outcome Variables

Effectiveness in reaching entire company work force;

Improvement in work and social performance; and

Cost reduction to industry.

In assessing the criteria of program performance stated above, we would use three ratios when calculating outcomes:

The awareness ratio, or the proportion of employees who know about the program and its services;

The acceptance ratio, or the proportion of employees who have used the program; and

The rehabilitation rate, or the proportion of employees whose program participation is successful.

Data gathering could be incorporated into the overall survey process with appropriate levels of staff included to provide all evaluation data needed.

The evidence gathered from our panels was synthesized into one program for data collection, using a variety of instruments and techniques. Prevalence data would be gathered by a mail survey and interviews with company officials, and cost and evaluation data would be obtained through records, surveys, and interviews.

2.1.4 Selecting Sample of Up to Eight Railroads With Employee Assistance Programs

The FRA Administrator invited presidents of all Class I railroads to participate in the Project REAP study. Nine railroads volunteered to participate, of which eight were selected based on the following criteria: willingness to cooperate, willingness to share company records, size, geographic spread, age of the EAP, number of employees in the EAP, and availability of computer-based files. The eight selected railroads cover the continental United States, employ about 234,000 workers, or about half the nation's railroad workers, have track mileage ranging from 322 to 23,000 miles, employ from 1,400 to 90,000 persons, and provide a wide variety of EAPs.

2.2 STUDY RAILROADS

The following railroads* were chosen:

a. The Burlington Northern (BN), with main offices in St. Paul, Minnesota, was incorporated in 1961. It employs 63,000 people. Of the railroads participating in the REAP study, the BN owns and operates the most track miles, almost 22,500 miles. The BN operates primarily in the Midwest and Northwest but has a major link to the Gulf coast. The road also serves Canada through a subsidiary, Burlington Northern (Manitoba), Ltd. BN carries field farm products, metallic ores, coal, food products, and lumber and wood products. Approximately 90 percent of the BN's revenue train miles were the result of freight carriage.

b. The Chicago, Milwaukee, St. Paul, and Pacific Railroad Company** (Milwaukee Road) has corporate offices in Chicago, Illinois, and serves the Midwest and the Pacific Northwest. The Milwaukee Road was incorporated in 1927 and reorganized in 1945 after bankruptcy. In 1971, the Milwaukee Road joined the Amtrak network. The Milwaukee Road operates 5,500 miles of main track and employs 11,400 persons. Freight commodities carried include farm products, food and food products, lumber products, motor vehicles, and pulp and paper. The Milwaukee Road also runs a commuter line for Chicago and its suburbs.

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*Although the following paragraphs are lettered "a" through "h," only seven of these railroads are referred to in the text, and not necessarily in this sequence.

**The Milwaukee Road has been used in pre-test studies only, and no findings are reported herein.

c. The Consolidated Rail Corporation (ConRail), established in 1976 pursuant to the provisions of the Regional Rail Reorganization Act of 1973, resulted from a consolidation of six bankrupt United States railroads (Central Railroad Co., Erie Lackawanna Railway Co., Lehigh and Hudson Railway Co., Lehigh Valley Railroad Co., Penn Central Transportation Co., and Reading Co.). ConRail, with corporate offices in Philadelphia, Pennsylvania, operates 17,000 miles of track in the northeastern United States and Canada and employs almost 94,000 people. ConRail is primarily a freight carrier with freight accounting for approximately 90 percent of its revenue train miles.

d. The Duluth, Missabe and Iron Range Railway Co. (DM & IR), with offices in Duluth, Minnesota, is totally owned by U.S. Steel. In 1937, the Duluth, Missabe and Northern Railroad Co. merged with the Spirit Lake Transfer Railroad Co. and in 1938 acquired all capital stock of Duluth and Iron Range Railroad Co. (incorporated 1875) and Interstate Railway Co. The DM & IR employs 1,400 persons, has only 441 mainline track miles, and operates solely within the State of Minnesota. However, it is the largest carrier of iron ore in the United States.

e. The Illinois Central Gulf Railroad Co. (ICG) has corporate offices in Chicago, Illinois. The ICG was incorporated in 1971 to effect the merger of the Illinois Central Railroad Co. and the Gulf, Mobile, and Ohio Railroad Co. The 9,000 main track miles form a band which joins the Great Lakes and the Gulf of Mexico. Primarily a freight carrier (90 percent), the ICG transports farm products, coal, food (meat and grain), lumber, wood, pulp and paper products, chemicals, and transportation equipment. More than 20,000 men and women are employed by the ICG.

f. The Long Island Railroad Co. (LIRR) is owned by the Metropolitan Transportation Authority (MTA) of the State of New York. Of the railroads involved in the REAP study, the LIRR is the oldest, incorporated in 1834 under New York laws. In 1966, the LIRR was sold to what is now the MTA. The MTA now controls all railroad lines on Long Island. The line employs 6,500 people to operate the 325 track miles on the commuter railroad.

g. The Seaboard Coast Line Railroad Co. (SCL) is controlled by Seaboard Coast Line Industries with corporate offices in Richmond, Virginia. SCL was incorporated in 1944 as Seaboard Railway Co. The name was changed to Seaboard Air Line Railroad Co. The present name was adopted in July 1967 after a merger with Atalntic Coast Line Railroad Co. SCL operates almost 9,000 miles of track and has almost 20,000 employees. Passenger service was discontinued in 1971. SCL now transports nonmetallic minerals, food and food products, and lumber and wood products in the Southeast.

h. The Southern Pacific Transportation Company (SP) is controlled by the Southern Pacific Co. with main offices in San Francisco, California. The SP serves the Southwest and West with over 11,000 track miles and 41,000 employees. SP is primarily a freight carrier and transports farm products, food products, lumber, pulp and paper products, chemicals, petroleum and coal products, and transportation equipment.

From among this group, one railroad was selected as a pretest company to provide information for revising the methodology, if necessary. We assured representatives of these railroads that we would maintain the anonymity of railroads in presenting results. Therefore, the order of railroads as presented in this section is alphabetical. Code letters used in later parts of this report (for example, Railroad A) to identify railroads do not parallel this order.

2.3 DESCRIPTION OF STUDY METHODS

2.3.1 Data Collection

We gathered data through records search, questionnaires, and interviews involving nine categories of personnel: top management, supervisors, union general chairmen, union local chairmen, medical officers, safety officers, grievance officers, employee assistance program directors, and staff of employee assistance programs.

a. Records Search

The records we used for backup data came from the FRA files in Washington and other sources at the railroads, unions, the Railroad Retirement Board (RRB), and EAPs. We collected these data directly and through the mail.

b. Questionnaires

We administered two surveys: the first was a general survey of randomly chosen employees by prescribed categories (exempt, operating, and nonoperating); the second, a survey of program clients. We chose the general survey sample from computerized employee lists. Through the EAP director, we selected the client survey sample from client records at the employee assistance programs chosen within parameters established by REAP staff.

c. Interviews

We conducted five interviews among selected respondents in each of the categories of top management, work supervisors, union general chairmen, and union local chairmen; a total of 200 interviews. On each of the railroads, we also interviewed the medical officer, the safety officer, one grievance officer, and one employee assistance program director--a total of 28 interviews. In addition, we interviewed all EAP counselors. In preparation for these interviews, we drew up separate interview guides for each class of personnel.

2.3.2 Pretest and Revisions to Instruments

Members of the Social Research Group from the University of California at Berkeley and a staff member of the Epidemiology Branch of the National Institute of Alcohol Abuse and Alcoholism reviewed the surveys and interview instruments.

The railroad on which we pretested the instruments was the Chicago, Milwaukee, St Paul and Pacific Railroad Company (or the Milwaukee Road). We mailed the general survey to a total of 210 employees in a random sample (70 from each occupational category--operating, nonoperating, and management). The response rate was 72 percent.

We mailed cover letters signed by the Milwaykee's Vice President for Management Services. Union representatives to the Milwaukee program signed cover letters to the contract employees.

During the pretest, we interviewed the program director and staff of the employee assistance program, five supervisors, five vice presidents, five union general chairmen, and grievance, medical, and safety officers.

After the test, we recorded several questions on the survey for clarity and changed question formats.

Several of the interview guides required revisions as well. The staff interview was too long, lasting in many cases as long as four hours. The supervisors interview test revealed that although the instrument was acceptable, interviewees needed to be chosen from a step lower on the organizational ladder in order to assure contact with workers. Interviews with vice presidents proved acceptable in content and length, although it was noted that people at this level found difficulty in discussing observed drinking problems in levels other than their own. We found the single interview guide used for both general and local chairmen inadequate for use with both groups. We adapted the guide for use with each kind of chairman. We did not pretest the medical interview guide, because the Milwaukee, like most major railroads, provides no direct medical services.

In order to calculate time requirements for Phase II testing, we kept detailed records of interview length.

2.3.3 Data Tabulation and Analysis

We used statistical procedures to reflect situations on the railroad, to determine correlates of drinking behavior, and to make comparisons among groups or organizations where such comparisons were relevant to the research effort.

We generated prevalence estimates for each of the railroads and occupational categories. Nonstudy railroads can use these estimates for speculating about their own prevalence rates or can make indirect estimations of the extent of the problem based on the Project REAP data.

By combining data from the general survey, the interviews, and various types of records, we described the impact of drinking problems and attempted cost estimates in these categories: absenteeism, lost productivity, injuries, accidents and property damage, illnesses and disabilities, budgets of employee assistance programs, and grievance procedures. Railroads not involved in the study can extrapolate costs and/or use the method we used to calculate costs themselves. We describe the method which we used to derive various costs in those parts of Section 4 where we present the alcohol-related costs of individual cost categories (pp. 65-104).

The evaluation methodology relies heavily on subjective evaluation of labor leaders and management officials, because program acceptance by these groups is critical to program utilization and success. The general survey taps general employee awareness of and knowledge about the program and its services. Program directors, staff, and records provide much of the information about daily operations of the programs and their practices and policies. Finally, we will assess the tangible consequences of program participation and client reactions to program participation.

2.4 IMPLEMENTING METHODOLOGY

The most important data-gathering tools of the study--the questionnaires and the interviews--required special attention to provide dependable data for program use.

2.4.1 Survey of General Work Force

We conducted probability sample surveys of the populations of seven railroads by mail. The sample on each road was large enough to permit us to estimate a hypothetical population value of 10 percent plus or minus 2 percent, with a 95 percent level of confidence.* (Cochran, 1977) In addition, each sample was increased in size by one-half to allow for potential nonresponse.

a. Stratified Sample

We proportionately allocated the sample on each road to three strata based upon occupational category. The strata were management or exempt workers, employees not covered by union contracts; operating crafts workers, employees who work with the moving train and engine; and nonoperating crafts workers, employees who are covered by union contracts but do not work on the moving train or engine. Examples of exempt workers are computer programmers and general managers. Conductors and engineers are operating crafts workers. Carmen and welders, who work on stationary trains, and bookkeepers are non-operating crafts workers.

The relative proportions of each category of workers differ on the eight railroads. We chose to stratify along occupation dimensions because of the differences in the working conditions among the three strata. For example, exempt workers are usually on 24-hour call, and they are often responsible for making decisions which affect railroad policy. More than anything else, the consequences of an exempt worker's being alcohol impaired are likely to be different than the consequences of alcohol impairment in a contract employee. Exempt workers have worked for the railroads many years; many of them have come up through the ranks or have a higher degree of education with training in such fields as accounting or computer science.

The consequences of alcohol abuse by operating crafts workers, on the other hand, are likely to be more immediately dramatic. For example, an engineer who is alcohol impaired might run the train off the tracks, or collide with another train. As we have seen in Section 1, such an accident instigated FRA's research into alcohol-related problems on the railroads. Some operating crafts workers also travel more than other workers and are, therefore, away from direct supervision in many cases. They are often subjected to the pressures of stress or boredom while they are away from home on a layover.

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*Based upon the formula:

$$n = \frac{\frac{t^2PQ}{d^2}}{1 + \frac{1}{N}\left(\frac{t^2PQ}{d^2} - 1\right)}$$

where: n = required sample size
t = standard normal deviate (from tables)
P = estimate of proportion which is to be determined
Q = 1 - P
d = tolerable error
N = population size

The nonoperating craft workers, like operating crafts workers, often have opportunities for drinking, and their impairment can have serious consequences for themselves and others. For example, bookkeepers may record figures incorrectly, a mechanic may fail to tighten necessary bolts, and a maintenance-of-way worker may injure himself or others through misuse of heavy equipment used for track repair.

Differences among these strata in their work conditions and personal background and in the potential consequences of their drinking make it important to consider these groups of workers separately.

Operating crafts workers and nonoperating crafts workers are referred to respectively throughout this report. For the sake of readability, they are often referred to as "ops" and "nonops," respectively.

b. Data Categories

The questions we have tried to answer with the general survey are divided into several broad categories. On the questionnaire, we first asked questions of railroad employees about their jobs. We wanted to know what jobs they held, how long they had worked for the railroad, and the characteristics of their jobs. For example, we wanted to know if they had the freedom to set their work hours, how much they liked their jobs, and whether they considered themselves work addicts. Our purpose in asking questions about railroad workers' jobs was to assess the relationship of various job factors and stresses to problem drinking.

In the second section of the questionnaire, we asked questions related to drinking on the job to determine how many workers in different types of jobs are likely to take a drink, either on duty or while they are subject to call. We also wanted to identify some of the potential effects of railroad employees' drinking. For example, we were interested in the psychological effects on-the-job drinking has on co-workers, the incidence of workers' filing claims after injuring themselves after drinking, and the incidence of damage to company-owned property while drinking. We also wanted to identify the norms of drinking. All of the railroads have strict rules against drinking. People often do not obey rules, however, even though the rules are valid. Individuals often work by an informal set of rules which can be called the norms of work. We tried to identify the norms related to drinking on the railroads. In other words, we examined the degree to which employees abide by existing drinking rules and conditions under which workers approve of a coworker's drinking.

We were also interested in learning the conditions under which a worker is likely to report a coworker's drinking and the likely consequences of being reported. In other words, we wanted to know how serious a potential consequence of drinking would have to be before a worker would comply with drinking rules and report a coworker's drinking or drunkenness. We asked a final question in this section to find out how workers think drinking affects the company.

The next set of questions were about the workers' own drinking habits, not on the job, but in their daily lives. The main focus of Project REAP is on the work-related consequences of employees' alcohol

use and on-the-job drinking or drinking when subject to call. The study is not primarily concerned with whether employees drink if drinking does not take place on the job and does not have an impact on work performance.

The complete picture of a respondent's drinking history is difficult to obtain in a survey, particularly when the survey instrument is mailed to respondents and not administered by an interviewer. The survey pretest indicated that many people were having difficulty answering questions. We had to make the survey as brief and as simple as possible. For example, we reduced the number of questions on drinking not related to the job because job-related drinking was more important to this survey. Many of the measures we developed are useful for determining the extent to which railroad workers are drinking and for comparing their levels of drinking with those of the general population.

We asked questions about problems respondents have had either following periods of drinking or during periods of drinking in the last year and lifetime problems that they attribute to the use of alcohol. We asked not only about specific problems but about the frequency with which these problems have occurred; we also tried to get an indication of the severity of the problems.

Another issue which we have tried to deal with is how the workers feel about the rules, such as Rule G or its equivalent, that forbid drinking. Are they aware of the rules forbidding drinking on the railroad? Do they think the rules work? Do they think some people are treated more fairly or unfairly by the rules? Have they ever reported anyone for violation of the rules? Do they know anybody who has ever reported anyone for violation of the rules? What happened to the last person that they know to have been reported?

The next section of questions dealt with workers' responses to drinking problems. If they thought they had a problem, who would they be willing to tell about it? In particular, would they discuss the problem with a person from the employee assistance program? Would they go to the program for help? If not, who would they go to for help? Did they know about the employee assistance program and its services on their railroad? How had they heard about it? Did they know anyone who participated in the program?

The final section of questions dealt with demographic variables (that is, the age, sex, race, religion) of the respondent. Any of these variables may be related to drinking and to problem drinking. We were interested in whether the relationships between drinking and these variables in society also exist among railroad workers. Identification of such relationships might make it possible to predict that certain classes of workers are more likely to need program services.

Such relationships are only statistical and refer to aggregates and not to individuals. Thus, for example, to say that a relationship exists between sex and problem drinking only means that men are more likely than women to be problem drinkers and not that any one man is a problem drinker or any one woman is not.

c. Value of Self-reported Information on Drinking

Researchers often question the validity of responses to questions about "socially undesirable behavior." It is likely that the frequency of some behaviors will be underreported because of the social undesirability associated with them, because people are likely to forget some things, and because of fear of identification and possible punitive action. However, a well-conducted probability sample survey was the only means for getting much of the information we needed. No official records exist on drinking among railroad workers. We have to trust our respondents. It is true that many forms of behavior may be unreported, but it is also true that relationships among variables are not as likely to be influenced by underreporting as the estimates of prevalence of certain phenomena. That is to say, relationships are often unaffected by underreporting. (Blane et al., 1977)

d. Confidence Intervals

Sample surveys represent a practical solution to obtaining a maximum amount of information at a given level of resources available to gather that information. Well developed mathematical models allow the researcher to specify the precision of sample values obtained through the survey, and to use those specifications to make comparisons between and among estimates.

We have provided a table of values (see Appendix) which can be used to create 95 percent confidence intervals for each of our table values. These confidence intervals can be used to determine how precise given estimates are and to judge the statistical significance of differences among table entries. Instructions for use of the table are in the Appendix.

e. Response Rates

The rate of response to the survey was higher than we had been led to expect either by the literature or by the experience of the railroads themselves in conducting their own internal surveys. Response rates range from 60 to 82 percent with a median value of 69 percent. There were approximately 8,000 in our total sample. We received responses from 5,704 on the seven railroads. The response rates are based on size of the original sample adjusted upward to account for individuals whom we discovered had either retired, died, or were no longer working for the railroad (2.8 percent).

We allocated our subjects to strata in proportion to the size of these strata in the population. The respondents in each stratum, however, did not respond to the general survey at the same rate. In general, managers were more likely than either the operating or nonoperating employees to respond to the survey. Since the final sample was not strictly proportional, we weighted each of the strata during data analyses in order to generate our population estimates.

f. Nonresponse Bias

One of the problems which all survey researchers have to face is the possibility of getting a "low" response rate. Exactly what "low" means is hard to determine, but anytime the response rate is less than 100 percent, the possibility exists that those who did not respond to the survey are different in some way from those who responded. This introduces the problem of nonresponse bias. That is, the picture of the population obtained by considering the responses of those who responded to the survey may be biased or misleading since important information was not received from the nonrespondents. Consequently, whenever possible, it is good practice to look at the differences, or possible differences, between respondents and nonrespondents. It is very unlikely that one will have direct measures of variables such as drinking, since if direct measures existed, it would not be necessary to conduct a survey. It is possible to identify and study factors suspected of being correlated with problem drinking. If these factors differ between respondents and nonrespondents, one might suspect that the measure one is interested in also differs between respondents and nonrespondents, and, therefore, results should be interpreted with caution. Another technique which is sometimes used for detecting potential bias is comparing the responses of early and late respondents to the survey. The assumption is that late respondents are more like nonrespondents than early respondents are. Therefore, if the answers of late respondents differ from the answers of early respondents, it can be concluded that the answers of the nonrespondents also would have differed from the answers of the respondents.

We were able to employ both of these methods to determine the presence or absence of nonrespondent bias.

Using data from the computerized personnel files of two study railroads, we compared respondents with nonrespondents on characteristics which we believed might be related to problem drinking. Under the assumption that they would be related, if differences were discovered between the two groups on these variables, we would be forced to conclude that a strong possibility of bias because of nonresponse did exist. If no relationships between these variables and responses were discovered, we would conclude that such bias was unlikely, though, of course, we would not have <u>proved</u> that it did not exist (such proof of a negative is empirically impossible).

Because of differences in the personnel files of the two cooperating railroads, there were some differences in the information which they were able to provide for us although there were many common items which both provided. Railroad F supplied data on all respondents and all nonrespondents for a total of over 1,000 cases. Railroad G supplied data on all of the exempt nonrespondents, 25 nonrespondents for each of the remaining occupation categories, and on 75 respondents sampled equally from the three occupational categories.

On neither of these railroads did we find any evidence for nonrespondent bias. The variables considered for Railroad F were age, sex, length of time employed by the railroad, occupational category,

number of accidents involved in, number of injuries involved in, and number of absences in the past year. The only significant difference found between respondents and nonrespondents on any of these variables was for occupational category. Exempt workers were more likely to respond than contract employees. However, we conclude that this difference is probably due to the greater tendency of exempt employees to respond to a mailed survey and do not feel that any relationship to problem drinking produced the result.

Railroad G provided data on sex, age, occupational category, number of disciplinary actions, number of rule violations, number of injuries, and length of time employed by the railroad. Not one of these seven measures showed any significant relationship to response or nonresponse. Here, too, we were able to conclude that no evidence suggests the existence of nonresponse bias.

The results of our other approach to the nonresponse bias problem are not as unequivocal.

We calculated how many days after the initial questionnaire mailing the completed questionnaire was returned by each respondent. On each railroad we determined the relationship of this length of time for return to the measures: whether or not the respondent drank, a drinking problem frequency-severity score (See Section 5), and a dichotomous indicator of whether or not the respondent is a problem drinker.

On Railroads B, C, E, and G none of these drinking-related measures was related to the speed of a questionnaire return and we concluded whether no evidence exists for nonresponse bias. On Railroad F, drinkers tended to respond earlier than nondrinkers, although no relationship was found between either of the problem measures and the response date.

On both Railroads A and D, problem drinkers responded later than nonproblem drinkers, although no relationship was found between whether or not a person drank and the response date. This finding does indicate the possibility of nonresponse bias which might affect some of the results for these two railroads.

On the other hand, because multiple statistical tests were performed to detect the presence of the potential bias, the validity of any one of those tests, itself, is questionable. (E.g., Cohen and Cohen, 1975) When the criterion for detection of bias is strengthened to allow for the 21 statistical tests which had to be conducted, only Railroad D produced reliable evidence of a potential for bias.

To summarize, using two different methods we found no reason to suspect nonresponse bias in the data from most of our study railroads. Although some equivocal evidence exists for at least a potential for nonresponse bias on two or three of the railroads, only on Railroad D was the potential still evident when tested by the most rigorous techniques. Although, of course, all of these techniques are only inferential and do not prove or disprove the existence of nonresponse bias, we concluded that in most cases this type of bias did not exist in our data.

2.4.2 Survey of Program Participants

The survey of program participants was distributed to a random sample of individuals who come into contact with the employee assistance program on each of the eight railroads. Some individuals have been through treatment. Others are currently in treatment. Other have been referred to the program but declined to accept its services. Others may have been referred to the program, and the program may have decided not to offer them services either because they did not need services or because a referral was more appropriate.

a. Sampling Plan and Method of Administration

Because of the confidentiality of EAP records, administration of the client survey presented special problems. REAP staff did not have direct access to client files or even client names. Consequently, special arrangements were worked out with each of the program directors for REAP staff to supply sample size information and directions for physically drawing the sample so that program directors could actually distribute the questionnaires. Respondents mailed the questionnaires directly to Project REAP. Using this technique, followup mailings were impossible.

About 100 program participants were randomly selected from each railroad program to receive questionnaires. This sample size was selected to be sufficient to estimate any population proportion with a tolerance of $\pm$ 10 percent at the 95 percent level of confidence. The questionnaires were delivered either in person or through the mails at the director's convenience. While directors retained a veto over any client selected for the sample, they were instructed not to apply it indiscriminately.

b. Data Categories

Many of the issues in the program participant survey are the same as those in the survey of the general work force. Actually, program participants are members of the general work force and can provide much of the same information. The added advantage is that they may be particularly attuned to alcohol problems and certainly can report personal experiences. Although their responses could not be used to generate estimates of prevalence in the work force, still they could provide information about relationships among variables and the etiology of problem drinking in the railroad environment and possibly in the industrial environment as a whole. These respondents, we hoped, would provide unique information which only program participants could provide, such as benefits of program participation, both subjective and in behavioral terms, as well as factors about the program that they considered to be negative. Such information would be invaluable in helping to design future programs and to improve the ones which currently exist.

c. Response Rates and Limitation of Data

Response rates to the survey of program participants were disappointing. Although most program directors did not supply us with enough information to calculate exact response rates, the overall response rate was about 33 percent. Only two responses were received from one of the railroads and eight from another. By any standards, these response rates have to be considered unacceptable for drawing hard conclusions. The possibility of nonresponse bias is too great, and it is impossible in this case to assess it.

Nonetheless, we may be able to draw inferences from the responses received from program participants. We will present the findings from program participants. We will present the findings from the program participant survey, but it is important to remember that these findings are based on low response rate data and are presented only as suggestions. We will not attempt to make inferences about individual railroads or programs based upon these responses.

2.4.3 Interviews

Key individuals in different roles on railroads have unique perspectives on the problem drinking situation in the railroad and have special reasons to be concerned about problem drinking there. Specifically, these individuals include top management, the safety officer, the medical officer, the labor-relations or grievance officer, the work supervisor, the union local chairmen and general chairmen, and the employee assistance program director and counselor.

We interviewed five representatives of each of the following categories on each railroad: top management, work supervisors, general chairmen, and local chairmen, program directors, and program staff. On any railroad, the number of occupants of many of these categories will be large, ranging perhaps from a few dozen top managers and general chairmen to a few thousand work supervisors and local chairmen.

a. Profiles of Interviewees

We thus interviewed about 175 supervisors and management executives and labor representatives (besides program staff who are described in Section 6). We interviewed 38 supervisors. They supervised an average of 45 men (range 10 to 700 employees supervised), served as supervisors an average of 7 years (range 1 year to 25 years) and worked on railroads an average of 28 years (range 5 years to 39 years). They supervised virtually every kind of operating personnel (for example, locomotive engineers, switchmen, conductors, yardmasters, etc.) and nonoperating personnel (for example, maintenance of way, machine operators, clerical, electricians, pipe-fitters, bridge and building personnel, crew dispatchers, inspectors, carpenters, welders, telegraphers, laborers, security police, etc.)

In addition to the medical, safety, and grievance or labor relations officers on each road, we interviewed 35 other railroad executives including managers serving as regional or divisional manager, vice president of personnel, director of police, manager of sales and service, vice president of operations, senior assistant chief of coal operations, director of administration, vice president of the executive department, chief mechanical officer, supervisor of communications and signals.

The 74 labor representatives we interviewed were from the United Transportation Union (UTU), Brotherhood of Railway and Airline Clerks (BRAC), Brotherhood of Maintenance Way (BMW), International Brotherhood of Electrical Workers (IBEW), Brotherhood of Locomotive Engineer (BLE), Transport Workers, Sheetmetal Workers, and the International Association of Machinists and Aerospace Workers (IAM).

We interviewed 38 general chairmen. They have served in that capacity an average of 4 years (range 1 month to 20 years), have worked on the railroads an average of 31 years (range 10 years to 40 years), and represent a total of 120,000 workers or more than half the workforce on the seven railroads. We also interviewed 36 local chairmen. They have been in their current position an average of 7 years (range 3 months to 25 years), have worked on the railroads an average of 27 years (range 1 year to 39 years) and represent a total of about 10,000 contract workers.

b. Sample

Although it would have been desirable to obtain information from all of the interviewers listed above or at least from probability samples of the groups large enough to make reliable quantitative estimates related to prevalence and costs of problem drinking, such a procedure was prohibitively expensive. We interviewed five occupants of each of these roles. In additions to being a few in number, the interviewees were <u>not</u> randomly selected. They were selected by Project REAP field staff working in concert with a project liaison officer appointed by each railroad. They were selected nonrandomly in ways expected to maximize the amount of information we were likely to get from a limited number of people. The liaison officer, typically a vice president, chose the top management and work supervisors; and a general chairman, typically one who has worked with the liaison officer or with the employee assistance program, chose the other general chairmen and the local chairmen.

The criteria for selecting these interviewees were that the individual had had experience with the railroads and knew about working conditions there and that he was willing to share his opinions about problem drinking on the railroad and about the employee assistance program. We specifically requested of the railroad's liaison officer that the interviewees not all be "friends of the employee assistance program."

Each railroad had zero, one, or several employee assistance program counselors distinct from the program director. These counselors were sometimes geographically spread throughout the railroad system. Because the counselors, more than any other individuals, have had close contact with a large number of problem drinkers on the railroad and because each counselor knows many of the strengths and the shortcomings of his or her own employee assistance program, the information which the counselors could provide was considered among the most valuable of the entire data collection effort. Therefore, Project REAP interviewed every counselor of every employee assistance program, as well as the program director (who in all but two cases served as a counselor). Because the amount of information which the director and the counselor could provide was so great and because it was thought to be so important, the interview guides for these individuals were substantially longer than any of the other interview guides.

c. Preparatory Visit

Prior to each data collection visit, the liaison team made a 2- or 3-day visit to each study railroad to explain what was needed for the visit and to reassure railroad personnel about what to expect during the visit. The trip followed letters and telephone calls reconfirming needs and appointments. As a result of these efforts, railroad personnel were generally well prepared for the data collection visit. All scheduled interviews, except one, were conducted.

d. Data Categories

All the interviewees were asked about their views on drinking problems, the drinking situation, drinking rules on railroads, and treatment services provided by their company's program. Individual categories of interviewees were asked questions about those dimensions of drinking about which they had special information or insight: for example, grievance officers were asked about the number and costs of alcohol-related grievances; safety officers were asked about injuries and accidents; medical officers about alcohol-related health problems, etc.

All of the study instruments are presented in a separate volume.

2.4.4 Order of Report

We sought four types of data through the administration of these instruments and from professional literature and have organized the rest of this report in accordance with these informational categories:

a. Drinking Practices and Norms (Section 3)

Drinking patterns of railroad workers on and off the job; rules governing drinking; workers' opinions about permissible drinking; and the practice of reporting and covering up rule violations by members of the work force.

b. Drinking Problems: Frequency, Impact, and Costs (Section 4)

Job-related drinking problems; the kinds, numbers, and costs of alcohol-related job problems that management and operating and nonoperating personnel have on individual roads. Off-the-job drinking problems: frequency and impact of familial, legal, safety, health, and other kinds of drinking problems.

c. Problem Drinking Railroad Workers (Section 4)

The definition and measurement of problem drinking; number of problem drinkers by job categories on individual roads; method for estimating number of problem drinkers on railroads that did not participate in the study; demographic, job-related, and drinking-related correlates of problem drinking.

d. Current Program Approaches to Problem Drinking (Section 6)

The environment in which programs began and continue to operate (context); resources committed by the company to the program (inputs); major activities carried out by program staff (services/functions); principal outcomes attributed to program (results).

3. DRINKING PRACTICES AND NORMS

Company officers, labor representatives, government officials, and railroad workers themselves are understandably concerned about the job-related drinking of railroad employees. Our investigation revealed these statistics for the year before the study.

Fourteen percent, or an estimated 32,000, of the 234,000 railroad workers employed by the study roads drank on duty an estimated 96,000 times.

Thirteen percent, or an estimated 30,000, drank at least once last year when subject to call.

About 5 percent, or an estimated 12,500, reported to work very drunk or got very drunk on the job.

Over 20 percent reported to work with hangovers.

Over 30 percent of exempt workers witnessed a violation of company drinking rules, but only a few workers ever reported such violations.

About 12 percent of contract employees and 6 percent of exempt workers covered for, or hid, a worker who was drunk on duty. On one road, 19 percent of the contract employees and 13 percent of exempt workers covered for an intoxicated employee.

Similar figures could easily be cited within different job classifications on individual railroads.

Solutions to these job-related drinking problems require an intensive examination of the drinking practices of railroad workers on and off the job and of the procedures through which railroad companies handle the drinking employee. The first half of this chapter will deal with the drinking practices of the railroad workers: the prevalence, frequency, and amounts of alcohol use; the prevalence and frequency of heavy drinking; and the prevalence and frequency of intoxication and binge drinking.

The second half of this chapter will concentrate on the disciplinary aspect of the railroad companies' methods for dealing with employees' job-related drinking including the content, employee awareness, applicability, and impact of company drinking rules; typical violations, detection patterns, and disciplinary procedures; the actual current enforcement of drinking rules; the personal standards on drinking held by workers; and the personal opinions of workers, managers, and labor representatives about current company drinking rules.

3.1 DRINKING HABITS OF RAILROAD EMPLOYEES

a. General Drinking Practices

About 75 percent of American male adults currently drink (Cahalan and others 1969; Johnson and others 1976). In our survey of 6,000 railroad employees, we, too, found that 75 percent currently drink. As we have seen,

work forces of the seven railroads employ about 235,000 workers and were surveyed with sample sizes ranging from 526 to 990. Table 3-1 shows the prevalence rates of drinking on each of the seven study railroads.*

TABLE 3-1. DRINKERS BY RAILROAD

Railroad	Percent Ever Drinkers	Percent Currently Drinkers
A	94	84
B	91	80
C	73	55
D	92	78
E	85	69
F	92	84
G	89	75
Weighted** Average	88	75

Considerable variation exists throughout the industry, however, since results on individual roads range from 55 to 84 percent.

Table 3-2 breaks these figures down into occupational categories. Exempt workers are all nonunion and mostly managerial-level employees. Operating personnel (ops) are union workers engaged in the operation of engines, trains, and yards. Nonoperating personnel (non-ops) are union workers engaged in other activities. (Of the three categories, exempt workers exceed the sample mean, but the others fall below it.)

When these prevalence figures are given for separate classes of workers by individual roads, as they are in Table 3-2, even wider differences become apparent. Differences are significant in the prevalence of drinkers among the railroads and among the occupational categories. More exempt workers drink than contract employees.***

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* A table for computing 95 percent confidence intervals appears in the Appendix A. Alphabetical designations of railroads are held constant.

** The weighted average is an average value taken across railroads where the value for each railroad has been multiplied by a factor equal to the relative number of employees of the railroad. The effect is to produce estimates which are based upon individuals and not upon railroads.

*** See Appendix A.

TABLE 3-2. CURRENT DRINKERS BY OCCUPATIONAL CATEGORY

Railroad	Exempt	Ops	Non-Ops	Weighted Average
A	88	83	82	84
B	84	78	80	80
C	64	54	52	55
D	87	73	78	78
E	78	72	65	69
F	87	89	82	84
G	88	72	72	75
Weighted Average	81	73	73	75

b. Frequency

Table 3-3 shows the frequency with which drinking workers drink by railroad (Part A) and by occupational category (Part B). These frequency rates indicate that railroad workers drink with regularity, since 82 percent drink at least once a month, more than half drink once a week, and over one-fourth drink three times or more a week. Ten percent report drinking every day. Equivalent figures for the national population are shown in Table 3-4. As Table 3-4 shows, daily drinking is as frequent among railroad workers as the general population. Males in the general population, however, are more likely than railroad workers to be daily drinkers. The same is true for drinking several times per week. Railroad workers are about as likely as males in the general population to be weekly drinkers, and railroad workers are more likely than males in general to be monthly drinkers. These results are shown graphically in Figure 3-1.

The road with the lowest percentage of drinkers, Railroad C also has the lowest frequency of drinking among drinkers. About the same percentages of workers from all three occupational categories drink at least once a week (exempt = 62 percent, operating = 62 percent, and nonoperating = 56 percent). A slightly higher percentage of exempt workers drink on a daily basis than do operating or nonoperating personnel.

TABLE 3-3. DRINKING FREQUENCY (OF DRINKERS) BY RAILROAD/OCCUPATIONAL CATEGORY

Railroad	At Least Once a Day	3 or 4 Days Per Week	1 or 2 Days Per Week	Once or twice Per Month	Less than Once Per Month
A	9	19	30	28	14
B	13	19	31	20	17
C	7	14	30	26	22
D	9	14	35	26	16
E	9	16	31	24	21
F	10	15	34	22	19
G	12	20	30	21	17
Weighted Average	10	17	31	24	18

Occupational Category					
Exempt	13	20	29	24	15
Ops	9	19	34	24	14
Non-Ops	10	15	31	24	21

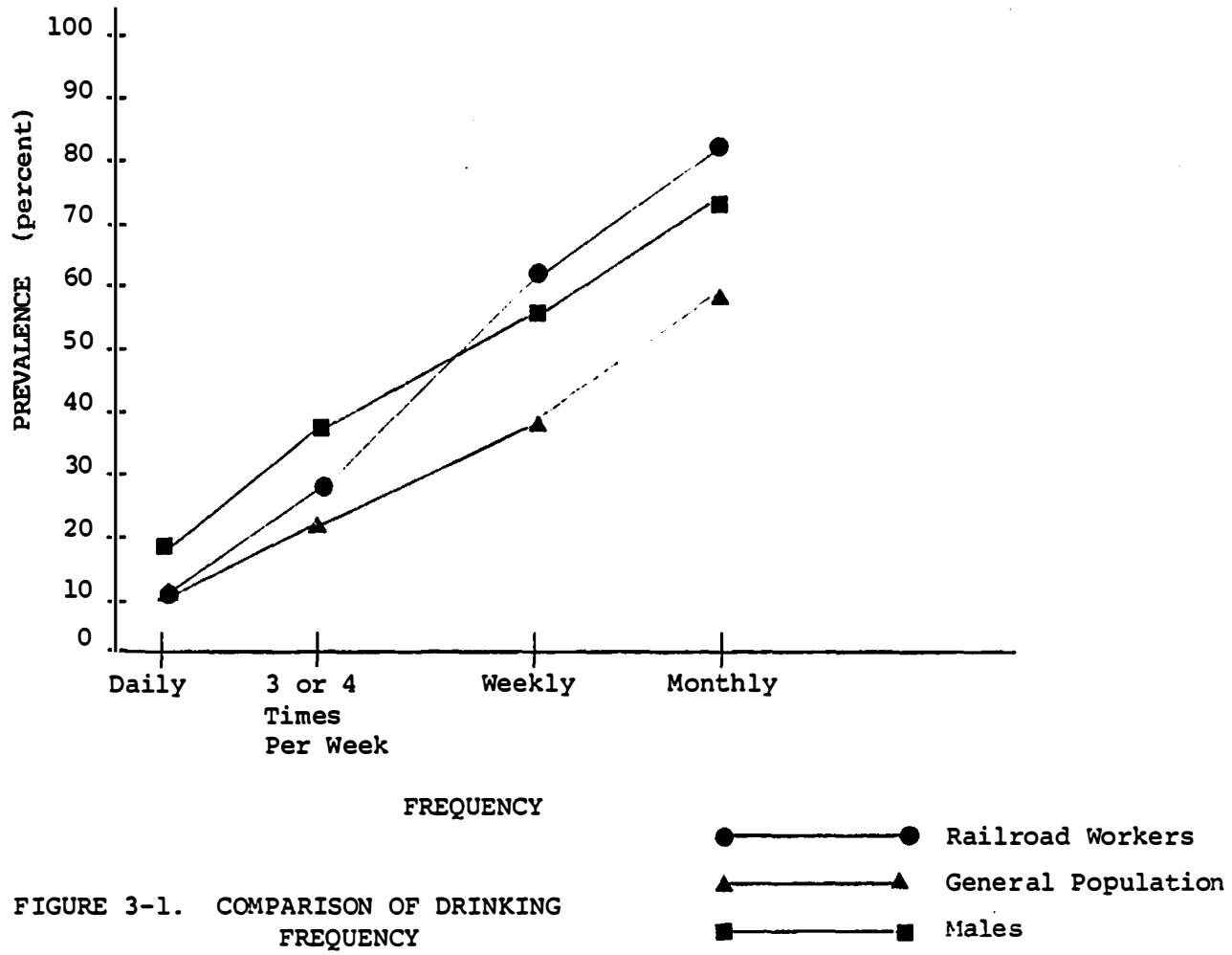

FIGURE 3-1. COMPARISON OF DRINKING FREQUENCY

TABLE 3-4. DRINKING FREQUENCY OF RAILROAD DRINKERS AND OF NATIONAL POPULATION

Drinking Frequency	Railroad Workers	General Population	Males in General Population
At least. . .			
Monthly	82	57	70
Weekly	58	38	54
3 or 4 times weekly	27	22	34
Daily	10	10	16

c. Amounts Consumed

Americans who drink drink an average of 19 ounces of ethanol a month.* Railroad workers who drink drink the same amount. Table 3-5 shows the average monthly alcohol consumption of workers in different jobs on individual roads.

In the aggregate, ops and non-ops drink about equivalent amounts, which tend to be about half again as much as the exempt workers drink. This ratio is not evident , however, in individual roads. In no case do exempt workers drink significantly more than contract employees, but on Railroads C and G they drink about equivalent amounts. Some railroad ops drink more than non-ops, but on other roads, the reverse is true.

*An ounce of ethanol is roughly equivalent to the amount of pure alcohol contained in two 12-ounce bottles of beer, two 4-ounce glasses of wine, or two 1½-ounce shots of whiskey. This estimate is based upon survey data. Data based on tax revenues would produce an estimate from 50 to 100 percent higher (HEW, 1979).

TABLE 3-5. MONTHLY ETHANOL INTAKE OF RAILROAD WORKERS IN OUNCES

Railroad	Exempt	Ops	Non-Ops	Weighted Average
A	11	20	13	15
B	8	12	19	14
C	9	9	8	8
D	9	15	17	15
E	12	13	12	11
F	12	23	14	16
G	12	14	13	13
Weighted Average	10	15	14	13

d. Regular Heavy Drinking

We also tried to find out the percentage of workers who regularly drink heavily and the percentage who drink heavily at least occasionally. Eighteen percent of American males drink at least 30 ounces of ethanol a month (Johnson et al, 1977). By contrast, only 11 percent of railroad worker drink that amount of ethanol each month. National estimates were obtained through personal interviews, but our data were collected through mailed questionnaires. Obtaining consumption data through our mailed questionnaires proved difficult. Almost one-third of our respondents did not answer the complex questions in this section, and some respondents may have misunderstood them. Our estimates of consumption, therefore, may be greatly underestimated. Table 3-6 shows according to our data, the percentages of workers on each railroad who drink more than 30 ounces of ethanol a month.

A regular heavy drinker* is defined here as one who drinks at least 30 ounces of ethanol a month (roughly either 60 12-ounce bottles of beer, 60 4½-ounce glasses of wine, 60 1½-ounce shots of whiskey or an equivalent combination of these beverages). This level was chosen for comparability to Johnson et al's national data. An episodic heavy drinker is defined as one who drinks at least 2.4 ounces of ethanol on a single day (roughly one six-pack, one fifth of wine, or four shots of whiskey).

Because of low response rates to this question, we cannot be sure of the accuracy of values in this table. We do note, however, that contract employees appear more likely to be regularly heavy drinkers than are exempt employees. Because of suspected low data quality, these figures were not subjected to statistical tests.

*The consumption of this amount of alcohol does not necessarily constitute heavy drinking or drinking that is excessive. This definition was chosen for comparability to the RAND (Johnson et al, 1977) definition of "heavier drinkers."

TABLE 3-6. PERCENTAGE OF REGULARLY HEAVY DRINKERS

Railroad	Exempt	Ops	Non-Ops	Weighted Average
A	9	21	9	13
B	5	13	12	11
C	6	6	5	5
D	6	11	18	15
E	6	10	10	10
F	9	21	13	14
G	7	12	12	11
Weighted Average	7	13	11	11

e. Occasional Heavy Drinking

We also tried to characterize drinking patterns of railroad drinkers by defining episodic heavy drinking as the consumption of at least 2.4 ounces of ethanol during 1 day at least once in the previous month. Table 3-7 shows the distributions of prevalence of this amount of drinking as well as those for twice this amount. Of the 71 percent of railroad workers who drank during the month before the survey, 64 percent had episodes of heavy drinking--(45 percent of the total sample). Twenty-eight percent of all drinkers--20 percent of the total sample--drank at least twice that amount on at least 1 day. (As with the previous section, these numbers may be underestimates.)

TABLE 3-7. PERCENTAGE OF DRINKERS CONSUMING AT LEAST 2.4 OUNCES AND AT LEAST 4.8 OUNCES OF ETHANOL IN ONE DAY IN THE PAST MONTH

	At Least 2.4 Ounces of Ethanol			At Least 4.8 Ounces of Ethanol		
Number of Days	At least one six-pack beer	At least one fifth wine	At least four shots whiskey	At least two six-packs beer	At least two fifths wine	At least eight shots whiskey
0	70	93	74	87	96	89
1-5	18	20	18	8	1	7
6-15	6	0.6	4	2	0.3	1
16-25	2	0.4	2	1	0.2	1
26-31	3	2	3	2	2	2

*Beer is calculated as 12 oz. servings of 4 percent ethanol, wine as 4 oz. servings of 12 percent ethanol, and distilled spirits as 1.5-ounce shot glasses of 40 percent ethanol.

Of all drinkers, 23 percent consumed 2.4 ounces at least 6 times during that month, while 9 percent consumed it on at least 26 days. These figures contrast strikingly with those who drank twice that amount (4.8 ounces). Three percent drank the greater amount at least 6 days that month, while 6 percent did so on at least 26 days.

To illustrate the distribution of heavy drinking, Table 3-8 shows how the 28 percent of drinkers who consumed 4.8 ounces at least once during that month are distributed among the study roads and occupational categories.

TABLE 3-8. PERCENTAGE OF DRINKERS CONSUMING AT LEAST 4.8 OUNCES OF ETHANOL ON ONE DAY AT LEAST ONCE IN PAST MONTH BY RAILROAD/OCCUPATIONAL CATEGORY

Railroad	Two Six-Packs Beer	Two Fifths Wine	Eight Shots Whiskey
A	14	5	15
B	14	3	9
C	9	4	10
D	16	3	18
E	15	3	9
F	11	5	12
G	15	3	8
Weighted Average	12	4	12

Occupational Category			
Exempt	5	2	7
Ops	16	4	14
Non-Ops	15	3	12
Weighted Average	12	4	12

Two six-packs of beer are sufficient when consumed in a 7-hour period* by a 170-pound person to raise the blood-alcohol content to .19, or almost twice the illegal level for driving in most states.

As Table 3-9 shows, 7 percent of drinkers consume at least 4.8 ounces of ethanol at least once a week, 1 percent almost daily.

*Average amount of time our respondents took to consume this quantity.

TABLE 3-9. FREQUENCY WITH WHICH DRINKERS DRINK AT LEAST 4.8 OUNCES OF ETHANOL AT ONE SITTING

Frequency	Percentage
Never	63
At least once per year	37
At least once per month	13
At least once per week	6
Almost every day or every day	1

In the month before the study, 11 percent drank 30 ounces of ethanol. Workers who drank one form of alcoholic beverage heavily on some occasion may also have been among those who drank another form heavily on the same or another occasion. The same kind of overlap is possible in episodic drinking. To make the data on heavy drinking more revealing, statistics on the prevalence and frequency of intoxication were calculated.

f. Intoxication

Our sample group, which tends to drink heavily, gets intoxicated fairly often. National studies show that 35 percent of American males get intoxicated at least once every 2 years. About two-thirds of railroad workers got intoxicated at least once in 1 year. Even with only half the time period considered, railroad workers tend to get intoxicated about twice as often as the national sample of males.* Table 3-10 shows how often they did so. Part A shows that railroad drinkers become intoxicated ("drunk" or "high") fairly often. Among all workers, 24 percent do so at least once a month; 14 percent at least every 2 weeks; 9 percent at least weekly; and 3 percent more often. The breakdown into job categories (Part B of Table 3-10), shows that 11 percent of ops become intoxicated once or more per week, 9 percent for non-ops, but only 3 percent of exempt personnel report doing so.

Intoxication lasting more than 1 day is defined as "binge" drinking. Cahalan et al (1974) showed that 1.8 percent of American males engaged in binge drinking during the last 3 years. Our study showed that 3 percent of the entire railroad sample had done so within the last year. Binge drinking then, is more common among railroad workers than among the male population as a whole. Table 3-11 shows the percentages of workers and the percentages of drinkers binge drinking, broken down by railroad and by occupational category. Both intoxication and binge drinking occur more frequently among operating personnel and nonoperating personnel than among exempt personnel.**

g. Summary

Of all railroad workers on the study roads 75 percent drink at least once a year. Individual railroads have prevalence rates of current drinkers

*(Walter Clark, SRG, personal communication, 1979)

**See Appendix A.

that range from 55 percent to 84 percent. More exempt workers drink on a daily basis than either operating or nonoperating personnel. Ten percent of railroad workers drink daily. Forty-eight percent drink at least once a week. Fifty-six percent drink once or twice a month. Sixty-two percent of exempt workers and operating personnel drink at least once a week. Fifty-six percent of nonoperating personnel drink at least once a week. The percentage of drinkers in the study roads is about the same as the percentage of male drinkers in the general population.

TABLE 3-10. PERCENTAGES OF DRINKERS WHO GET "DRUNK" OR "HIGH" BY RAILROAD/OCCUPATIONAL CATEGORY

Railroad	Never	Once per year	Less than monthly	Monthly	Every 2 weeks	Weekly	More Often
A	24	21	28	13	6	6	4
B	33	25	21	8	5	5	3
C	53	22	15	5	2	3	1
D	20	23	23	14	7	8	5
E	37	18	19	11	4	6	4
F	23	24	27	9	7	7	4
G	32	21	24	10	6	5	2
Weighted Average	32	22	23	10	5	6	3

Occupational Category							
Exempt	37	24	24	9	2	2	1
Ops	29	19	24	12	6	7	4
Non-Ops	31	22	22	10	6	6	3
Weighted Average	32	22	23	10	5	6	3

Our data indicate that the prevalence of regular heavy drinking among railroad workers is only about two-thirds of what it is among American males. This may be a serious underestimate, however. Our questions about occasional heavy drinking indicate that between 12 and 28 percent of drinkers on the study railroads have had the alcohol equivalent of two six-packs of beer in one sitting at least once in the past month. Whatever the case, railroad workers are still about twice as likely to get drunk as American males; about two out of three were intoxicated at least once in the past year. Railroad workers appear about twice as likely as American males to binge drink; about 3 percent binge drank last year.

TABLE 3-11. BINGE DRINKING BY RAILROAD/OCCUPATIONAL CATEGORY

Railroad	Percent of drinkers binge drinking	Percent of work force binge drinking
A	4	4
B	4	3
C	2	1
D	7	5
E	7	5
F	4	3
G	3	3
Weighted Average	4	3

Occupational Category		
Exempt	1	1
Ops	6	4
Non-Ops	4	3

3.2 JOB-RELATED DRINKING

To determine the extent to which drinking affects employee job performance, we calculated percentages of the work force observed exhibiting drink-related behaviors on the basis of interview responses, asked respondents to estimate percentages of on-duty drinkers among people of their rank, and asked respondents to calculate their own number of days of on-duty drinking. The latter two methods produced mutually consistent estimates, whereas both labor and management interviewees provided lower estimates. Table 3-12 shows the percentages of respondents' work groups that displayed specific drink-related work behavior during the past year.

While national estimates of the prevalence rates of most of these behaviors are nonexistent, SRG* was able to provide us with an estimate of the prevalence rate of getting "high" or "tight" on the job. This behavior includes our categories of getting slightly drunk and getting very drunk on duty. Since there is undoubtedly some overlap in the categories, our best estimate is that the prevalence rate of getting high or tight on the job among railroad workers is between 5 and 7 percent. The comparable figure for males in the general population is 1 percent.

* Walter Clark, SRG, personal communication, 1979)

TABLE 3-12. PERCENTAGE OF WORKERS SHOWING VARIOUS JOB-RELATED DRINKING BEHAVIORS AS REPORTED BY CO-WORKERS

Behavior	Percentage
Drinking on duty	12
Drinking when subject to call	13
Getting slightly drunk on duty	5
Getting very drunk on duty	2
Reporting to work slightly drunk	10
Reporting to work very drunk	3
Reporting to work with a hangover	20

Up to 13 percent of our sample were observed at least one time in the last year reporting to work either "slightly drunk" (10 percent) or "very drunk" (3 percent). Last year 20 percent reported to work hungover. During the same period, 12 percent were observed drinking on duty and at least 5 percent actually became drunk on duty.

Applying these results to the work forces of the seven study railroads, we estimate that about 28,000 workers out of 234,000 drank on duty at least once during the past year and at least 46,000 reported to work hungover. At least 12,000 of them became drunk on duty at least once during that period. Rough estimates of the prevalence of these behaviors in the entire American railroad work force amount to 56,000; 92,000; and 24,000, respectively.

Respondents also were asked how many workers of 20 like themselves drank while on duty. The resultant estimate is 13 percent, close to that based upon respondent's observations of their work groups.

Table 3-13 shows the percentages of workers observed drinking on duty on the study roads last year.

TABLE 3-13. PERCENTAGE OF WORKERS DRINKING ON DUTY BY JOB ON INDIVIDUAL RAILROADS

Railroad	Exempt	Ops	Non-Ops	Weighted Average
A	17	17	11	15
B	14	17	16	16
C	3	4	3	6
D	10	8	14	11
E	10	11	8	11
F	20	28	22	23
G	18	14	9	14
Weighted Average	12	13	12	12

Clearly the most visible of those violating company drinking rules are those who either come to work drunk or get drunk on the job. Table 3-14 shows the percentage of each occupational category on individual roads who either came to work drunk or got drunk while on duty at least once in the last year.

TABLE 3-14. PERCENTAGE OF WORKERS WHO CAME TO WORK DRUNK OR GOT DRUNK ON DUTY

Railroad	Exempt	Ops	Non-Ops
A	2	10	5
B	0.4	8	6
C	3	3	4
D	4	6	5
E	0.4	6	4
F	3	14	7
G	2	7	3

As Table 3-15 shows, supervisors and general chairmen provided lower estimates of the extent of drinking on duty than did respondents to the general survey. Local chairmen are marginally closer, but still provide a lower estimate of the prevalence rate.

TABLE 3-15. COMPARATIVE ESTIMATES OF WORKERS DRINKING ON JOB IN PAST YEAR

Railroad	Estimated by workers	Seen by workers	Estimated by supervisors	Estimated by general chairmen	Estimated by local chairmen
A	15	17	3	3	10
B	18	13	6	*	4
C	6	3	1	1	2
D	9	11	2	1	0.5
E	11	8	2	2	0.5
F	23	20	8	**	5
G	14	11	1	5	7
Weighted Average	13.7	11.9	3.3	2.4	4.1

* No numerical estimates offered. Opinions ranged from "no problem" to "tremendous problem."

** No estimates offered. Concensus was that it is a "rare problem."

Finally, workers were asked how many days out of 20 they usually drink on duty. Figures were adjusted to a yearly basis, calculated as a 260-workday year. Thet indicate that railroad employees who drink on duty do so on an average of 3 days during a year. Thus, among our sample of 234,000 railroad workers there were an estimated 84,000 incidents of on-the-job drinking last year on the seven studied railroads. Table 3-16 reports the self-reported drinking on duty by railroad and by occupational category.

TABLE 3-16. SELF-REPORTED DRINKING ON DUTY BY RAILROAD/OCCUPATIONAL CATEGORY

Railroad	Days per year per employee
A	4
B	4
C	0
D	1
E	2
F	7
G	4
Weighted Average	3

Occupational Category	
Exempt	5
Ops	2
Non-Ops	3

About 12 percent of non-ops both drink on duty and drink when subject to call. However, exempt workers appear more likely to drink on duty (17 percent) than when subject to call (12 percent). This difference is not significant. Operating personnel are more likely to drink when subject to call (22 percent) than when on duty (14 percent).* Assuming that railroad workers drink while subject to call at the same frequency they drink on duty (3 days per year), there were about 90,000 drinking rule violations on the seven railroads last year.

Summary

An estimated one out of every eight railroad workers drank while on duty during the past year. At least one in ten railroad workers reported to work drunk at least once last year. One in 20 got drunk on duty at least

*See Appendix A

once last year. One in five railroad drinkers came to work hungover at least once last year. On-the-job drinking rates run as high as 28 percent among operating personnel on an individual road. Even managers and labor officials who are close to the front-line underestimate the severity of on-the-job drinking and intoxication. Thirteen percent of workers drank at least once last year while subject to call.

3.3 DISCIPLINARY PROCEDURES

Because of their concern for safety, all study roads have rules governing the job-related drinking practices of their employees. Data relating to these rules appear in the following section which is divided into four parts: (1) the content and applicability of railroad company drinking rules, (2) violations and disciplinary procedures, (3) current enforcement, and (4) workers' personal standards on drinking and opinions on drinking rules. We gathered information about what these rules are like and how they work from our interviews.

a. Content, Applicability, and Impact

All seven study roads have rules governing the job-related drinking practices of employees. These rules prohibit: possession of alcoholic beverages while on duty or on company property; use of alcoholic beverages while on duty or subject to call; and being under the influence of alcoholic beverages while on duty or on company property.

According to these drinking rules, workers are not permitted to have alcoholic beverages in their possession while working, even when they are not on company property, or while on company property even when they are off duty. A contract worker is subject to call eight hours after completion of any tour of duty. A worker would be in violation of the rule if he drank after that rest period even if the normally scheduled tour of duty is not on that day. Management personnel, who are subject to call 24 hours a day on at least some of the roads, are technically in violation anytime they drink. Furthermore, the rules explicitly prohibit being under the influence of alcohol while working or while present on company property, but being under the influence of alcohol is not an acceptable reason for being absent from work on any of the roads.

Drinking rules differ on various roads. One road extends its drinking rules by prohibiting the possession and use of alcoholic beverages at facilities furnished or paid for by the company and at any time possession or use would subject the company to "criticism and loss of good will." Another road forbids the possession of alcoholic beverages while an employee is subject to call--presumably even in the employees' own home. Operating rules on two roads explicitly state that drinking rule violators are subject to dismissal. The other study roads have similar, but unwritten policies. The operating rule on one road includes a provision requiring operating personnel suspected of being under the influence of alcohol while on duty to submit to a blood test and/or urinalysis. Those refusing to take the test are subject to dismissal.

The clear intention of the rules is to forbid employees both from using or being under the influence of any substance that is likely to have a negative effect on their ability to do their jobs safely and effectively

while on duty, subject to call, or on company property and from possessing any such substance while on duty or on company property.

Ninety-four percent of the workers on the study roads are aware that their companies have rules regulating permissible drinking by employees. Ninety-five percent of the workers who are aware of these company rules think the rules apply to them, and, therefore, 10 percent of railroad workers are unaware of the rules or think that company drinking rules do not apply to them. This percentage is almost as high as the percentage of workers who drank on duty last year. All but 3 percent of the operating class think they are covered. Less than 80 percent of exempt workers consider themselves bound by the rules. Several reasons account for this variation in awareness. First is explicitness of rules: Operating personnel are all covered by operating codes that include an explicit drinking prohibition. Safety codes cover other workers but are usually thought of as being aimed most directly at nonoperating personnel. Exempt workers usually consider themselves covered only by implication or, on one road, not at all. Secondly, workers believe that the rule is needed mostly for safety. Avoidance of drinking is considered most necessary for safety among operating personnel, second among nonoperating personnel, and third, if at all, among exempt workers. Finally, is enforcement: The more likely the enforcement, the more workers are aware of the rule. Contract workers have more reasons to be aware of the rule than exempt workers.

Almost 90 percent of the workers on the study roads think that company rules keep employees from drinking on duty at least sometimes. Table 3-17 shows the effectiveness that employees think drinking rules have in keeping workers from drinking on duty.

TABLE 3-17. PERCENTAGES WHO THINK DRINKING RULES DETER

Railroad	At least sometimes	Rarely or never
A	90	10
B	85	15
C	94	6
D	91	9
E	88	12
F	81	19
G	89	11
Weighted Average	88	12

Among the occupational categories, exempt workers consider the rules to have the greatest deterrent effect. Nonoperating personnel think the rules have the least deterrent effect. Also, the railroads with the highest incidence of reported drinking on duty are the same railroads where workers think the rules are least effective.

b. Summary

All but one study road have implicit or explicit rules which prohibit all workers from drinking on duty and while subject to call. The one exceptional road does not prohibit exempt workers from drinking in most job-related situations. Out of 20 workers, 19 are aware of these rules, and of these 19 about 18 believe that the rules apply to them. Conversely, about 1 in 10 workers either does not know about antidrinking rules or does not believe that he is covered by the rules. Almost 9 out of 10 believe that the rules are at least sometimes effective in controlling employee on-duty and on-call drinking.

c. Violations and Disciplinary Procedures

Drinking rule violations occur in many places on and off company property. One supervisor said: "They drink wherever they can get away with it." This may or may not be the case, but some employees often drink at home or in bars before coming to work, on the road, or at the end of a run. Drinking can be common at away-from-home terminals or at lunchtime, especially when workers are allowed to eat off company property or when they are not closely supervised. Supervisors say that favorite on-property drinking spots include locker rooms, railroad cars, locomotive cabs, cabooses, shanties, washrooms, restrooms, and mailrooms. A popular drinking time and place on a commuter road is after rush hour in substations. Workers carry alcoholic beverages in a thermos bottle, lunch box, in their pockets or purses, or keep them in their offices. One supervisor indicated it was a common practice for workers like those under him to bury alcoholic beverages in the ground on company property or at stops along the tracks.

Based on their own experience, supervisors interviewed in this study tended to underestimate the percentage of employees breaking company drinking rules. They usually do not hear about the majority of rule violations. They say they often overlook suspected minor violations when infraction appear to be unprovable.

Ten percent of the exempt workers on the study roads violate the drinking rules themselves. Only a small percentage of the workers seen drinking by supervisors are suspended or fired, and a fair percentage of managers actively coverup for workers drunk on duty.

Supervisors say they generally find out about more flagrant rule violations by discovering employees drunk or hungover or by being informed by other employees or, on passenger lines, by customers. Supervisors noticed alcohol on the breath, slurring of words, unsteady gait or erratic behavior, possession of alcoholic beverages, and, least frequently, worker actually drinking. In the case of some employees who have serious drinking problems, supervisors initially noticed unexplained lapses in the way these employees did their work. For example, they were late regularly, did not do their work well or on time, and, in the case of office workers, were missing from their desks far more than their coworkers. A surprisingly large number

of interviewed supervisors said that they found out about serious and repeated drinking rules violations from other workers who said they were concerned about possible injuries and damage, personal liability for covering up, or extra work left undone.

Interviewees at all levels and from all study roads indicated that smaller percentages of exempt workers confronted for violating company drinking rules were dismissed than contract workers caught for breaking the same rules. Respondents indicated that this practice probably stems from rules being considered safety precautions necessary to avoid injuries, accidents, and damage. Exempt employees have far less opportunity to cause injuries or accidents than contract workers. In any event, exempt workers reported for violating drinking rules were more often demoted, suspended, or given assistance through alcoholism services, sometimes other than those offered by the company program.

Responses to our general survey showed that only 55 percent of supervisors would report first offenders and that supervisors report only a fraction of all observed violations. A common practice is to send workers home when they are noticeably affected by drinking. In those instances when supervisors decide they must take action against a contract worker in violation of the drinking rule, procedures vary among and often within roads.

d. Formal Disciplinary Procedures

The usual practice on all the roads is to remove drinking rule violators from service immediately. Firstline supervisors typically go to their superiors before taking a worker out of service. They call upon their supervisors or some other company officer to substantiate the charges at a disciplinary hearing. Decisions about whether or not to file formal charges are usually based on the seriousness of the incident, the provability of the charges, and the previous record of the worker with regard to drinking rule violations. Some union representatives and a few managers say these decisions are occasionally dependent in some measure on whether the alleged offenders are perceived as productive, cooperative, or likable by their supervisors.

e. Reaction of Confronted Rule Violators

The reactions of confronted rule violators are fairly predictable. Supervisors report that they almost invariably say they were not drinking. When caught red-handed or obviously under-the-influence, workers often confess, admit drinking but insist they did not drink enough to impair their work. When it becomes clear their protests are of no avail, the alleged rule violator will frequently ask for another chance or at least for lenient punishment. The majority taken out of service offer no resistance, although some are abusive and a few become aggressive enough to require removal by company police agents. Those who refuse to leave can be charged with insubordination, an offense that then makes them doubly liable to dismissal. Soon after their notice of dismissal, most seek the representation of their union representative. Some call a counselor at the company program to try to avert discipline or genuinely to seek help.

f. Immediate Actions After Removal from Service

On six of the railroads, reported drinking rule violators are investigated and, if found guilty, disciplined. Company rules on one road specify dismissal as the discipline to be assessed in such cases. The unwritten company policy on five roads is also to dismiss reported workers who are given a hearing and found guilty. One of the study roads allows drinking rule violators who waive investigation and progress in treatment to maintain their jobs, and to be carried on company records as "off on account of illness" until responsible company officers certify he is fit for service. Termination is considered only when a worker is unwilling to seek required help for his problem or fails to follow a prescribed treatment regimen. The pertinent section of this company's policy reads as follows:

> "To remain in the service of /railroad/ , employees with alcoholism and drug addiction problems are required to seek counseling and treatment. Every effort will be made to help employees to gain control of their problems. To this end, the company has engaged a counselor to whom employees with a suspected problem will be referred for counseling, diagnosis, referral for treatment and follow-up.
>
> "Individuals who are undergoing counseling and treatment for a drinking or drug-abuse problem will maintain an employement status with the company. Fitness for service will be determined by the department head on advice of the Medical Officer and the Program Counselor.
>
> "Employees who cannot perform duties safely and efficiently will be withheld from service and carried on company records as "off on account of illness."
>
> "Only when an individaul indicates that he is unwilling to deal with his problem through failure to follow an agreed-upon course of treatment will consideration be given to termination of his service with the company."

Three important features of this policy distinquish it from policy on other roads: (1) Employees are required to seek and accept specialized treatment under threat of job termination, (2) Employees who cooperate with, and progress in, treatment are not penalized, (3) Employee fitness to return to work is certified by the road's Medical Officer and the Program Counselor.

On this road, company policy requires that workers suffering from seriously debilitating drinking problems or from alcoholism, are, from the first instance of detection, not to be subjected to a punitive disciplinary process. This policy is consistent with company policies characterizing alcoholism as a disease since such a policy implies that sick people should be evaluated by trained specialists and subsequently be helped, not punished. The threat of an investigation and dismissal is intended to provide the company with leverage to get the sick employee into the program. However, this company policy is not consistently practiced--on occasion, first offenders are automatically dismissed.

In the policy statements of the six other roads, discipline is considered as a punishment and not as leverage to get workers into treatment. On these roads, some employees may continue to be penalized whether they do something about their problem or not. And, on these roads, workers may be reinstated after an often lengthy period of time, perhaps a year or two. On some roads, they may be reinstated without having addressed the problem that got them into trouble in the first place.

In summary, one railroad has a policy which allows supervisors to use threat of punishment as leverage to get problem drinking workers into the employee assistance programs. In this case, practice does not always follow policy. On the other railroads, company policy statements assign a punitive rather than therapeutic or educational function to the application of discipline in alcohol-related cases. At the present time, none of the roads have the consistent practice of using the threat of dismissal as a tool to foster remedial or restorative efforts by a rule violator guilty of a first offense.

g. Disciplinary Hearing

When the company decides to conduct an investigation, the employee is presented with specific charges and served with a formal notice of disciplinary hearing. Supervisors involved in the confrontation prepare witnesses and build their cases.

The rule violator usually contacts his local chairman for guidance and assistance. If he does not, the union will contact him and do whatever it can to get the worker reinstated. Local chairmen will sometimes try to get the dismissed employee to see a program counselor. He will intercede and request leniency. If all else fails, he will help prepare the worker's defense for his disciplinary hearing.

Disciplinary hearings are fact-finding investigations of alleged rule violations. They are usually conducted in an on-the-property office and are presided over by a local carrier officer; for example, a superintendent of an operating department, shop or an office. Collective bargaining agreements give the accused employee the right to a hearing and to be accompanied by his union representative, who can cross-examine all witnesses. At the first hearing, workers are almost always represented by their local chairmen.

In drinking rule violation cases, witnesses' descriptions of the effects of drinking are accepted as sufficient evidence to establish that the alleged violator was "under the influence." Evidence to the effect that someone witnessed the accused drinking is not necessary. The carrier is not obliged to present evidence beyond a reasonable doubt as required in criminal cases or a preponderance of evidence as required in civil cases. All that is required is substantial evidence--"relevant evidence as a reasonable mind might accept as adequate to support a conclusion." (International Railroad Police Academy,1975)

h. Assessment of Discipline

On the basis of the evidence presented during the investigations, the hearing officer, a company representative, decides whether and what kind of punishment to assess. Employees are reinstated when evidence is considered insufficient. On occasion, they are suspended when evidence exists but is not considered strong enough to survive the subsequent appeal that almost always follows an assessment of dismissal. On two roads, dismissal is sometimes held in abeyance if the rule violator is willing to participate in the company program. On another road, discipline after the first offense usually means

a 1-3 day suspension; after the second offense, a 15-30 day suspension, and after the third, dismissal--sometimes held in abeyance if the offender agrees to get help from the company program.

i. Grievance Process Within Company

Dismissed exempt employees do not have a formal medhanism through which to appeal dismissal for a drinking rule violation. In accordance with bargaining agreements, contract employees maintain a formal legal right to appeal the discipline assessed against them. Through his general chairman, a dismissed contract worker may appeal his case to a regional company official (for example, the Assistant Vice President of Operations). If this appeal fails, the worker has 60 days to continue his appeals up to the company's highest designated official, usually the Vice President for Labor Relations.

During these appeals, contract workers are generally represented by their general chairmen. As in the initial hearing, a company officer serves as presiding officer and judge. Procedures and rules of evidence too are the same as they are in the first disciplinary hearing.

j. Grievance Process Outside Company

After a contract worker is dismissed for a drinking rule violation, and has exhausted the grievance processes available to him within the company, he may appeal his case to the National Adjustment Board, or, by agreement with individual companies, to a Public Law Board. The Railway Labor Act grants jurisdiction over disciplinary cases to the National Adjustment Board. The Adjustment Board is made up of a company member paid by the railroad, a union representative paid by the union, and an arbitrator or independent member paid for by the National Mediation Board. The decisions of the management and labor members often result in deadlocks. Many cases are decided by the arbitrator's position.

Because of the heavy volume of cases presented to the National Adjustment Board, decisions often come only after several years of delay. In 1970, amendments to the Railway Labor Act permitted individual companies and unions to create Public Law Boards by agreement. Public Law Boards handle the backlog of disciplinary cases including drinking rule violation cases as extensions of the National Adjustment Board. These Boards are constituted along the lines of the National Adjustment Board: one carrier representative, one labor representative, and an independent member. To ensure prompt decisions, two of the largest railroad brotherhoods, the United Transportation Union (UTU) and the Brotherhood of Locomotive Engineers (BLE) are now handling most of their disciplinary appeals through Public Law Boards.

k. Avoidance of Final Appeal Outside Company

In practice, agreement employees and their union representatives appeal to the National Adjustment Board or to a Public Law Board only as a last resort. Once a decision to dismiss an employee is sustained by either kind of Board, the worker loses all rights to reinstatement on the road where he was employed. The unwritten policy on other railroads is not to hire a worker who has appealed his dismissal to these appeal boards. A decision by the Board to sustain dismissal means an end to a contract worker's railroading career. Dismissed employees and their union representatives therefore usually prefer to seek reinstatement through informal

appeals for leniency and through participation in treatment (even if these actions mean a lengthy period of unemployment) than to chance a decision by a Board that precludes the possibility of subsequent reinstatement.

l. Decisionmaking Throughout Appeal Process

A review of over 250 cases submitted to these various boards in the last ten years indicates the same rather straightforward decisionmaking process described by labor relations officers and followed at disciplinary hearings on all seven study roads. Almost always, the crucial question at issue was whether the evidence indicated that the employee had broken the letter of the rule or not. In most cases, the questions never arose as to whether the employee's culpability was lessened or rendered nonexistent by an incapacitating illness like alcoholism. Typically, the carrier simply presents evidence to the effect that the rule was violated. In defense, union representatives attempt to refute the evidence or to obtain a dismissal of the charges on the grounds of a defect in due process.

In several recent board cases where the rule was violated by a diagnosed alcoholic, claims for reinstatement have been sustained, on the grounds that the employee was a victim of a disease not then in remission which disabled him from abiding by the rule. In these few cases where employees were reinstated because their alcoholism exculpated them from responsibility, payment for time lost from work during the appeal was not granted. Consequently, even in those few cases when the boards have acknowledged that a drinking rule violator was alcoholic and therefore not responsible for willfully breaking the rule, the boards made him pay punitive damages in the form of noncompensation for lost time.

m. Discipline and Company Policy on Alcoholism as Disease

All of the study roads have policies which recognize alcoholism as a disease. However, on all but one of the seven railroads, the implications of this posture do not seem to be fully applied in the enforcement of drinking rule violations. A problem drinking employee is punished for violating a rule he may have found unusually difficult to keep because of his condition. The opportunity to use threat of job loss as pressure to coerce workers to seek help is lost. And some workers who make no effort to rehabilitate themselves are returned unchanged to the work force after a period of punishment that is, from a therapeutic point of view, wasted.

With the support of the medical profession, Federal and State governments now recognize alcoholism as a treatable disease. Many companies have developed policy statements which are consistent with this position. Drinking rules and their threatened enforcement can be used to motivate problem drinkers to seek help. Such an approach is more in line with the purpose of the rule than is punishment pure and simple.

n. Current Enforcement

The reporting of violations and the enforcement of rules is slight. Our sample population indicated that 10 percent of workers reported to work drunk, 14 percent drank on duty, and 13 percent drank when subject to call. These violations add up to an estimated 174,000 incidents, 90,000 of which involved on-duty drinking. Thirty-five percent of our sample witnessed violations at least once in the past year and 20 percent know someone whose supervisor witnessed a violation at least once in the past year.

Nevertheless, in 1978 only an estimated 900 disciplinary notices were served. About two-thirds of these cases were handled in nonofficial ways. Actual investigations were involved in only 384 of these cases. All but one of these 384 cases resulted in dismissal. A very small percentage then--0.004 of on-duty drinking violations--lead to the prescribed judicial process and prescribed outcome.

Table 3-18 shows the percentages of workers witnessing violations of drinking rules.

TABLE 3-18. PERCENTAGE OF WORKERS WITNESSING VIOLATIONS OF DRINKING RULES BY RAILROAD/OCCUPATIONAL CATEGORY

Railroad	Percent Witnessing Violation
A	36
B	47
C	12
D	30
E	28
F	60
G	36
Weighted Average	35

Occupational Category	
Exempt	31
Ops	34
Non-Ops	36
Weighted Average	35

The relatively constant level of reporting in Table 3-21 shows that reporting is only minimally related to the frequency of drinking on any road. The likelihood of knowing a reporter may be limited by the size of the work group (which is also relatively constant across railroads) rather than defined by the frequency of rule violations, which varies by railroad. Also, as Part B of Table 3-21 shows, non-ops are much less likely to know a reporter. Exempt workers are four or five times as likely to report a violator.

"Covering up" (or hiding a rule violator) is a common method of dealing with an observed violation. Table 3-19 shows 12 percent of workers covered for a worker who was drunk on duty during the past year. Operating employees were almost twice as likely as nonoperating employees and were over three times as likely as exempt workers to hide a drunken coworker. This may be due to the greater enforcement of the drinking rules which is directed toward operating crafts employees.

TABLE 3-19. PERCENTAGE OF WORKERS WHO HAVE COVERED FOR DRUNKEN WORKER IN PAST YEAR

Railroad	Exempt	Ops	Non-Ops	Weighted Average
A	7	26	10	15
B	7	22	14	15
C	3	9	3	5
D	5	18	13	13
E	5	16	6	9
F	13	31	16	18
G	6	19	9	12
Weighted Average	6	19	10	12

TABLE 3-20. PERCENTAGE OF WORKERS KNOWING EMPLOYEES WHOSE SUPERVISOR SAW THEM DRINK ON DUTY LAST YEAR

Railroad	Percentage
A	24
B	29
C	13
D	21
E	19
F	38
G	22
Weighted Average	23

TABLE 3-21. REPORTING OF RULE VIOLATIONS BY RAILROAD/OCCUPATIONAL CATEGORY

Railroad	Know reporter	Personally reported
A	46	12
B	46	14
C	49	14
D	47	12
E	41	8
F	40	8
G	41	11
Weighted Average	45	11

Occupational Category		
Exempt	53	28
Ops	55	6
Non-Ops	37	7
Weighted Average	45	11

TABLE 3-22. DISPOSITION OF RULE VIOLATORS WHOSE VIOLATIONS WERE WITNESSED BY SUPERVISORS

Railroad	Nothing	Dismissed	Suspended	Record marked	Boss yelled	Union got worker's job back	Referred to EAP
A	37	29	16	7	8	11	49
B	38	20	30	14	15	24	26
C	32	39	25	7	4	16	51
D	33	6	14	10	15	5	78
E	37	28	25	14	11	11	16
F	40	6	20	15	29	13	34
G	41	33	28	12	8	20	22
Weighted Average	37	22	23	12	14	15	37

Twenty-three percent of our sample know at least one person who had been seen by his or her supervisor drinking on duty at least once during the past year. Table 3-22 shows what happened to the last person whom the respondent knew who had been seen. Since it is possible (and in some cases even required) that more than one of these events could happen to the same person as a result of the same incident, the percentages for each railroad total more than 100 percent.

At first glance, this table might seem to indicate that more than 384 workers (the number reported in other sections of this report) were dismissed during 1978 for drinking violations. Closer examination reveals that this is not necessarily the case. Twenty-two percent of the observed violations resulted in dismissals. However, 15 percent of them resulted in reinstatement through union action, for a net dismissal rate of 7 percent. These 7 percent are cases known to the 23 percent of the work force which saw supervisors observe violations, yielding an estimate of 1.6 percent of the work force knowing of a violation which led to a dismissal in the past year. Based upon a work force of 234,000, this represents an estimated 3,744 known workers, or about ten times the actual frequency of dismissals. Remembering that 3,744 is not the number of violators but the number of people who know a violator, and bearing in mind that the same violator and incident are undoubtedly known to more than one respondent, this number corresponds very well with the average work group size of 11. In other words, if the other members of a work group knew about the violations, we would obtain estimates almost exactly the same as those in Table 3-22.

Several items are important to note in the table. In over one-third of these cases, nothing happened to the individual whose supervisor observed the rule violation. The supervisor took no action either to discipline or to help the worker.* This percentage is constant across the railroads and indicates a general reluctance, reported elsewhere in the report, among supervisors to enforce the rules on drinking.

Another element in Table 3-22 is the high percentage of cases that led to suspension and/or dismissal. Other data in this study indicate that these are unlikely consequences of drinking rule violations. These relatively higher numbers are due mainly to the fact these cases involve drinking which was "more public." Because it was widely known, the infraction may not have been as easy to overlook.

A large percentage of those who were either suspended or dismissed got their jobs back through union action. Since this question asked only about infractions in the past year, it is possible that all grievance proceedings had not been concluded and that the percentage who were reinstated would go much higher.

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*This conclusion may have to be softened somewhat. On Railroad D, if one adds the percentages to whom nothing happened and the percentages who were sent to the EAP, the total exceeds 100 percent. Apparently on this railroad, at least, some workers associate attendance at the program with "nothing happened," in the sense that if the client attends the EAP, no disciplinary action is taken. Hence, in the case of this railroad, there is no contradiction in indicating both that nothing happened to the individual and the individual went to the EAP.

Perhaps the most interesting part of Table 3-22 is the right-hand column which indicates the percentages of violators who entered the company employee assistance program. Great variation occurs among the railroads in the percentage of violators who enter treatment. Only 16 percent of the violators on Railroad E are referred to the EAP, but almost 5 times that figure are referred to the program on Railroad D. Railroad D is the only road which has such referral as a formal part of its policy statement on handling drinking rule violations, and it appears from this data that the program is being utilized for the assessment of rules violators problems much more effectively on this railroad than on any of the others.

About 3.5 percent of all disciplinary actions which reached the Labor Relations Offices on all the study railroads resulted from drinking rules violations. The 384 reported violators were all ops and non-ops. No exempt personnel were on record for disciplinary actions of any sort. Exempt workers by definition are not represented by labor organizations and therefore would not have cases pursued through the Labor Relations Office. Sixty percent of alcohol-related disciplinary actions were taken against ops, who constitute 31 percent of the work force. Forty percent of these actions were initiated against nonops, who represent 49 percent of the work force. This discrepancy is highly significant statistically and supports the information supplied by our interviewees that operating crafts employees are more likely to be charged with rule violations than nonoperating crafts employees. This result must be considered in light of the findings, however, that although ops are not significantly more likely to drink on duty (Table 3-13), they are more than twice as likely to get drunk on duty (Table 3-14).

All but one of the 384 reported violators were dismissed. According to the Labor Relations officers on the seven roads, grievances were filed by the union on behalf of all 384, a standard practice by the brotherhood. About 260 of these cases were appealed to the regional level, and the remainder were resolved through local chairperson's appeals to a local superintendent.

Only 3 percent of disciplinary actions for drinking were appealed to the National Adjustment Board or Public Law Board. On five of the seven roads, such appeals have become virtually nonexistent: since decisions by the boards are final, union representatives are reluctant to make such appeals where employee assistance programs are available.

The estimated number of violations of the drinking rules were calculated for each railroad based upon the number of days per year general survey respondents reported drinking on duty. The percentages of these rules violations which are actually prosecuted to the level of the Labor Relations Office are shown in Table 3-23. Even if these numbers are multiplied by a factor of 3 to allow for the greater number of cases which are settled at the level of the superintendent and local chairperson, only on 1 railroad are even 10 percent of the estimated number of violations formally charged.

An estimated 174,000 violations occurred in the last year, of which only about two-tenths of 1 percent resulted in charges which reached the Labor Relations Officer. Although many of these violations probably go unseen, survey data tell us that many of them are seen. The failure to charge known violators is probably due to many factors including the effort involved, norms of the work place, friendships, and most importantly, the potential severity of the punishment for the infraction.

TABLE 3-23. PERCENTAGE OF RULES VIOLATIONS

Railroad	Percentage of Violations Charged
A	0.27
B	0.19
C	2.32
D	4.08
E	1.23
F	0.16
G	0.11

As regards the severity of punishment, Table 3-24 shows the official policies and practices of the seven study roads towards proven violators of the drinking rules.

TABLE 3-24. REINSTATEMENT OF DRINKING RULE VIOLATORS

Railroad	Policy on time out of service before Reinstatement	Practice	Qualifications
A	Minimum of 8 months	8 months off	No reinstatement without program certification of readiness
B	No set policy	30 days off	Program recommends return
C	6 months to 1 year or even even longer	6 months to 1 year or more	No reinstatement without program certification of readiness
D	No set policy	2 months off	No reinstatement without program certification of readiness
E	Minimum of 18 months	1 year or more off	Program recommends return
F	No set policy	1st offense 15 days 2nd offense 30 days	Program recommends return
G	No set policy	varies	Program recommends return

o. Summary

Despite the fact that 35 percent of the work force studied witnessed drinking rules violations in the past year, formal charges for drinking rules violations were rare. Less than 1 percent of the estimated number of violations were charged. Twenty-five percent of the workers know at least one employee whose supervisor saw him drink during the past year. Forty-five percent claim to know the reporter of a rule violation and one out of nine indicate reporting a violation themselves. Since a much smaller number of formal charges were filed, we conclude that the officially prescribed system for dealing with such violations is not widely used.

3.4 WORKERS' PERSONAL DRINKING STANDARDS AND OPINIONS OF RULES

The majority of railroad workers have stringent personal standards about situations where drinking or drunkenness are permissible off the job; hold personal standards about permissible on-the-job drinking that are, with several notable exceptions, consistent with company rules; believe that exempt workers are treated more fairly than contract employees under existing rules; and reject the unqualified practice of automatic dismissal for drinking rule violations.

a. Personal Standards for Off-the-Job Drinking

The following table shows that 75 percent of workers think that drinking is acceptable in at least some social situations as long as it does not involve drunkenness. Some will tolerate drunkenness on those occasions.

TABLE 3-25. PERCENTAGE ACROSS ROADS WITH DIFFERENT DRINKING STANDARDS FOR RELATIVELY PERMISSIBLE SOCIAL SITUATIONS

Activity	No drinking	1 or 2 drinks, not high	High not drunk	Drunk is OK
Watching football game on TV	15	47	28	10
Wedding reception	13	43	37	12
New Year's eve party	13	27	42	19

But concerning drinking before driving, more than two-thirds of workers believe no drinking is allowable and 97 percent hold views consistent with laws on legal intoxication and with facts about the usual effect of alcohol on driving ability.*

*Ability to drive is usually not affected until one's blood level concentration is at 0.06, a level reached when three unoxidized drinks remain in the blood stream. (DHEW, 1974)

TABLE 3-26. PERCENTAGE ACROSS ROADS WITH DIFFERENT STANDARDS FOR DRINKING BEFORE DRIVING

No drinking	1 or 2 drinks, not high	High not drunk	Drunk is OK
67	30	3	0.2

Most railroad workers hold moderate views about drinking in relaxed social settings and strict views about permissible drinking in circumstances requiring full powers of alertness and concentration.

b. Personal Standards for On-the-Job Drinking

Respondents also were asked to give their personal standards about job-related drinking for:

1) Any employee

On the way home when not driving
At birthday parties on and off company property during working hours
At retirement parties on and off property during working hours.

2) Clerks, shop workers, ticket agents, locomotive engineers, conductors, maintainence-of-way crew, salesmen with customers at lunch on and off company property, and before coming to work.

3) Officer in the office, shop worker in the shop, or maintenance-of-way worker on the track alone while on duty.

4) Locomotive engineer on a locomotive, a clerk at a desk, a conductor, or ticket agent while on duty.

5) A conductor of a train on a layover at a terminal.

A principal axes factor analysis was performed on the data to determine the factors that determine whether and how much drinking is allowable for different kinds of workers in different kinds of on- and off-the-job-related situations. *

*The six factors extracted accounted for 76 percent or over three-fourths of the variance in the original set of 41 situations. Accounting for this much variance is quite good. Having extracted the six factors, we rotated the matrix to improve interpretability according to the varimax rotational scheme (e.g., Rummel, 1970).

Workers consider the following factors in determing if it is all right to drink or not:

a) If one is on duty.

Workers say four to one that on-duty drinking should not be permitted. Workers think of themselves as on duty when eating lunch on company property.

b) If one is subject to call.

Four out of five workers say one should not drink when subject to call.

c) If one is on company property.

Workers think it is more permissible to drink off company property than on company property regardless of whether one is on or off duty. Although one out of two workers think it is permissible for a salesman to have a drink with a customer off company property, nine out of ten think a salesman should not do so on company property.

d) If the drinking situation is not related to work.

Almost nine out of ten workers consider social settings totally unrelated to work situations acceptable occasions for drinking. Two out of three think it is acceptable to drink on the way home from work.

e) If the work-related drinking situation involves a party.

Workers think parties are exceptions to company rules about drinking, and drinking is permitted at them off and even on company property, even during working hours. Workers do not consider these true social occasions as a factor; however, drinking is to some extent curtailed.

f) If train operators such as conductors and engineers are on a layover at a terminal.

Almost one out of two workers think train operators should be able to drink at away-from-home terminals.

Of the five job-related situations mentioned above, workers had strict standards in this descending order: on duty, lunch on property, before work, parties on property, and layovers.

In these five job-related categories, managers are slightly more strict than non-ops and non-ops are slightly more strict than ops. The only instances in which operating personnel were noticeably more permissive than management and the non-ops was in the case of engineers and conductors drinking before work and at lunch off property and on layovers. The only time management was more permissive than either the ops or non-ops was in the case of salesmen drinking off company property with a customer.

c. Workers' Opinions about Enforcement of Drinking Rules

A sizable percentage of those who violate drinking rules are observed by fellow workers and supervisor. Despite the possibility of dismissal for failure to report, only a small percentage of workers report rule violators. Only 384 rule violators, probably less than 1 percent of those breaking rules, were investigated in the past year, and all except one of these violators were dismissed. Drinking rules are seldom enforced, but when they are they are enforced strictly. Current reporting and disciplinary practices do not touch the vast majority of rule violators. Why then do large numbers of workers violate rules with impunity and large numbers of supervisors fail to report violations? What can be done to enforce practices to reduce on-the-job drinking and increase the reporting of observed violations?

Workers were asked whether drinking rule violators should be fired always, sometimes, or never. Table 3-27 gives their responses to this questions. The first column of figures indicates the percentage of workers who feel that drinking rule violators should always be fired. The second column shows the percentage who think that the workers should not be fired or should be fired depending on the circumstances; the third column shows the percentage of respondents who feel that drinking-rule violators should never be fired. The table has two parts. Part A shows the breakdown by railroad. Part B shows the breakdown by occupational category.

Only small percentages ranging from 7 percent to 19 percent think that workers should never be fired for drinking on the job. Most workers think that violators should be dismissed under some circumstances but be retained under others.

When one adds the percentages that say "never fire" to those that say "fire sometimes," a majority of workers on all railroads except C favor abandoning automatic dismissal for drinking violations. When one adds these same two columns in Part B, a majority of each occupational category also favors doing away with blanket dismissals. Higher percentages of exempt and operating personnel favor universal dismissal than percentages of non-operating personnel. Conversely, higher percentages of nonoperating personnel say "never fire" than percentages of operating personnel, and higher percentages of ops do so than exempt workers.

When asked if they personally would report violators if they were going to be dismissed, even fewer workers said they would do so in every case than did when they were asked about the reporting violations in the abstract. Only one in three exempt workers said they would personally report a violator under those circumstances. One out of six operating and nonoperating personnel said they would do so.

Workers' willingness to report violations rises sharply with the possibility of damage and steadily as the cost of possible damage increases. Their willingness to report rises even more markedly when there is a chance of personal injury.

Table 3-28 shows the conditions or potential consequences under which the respondents say they report a coworker for drinking. As consequences become more serious, the percentage of railroad workers saying they would report somebody who might produce that consequence increase. Again figures vary among railroads and among the occupational categories. In particular,

TABLE 3-27. RESPONSES TO DRINKING RULE VIOLATIONS BY RAILROAD/OCCUPATIONAL CATEGORY

Railroads	Fire Always	Fire Sometimes	Fire Never
A	31	61	8
B	31	61	8
C	52	41	7
D	18	63	19
E	46	45	9
F	13	71	15
G	49	41	10

Occupational Category	Fire Always	Fire Sometimes	Fire Never
Exempt	40	56	5
Ops	40	51	8
Nonops	33	54	13

among the occupational categories, exempt workers appear much more likely to report drinking workers for violations for minor offenses. Also, exempt workers consider making a bad decision a more serious consequence than either the operating crafts or nonoperating crafts workers. In most cases the consequences of exempt workers' decisions can be more detrimental to the company in the long term. A similar number of workers would report a worker who caused serious damage as those who would report a worker that made a bad decision.

Workers were asked which if any of seven factors ought to affect whether or not an employee is fired for drinking on duty. Table 3-29 shows the factors which workers think ought to be considered and the range of percentages of workers selecting each consideration.

TABLE 3-28. PERCENTAGE WHICH WOULD REPORT VIOLATION WHEN THERE IS DANGER OF DAMAGE, INJURY, OR BAD DECISION BY RAILROAD/OCCUPATIONAL CATEGORY

Railroad	Damage Less Than $50	Damage $50 - $500	Damage Over $500	Injure Self	Injure Another	Kill Self	Kill Another	Make A Bad Decision
A	50	67	76	83	94	94	96	79
B	52	70	78	84	93	92	94	82
C	72	84	88	92	97	96	98	90
D	44	63	72	87	95	93	96	75
E	52	69	77	86	94	94	96	82
F	35	53	62	74	91	90	93	74
G	55	72	79	88	94	94	96	82

Occupational Category	Damage Less Than $50	Damage $50 - $500	Damage Over $500	Injure Self	Injure Another	Kill Self	Kill Another	Make A Bad Decision
Exempt	77	91	94	93	98	98	99	92
Ops	44	59	68	82	91	91	94	77
Non-Ops	48	68	75	84	94	93	95	80

TABLE 3-29. PERCENTAGE THINKING SELECTED FACTORS OUGHT TO BE CONSIDERED IN DISMISSING VIOLATORS

Willingness of problem drinker to enter treatment (79-89)
Previous record of violations (67-76)
Injuries inflicted (58-77)
Damage caused (55-71)
Person's job (48-58)
Family needs (39-49)
Seniority (38-49)

Each of the individual railroads ranked these factors in the same order. Operating personnel and nonoperating personnel also ranked these factors in exactly the same order. Managers ranked the first five factors in the order of their appearance above but ranked seniority in sixth place slightly before family needs. The consistency of these views is noteworthy.

Respondents were asked whom they thought was treated most and least fairly by the drinking rules. Between 60 and 80 percent of the respondents on all of the railroads thought that everyone was treated equally under the rules. However, when those who thought treatment is equal are eliminated from the analysis, the responses show that both exempt workers and contract workers agree almost unanimously that exempt workers are treated more fairly than contract workers under the rules. Those who believe that the application of the rules is not equal, believe that the exempt workers by far receive the best treatment and that ops get better treatment than non-ops. This is true on all roads except Railroad F where the ops are perceived to receive worse treatment than non-ops.

3.5 LABOR/MANAGEMENT VIEWS ON DRINKING RULES

The local and general chairmen interviewed in this study consider drinking rules a necessity. They complain, however, that the rules are not uniformly enforced across occupational categories, rules are not consistently enforced by supervisors within occupational categories, rules are unrealistic because they are too strict in what they prohibit, and the punishment of dismissal for violating the rules is too severe in some circumstances.

Almost all labor interviewees thought rules should apply as much to management as to labor. Not only do they believe the same rules should apply to all, but enforcement and policies on case disposition should be the same for the three major classes of workers. As one operating worker opined: "If them that make the rules can't keep'em, why the --- should I?" Virtually all the general chairmen said that different unions were treated similarly under the rules.

Whether anything is done and what is done after a rule violator is confronted is up to the individual supervisor. Many transfer the violator from the property, rather than cite him. Some supervisors tolerate drinking when the involved employee is a hard worker or personally liked. Sometimes, a supervisor will use the rule as a tool against an employee.

On one road especially (to a lesser extent on others), labor representatives thought the rules forbade too much and were therefore unrealistic and unenforceable. As one general chairman said; "I really don't know how you would ever stop a man from having a beer with his lunch. And having one drink is far from a guy being an alcoholic or getting drunk on the job."

All labor representatives questioned whether dismissal is a just punishment for drinking rule violations in every instance. Many thought it too severe for first offenders, and inappropriate and possibly counterproductive for a worker with a serious drinking problem. On at least one road, firing a first offender with a problem is now seen as reneging on the promise workers perceived in the establishment of the company program.

Managers generally recommended changes in an existing rule only if the change would strengthen or clarify it (for example, specify an exact time before duty during which abstinence would be required). Several managers called for predicatable sentencing. A few suggested the use of the threat of punishment as a tool to get the problem drinker into treatment.

Labor's suggestions followed their criticisms. Chairmen suggested managers be explicitly bound to the same rules and that they be enforced. Such an action, a few thought, would eliminate the common rationalization of contract workers: "Well if they can do it, so can I." Chairmen also asked for consistent application and punishments more in line with the severity of violations. They strongly opposed inflexible minimum periods of dismissal before reinstatement could be considered. Although several complained that the rules forbade too much (for example, a beer with lunch), no one suggested changing the rules to permit, explicitly, certain kinds of drinking.

Summary

About nine out of ten workers on the study roads find drinking acceptable in at least some situations some of the time. About one-tenth say that on these occasions, it is sometimes permissible to get drunk. Most railroads workers, however, do not feel it is acceptable to them personally to drink on duty or on company property. Their feelings agree with company drinking rules.

About two-thirds do not approve of blind enforcement of the rules, however. Although about a tenth feel that drinking rules violators should never be fired, almost half think that the rules violators should always be fired, and over half feel that extenuating circumstances should be considered in the application of the rule. Sometimes violators should be dismissed and other times they should not. The great majority of workers would not report a violation if they thought a coworker might be dismissed. Factors to be considered in the decision were consistent across railroads and occupational categories. The two most important are the willingness of the violator to accept treatment, if necessary, and the violator's previous record of infractions.

About two-thirds of the railroad workers thought that everyone was treated fairly (even if not equally) by the drinking rules. The other third felt that exempt workers received better treatment than contract employees.

All interviewees considered drinking rules necessary although many suggested modifications to the current rules, including uniform application, incorporating a phrase about treatment in lieu of punishment, and lessening and/or explicitly stating the punishment. Only a few favored changing the rules to permit certain types of drinking (for example, drinking at lunch).

4. DRINKING PROBLEMS: FREQUENCY, IMPACT, AND COSTS

This chapter discusses the frequency, impact, and where possible, the company-incurred costs of problems associated with railroad workers' drinking, including those of drinkers who are problem drinkers.

Among railroad workers some drinking problems occur on the job and some occur off the job. Some workers drink repetitively and excessively. Their use of alcoholic beverages is regularly and directly linked to causing private or public harm and to causing difficulties in one or more important aspects of life. A drinker who drinks excessively and whose drinking repetitively causes harm to himself or others is called a problem drinker. This category of drinkers includes the alcoholic or addicted drinker. Chapter 5 explains the method used in this study to define and estimate numbers of problem drinkers and provides estimates of the prevalence of problem drinking on individual roads by occupational category. Other drinkers experience difficulties in connection with their drinking although the problems they experience are relatively infrequent, unpatterned, and episodic.

4.1 JOB-RELATED PROBLEMS

Almost without exception on all the roads studied, every manager and labor representative interviewed said that drinking posed serious problems for workers and for the company. Some suggested that although drinking problems are frequent today, things were far worse in the past. We cannot say whether this is true or whether interviewees underestimate the extent of drinking problems the way they do the prevalence of on-the-job drinking. Some managers and labor representatives indicated that they thought railroaders' use of other drugs also caused their roads serious problems. Interviewees said that workers with drinking problems hurt themselves by losing pay when absent, by jeopardizing their jobs through rule violation, by exposing themselves to the risk of accidents, and by harming their health.

All respondents were asked to select the two most important ways in which employees' drinking affects railroad companies. The responses of the interviewees were surprisingly consistent with opinions that have been expressed by the work force at large. Table 4-1 shows the rank order of specific problems identified as the major ways drinking affects railroad companies. The table also shows the percentage of workers who identified each problem as one of the top two problems.

Other choices, such as damage, were possible. When the percentage of respondents selecting damage (5 percent) is added to the percentage who selected accidents or injuries, safety concerns account for 52 percent of the choices. Other problems (interpersonal friction, violence, disagreement with supervisors, litter, property damage, or any other effect) were selected by fewer than 6 percent of the respondents. The responses were remarkably similar among respondents on all the roads except among operating

personnel. One third fewer of these personnel viewed absenteeism as a top alcohol-related company problem. The difference is probably related to the fact that operating personnel have a system for dealing with absenteeism while exempt and nonoperating personnel do not.

TABLE 4-1. HOW EMPLOYEES' DRINKING AFFECTS RAILROAD COMPANIES

Factor	Percentage
Absenteeism	55
Poor performance	55
Accidents	29
Injuries	18
Bad press	14

4.2 ALCOHOL-RELATED ABSENTEEISM

The 234,000 workers on the study roads were absent from work for reasons other than vacation an estimated 2.4 million days in 1978, the year of the study. They missed just under 4 percent of the maximum possible workdays available last year. Approximately 1.5 percent of absence, 38,000 days occurred because workers were drunk or had a hangover that prevented them from going to work. Of the estimated 9,230 man years lost through absenteeism for all reasons except vacation in 1978, about 135 man-years were lost because of drunkenness or hangovers. On the total of seven roads, about 100 employees a day were absent for these reasons. However, the actual amount of drinking-related absence varied greatly among the roads, ranging from two absences per day on one road to about 50 per day on another. Not all railroads paid workers their usual salary for sick days but if they had, the total amount paid for absenteeism related to drinking would have been almost $2.5 million, ranging from $18,000 on one road to $900,000 on another.* The amount that would have been paid is about two and a half times as much as the total budgets of the employees assistance programs.

Table 4-2 shows the percentage of total absenteeism for reasons other than vacation which are attributable to a worker's being intoxicated or having a hangover.

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* Based on average annual salary rate of $18,000.

TABLE 4-2. PERCENTAGE OF TOTAL DAYS ABSENT ATTRIBUTABLE TO WORKER INTOXICATION OR HANGOVER

Railroad	Percentage
A	1.0
B	1.5
C	0.7
D	2.0
E	1.6
F	2.5
G	2.0
Weighted Average	1.5

Table 4-3 shows the percentage of drinking workers who missed at least one day in the past year because of drunkenness or hangovers.

TABLE 4-3. PERCENTAGE OF DRINKERS ABSENT AT LEAST ONCE BECAUSE OF DRUNKENNESS OR HANGOVER IN PAST YEAR

Railroad	Exempt	Ops	Non-Ops	Weighted Average
A	6	12	11	10
B	2	13	12	9
C	1	3	3	2
D	1	10	8	7
E	3	12	8	8
F	3	10	9	9
G	4	16	9	10
Weighted Average	3	11	9	8

Eight percent, or about 14,000 workers, missed work because of intoxication or hangover, with an average of about 2 days of such absence during the year. On six of the roads, the percent of exempt workers who missed work because of the effects of drinking was only about a third as high as the percentages of operating and nonoperating personnel. The data do not indicate whether exempt workers miss work less than contract workers because they are drunk or have hangovers less often or because higher-status employees who drink have more "on-the-job absenteeism" while lower-status drinkers stay away altogether. (Compare Trice and Belasco, 1967-68.) On Railroad A, the percentage of absenteeism related to drunkenness or a hangover for operating and nonoperating employees is twice as high as that for managers. Percentages of operating and nonoperating personnel are fairly close except on Railroads E and G. On these two roads, operating personnel have rates that are 3 and 4 times as high, respectively, as percentages of absenteeism for exempt workers.

4.2.1 Absenteeism Rates of Problem Drinkers Versus Nonproblem Drinkers

In Chapter 5, we define problem drinkers and estimate the number of problem drinkers on each of the roads by job category. We compare the self-reported overall absenteeism rates of problem drinkers with those of workers who are not problem drinkers. Workers in both categories may be absent for drinking-related problems other than being drunk or having a hangover (such as health problems and family problems). Problem drinkers can be absent, too, for reasons not related to drinking. The differences that appear in absenteeism rates of problem drinkers and the absenteeism rate of workers who are not problem drinkers can be attributed primarily to drinking.

Workers are absent for a variety of reasons. While these reasons include being drunk or having a hangover, they are not limited to these reasons. Other reasons include, for example, being ill or having family, legal, or financial problems. Our findings susggest that problem drinkers miss almost twice as many days of work (with resulting greater costs to their companies) as workers who are not problem drinkers. These days of absenteeism may be due directly or indirectly to drinking; they may, for example, be related to problems that result from drinking.

Because of the nature of problem drinking, as defined by our study, a pure test of the hypothesis is difficult. One of the characteristics defining problem drinking was missing work because of drunkenness or a hangover. Since the days that someone misses for being drunk or having a hangover are included in the total days of absenteeism, a correlation exists between the measures and the dependent variable is not totally independent of the definition. Still, many factors besides missing work because of drunkenness or having a hangover are related to absenteeism, and the suggestion that problem drinkers miss work more than those who are not problem drinkers is not without merit.

Problem drinkers, in fact, are absent more often than other workers. Problem drinkers missed an average of 15.3 days during the year studied for reasons other than vacation, while other workers missed an average of only 8.6 days in the studied year.

4.2.2 Supervisory Opinions on Comparative Rates of Problem Drinkers and Nonproblem Drinkers

Supervisors were asked to estimate the number of days per year that workers with drinking problems were absent from work for reasons other than vacation. Supervisors were not randomly selected, but they did represent a broad cross-section of crafts. The consistency of their responses lends credence to their estimates and suggests that their responses are both reliable and valid.

On the average, supervisors estimated that problem drinkers miss four times as much work as other workers: 36 days of absenteeism for problem drinkers as compared with 9 days of absenteeism for other workers. Supervisory estimates of nonproblem drinkers' absenteeism ranged from 2 days to 18 days. Their estimates of absenteeism for problem drinkers ranged from 4 days to 60 days. The discrepancy between this factor of four and the factor of about two reported above on the basis of the general survey data may reflect the comparatively strict definition supervisors apply to "problem drinker." A worker may qualify as a problem drinker by our definition without manifesting on-the-job symptoms which a supervisor can observe.

4.2.3 Impact of Alcohol-related Absenteeism

When an employee is absent on any road, a supervisor decides whether the missing employee is to be replaced during his absenteeism. The positions of absent exempt workers are usually left unfilled, and other exempt workers perform the absent workers' task to the degree they can. Sometimes the positions of nonoperating personnel are also left unfilled. Quite frequently, supervisors transfer a nonoperating worker from one station to the station of an absent worker. Some nonoperating personnel, such as telegraphers and crew callers, must stay on duty until relieved. When their replacements are late or absent, they get paid time and a half for the extra time they have to work. Transferring a worker or leaving a position unfilled means fewer workers are available to do the work and, at least in theory, that productivity is lower.

Among operating personnel, positions are usually filled when a worker does not report for work. Replacements are usually found for operating personnel from among the extraboard, the employees routinely on hand to fill in for absent workers. When qualified workers are not on extraboard duty, replacements are found from among other workers who are paid time and a half for this overtime work. No company records or interviewees could provide estimates of the relative percentages of cases in which positions were left unfilled or were filled through transfer, from the extraboard, or by overtime workers. Although costs cannot be estimated for any of these options, having to resort to any of them, except perhaps extraboard, results in increased costs and decreased productivity.

4.2.4 Extraboards

Most employees on extraboard are operating employees. Workers with regular runs or assignments have won those positions on the basis of seniority. Thus, they know each day what time to report for work, the nature of the work to be performed, the location of work and, in road service, the territory to be traversed and the layover terminal designated.

Workers with regular runs or assignments are known as regular employees. The nature of railroading, however, makes it essential to have a supply of trained employees to fill in for regular employees who do not report for work. In addition, wrecks or other situations often lead to more work than can be handled by regular employees. To handle this extra work and to fill vacancies when regular employees cannot work, a number of operating employees are placed on extraboard as a regular assignment. Many extraboard employees are called to work on a rotating basis, with their names placed at the bottom of an on-call list after they have had 8 hours' rest. In some cases, assignments are given to those with the most seniority who have completed 8 hour rest periods.

Extraboard employees are paid only for the actual number of hours worked. If there are more names on the board than there are positions to be filled individual earnings drop. Many interviewed supervisors and union chairmen think that the irregularity of service is associated with drinking rule problems.

In addition to the cost of sick pay, if it is provided, the increased costs for replacements at pay rates of time and a half, and lost productivity caused by filling a post through temporary transfer of an employee, the cost of supervisory time spent in finding a replacement needs to be considered. It is common for supervisors to have to find replacements for workers who cannot perform their work because they are drunk or have hangovers. Over half of the interviewed supervisors had to find replacements at least several time last year because of someone's drinking. The degree of inconvenience caused varied tremendously among the supervisors. For some, finding a replacement was no trouble at all and required 15 minutes of less. For others, the process took up to 4 hours. It is especially vexing and time-consuming to try to get employees to do emergency work on weekends.

Operating personnel present special problems when they are absent or even late. They have a 30 minute grace period after their scheduled reporting time; this period usually ends about 30 minutes before train departure time. If a worker has not reported by that time, a replacement is sought. The time spent looking for a replacement may be nonproductive for an entire train crew. If the scheduled worker comes after a replacement is called to work, contractual arrangements may require that the replacement be paid for a minimum number of hours even though he has not worked.

4.2.5 Absenteeism Costs in Lost Productivity Because of Excessive Absenteeism of Problem Drinkers

Among exempt and nonoperating personnel, absenteeism means the work force is short a hand either because a position is left unfilled or a position becomes vacant because of a transfer. According to our definition, problem drinkers make up 12 percent of the work force and are absent about twice as often as nonproblem drinkers.

Interestingly, problem drinking exempt workers do not miss any more time than nonproblem drinking exempt workers. Since the extraboard situation covers the costs of lost production for ops, the only occupational category

for which costs of lost production apply are the non-ops. Problem drinking non-ops miss an average of 12.2 days per year. Other non-ops miss an average of 7.0 days per year.

By subtraction, we estimate that each problem drinking non-op costs his company 5.2 days in lost production per year. We estimate (Chapter 5) that 12 percent, or 8,670 workers, of the 72,250 nonoperating personnel on the seven study roads are problem drinkers. Based upon an average annual salary of $18,000, and equating salary with productivity, we estimate that these 5.2 days of lost productivity per problem drinking non-op represents a cost to the seven railroad companies of over $3 million per year.

4.2.6 Cost of Excessive Absenteeism Reported in Other Studies

Unlike this study, none of the studies reviewed in our literature survey isolated the alcohol-related absences caused by all employees in individual work forces or the percentage of the work force that accounted for such absences. As we have seen, at least 2 percent of all missed calls to work on the study roads last year were traced to the effects of drinking, and 8 percent of the workers on these roads were involved in such absences at least once. Other studies report 1) the absenteeism rates of alcoholics or problem drinkers but don't compare these rates to absenteeism rates of nonproblem drinkers, 2) compare the absenteeism rates of alcoholics or problem drinkers to nonalcoholics or nonproblem drinkers, or 3) estimate the reduction in days previously missed because of alcohol problems by successfully rehabilitated alcoholics or problem drinkers.

Data from studies that show reductions in absenteeism or absenteeism costs will be summarized in the last chapter. Other studies simply report absenteeism rates for problem drinkers or compare these rates to those of problem-free workers. These studies are reviewed in this chapter. Caution should be exercised in interpreting the results of these studies since at least some of them suffer from one or more defects (such as, unspecified methodology or definitions, extrapolation of prevalence rates of problem drinkers and alcoholics from national data, exclusive reliance on supervisory estimates of absenteeism attributable to alcohol problems, small samples, or evaluations by the programs themselves).

Study estimates for absenteeism by problem-drinking employees range from 14 days to one and one-half work-months a year. In a 10 year study of Consolidated Edison's employee assistance program, Franco (1960) reported that 400 diagnosed problem drinkers missed an average of 14 days a year prior to treatment. Fisher (1971), using unspecified methods, estimated that employees with drinking problems miss 22-30 working days each year because of their drinking problems. Pace (1975) put the absenteeism rate at 30 workdays a year for male alcoholics--a rate also affirmed by Canada's Addiction Research Foundation. With caveats about aspects of the studies they were reviewing, Hertzman and Montague (1977) summarized studies done at Allis-Chalmers, Oldsmobile, and Illinois Bell. They reported that untreated problem drinkers miss an average of 21 workdays or one work-month a year.

The reported differences in the absenteeism rates of problem drinkers or alcoholics and the rest of the work force vary widely from study to study. In a study in which they compared the absenteeism records of 764 alcoholics and a control group of 863 nonalcoholics, Pell and D'Alonzo (1970) found that alcoholics missed work 13 days a year and nonalcoholics missed work 5.8 days a year. Reporting on an evaluation of the Program for Alcoholic Recovery (PAR) within the U.S. Postal Service, Day (1973) said that alcoholics had an excessive absenteeism rate of from 22-46 days a year more than the average employee. Whitehead (1974) reported an estimate by one company program director that alcoholic workers are absent 16 times more often than regular employees; how this figure was derived is not reported. In a controlled study at General Motors, Pace (1975) reports that alcoholic workers were absent an average of 93 days per year or nearly three times as often as other employees. These average rates of absenteeism do not mean all workers with alcohol problems are excessively absent.

4.3 LOST PRODUCTIVITY CAUSED BY DRINKING

Railroad workers' drinking sometimes has an effect of reducing personal and group productivity, lowering group morale, and inconveniencing and costing companies money. Dollar estimates cannot be drawn for the more intangible of these effects. It is probably more important to understand the magnitude and impact of drinking on productivity than to rely on necessarily arbitrary estimates of the costs of specific adverse effects. Dollar estimates that can be made must be understood and used as rough estimates.

4.3.1 Personal Inability to Work Because of Intoxication or Hangover

Three percent of the sample, of an estimated 7,000 workers on the study roads, said they went to work but could not do their jobs because they were drunk or had a hangover at least once in the past year. These 7,000 workers went to work in this condition about 13,000 times. Companies paid these 7,000 workers about $900,000 for days when they were on the job but did not do their job or could not do it well. When all the roads in the study are considered together, the equivalent of 36 workers a day appeared on the job with a hangover or too drunk to do their work; these occurrences ranged from one every three days on one road to 15 a day on another. These "absentees on the job" miss about one third as many days as those who stay home because they have hangovers or are too drunk to come in. Taken together these two groups of workers account for over 50,000 nonproductive days per year, or close to 200 nonproductive man-years. Because railroads pay workers who show up whether they work or not and, except for exempt workers, do not usually pay those who do not show up, railroads are, in fact, better off financially when a worker calls in sick than when he comes in but can't perform. According to some interviewees, the practice of not paying sick pay is a menace to safety because it places a high incentive on coming to work whatever the circumstances.

Table 4-4 shows the percentage of workers on each road who reported in too drunk or hungover to do their job.

TABLE 4-4. PERCENTAGE OF WORKERS COMING TO WORK TOO DRUNK OR HUNGOVER TO DO THEIR JOB

Railroad	Exempt	Ops	Non-Ops	Weighted Average
A	3	7	9	8
B	1	3	3	2
C	1	1	2	1
D	1	1	6	4
E	2	1	2	2
F	0.0	4	4	4
G	2	5	4	3
Weighted Average	2	3	4	3

In general, higher percentages of nonoperating personnel (who make up half the work force) come to work unable to do their job because of drinking than do operating personnel or exempt workers. Among the roads, operating and nonoperating personnel on Railroad A and nonoperating personnel on Railroad D score at least twice as high as the overall weighted average for the work forces on all the roads. Railroad A has the highest percentage of workers who have stayed home (see Table 4-3) or come in with hangovers or too drunk to work. Railroad C has the lowest percentage of workers who have done either.

4.3.2 Supervisory Opinions on Effect of Problem Drinkers on Productivity

Supervisors were asked at what percentage of their potential capability average railroad employees actually work. Then they were asked at what percentage of their potential capability problem drinking employees actually work.

There are some problems with this approach, not the least of which are that it is subjective and that it required the supervisors to make a diagnosis. The method does, however, have a long history in the occupational alcoholism literature (for example, Winslow et al, 1966). Moreover, since the supervisors do have direct contact with the workers, and since the supervisors are often the best source to assess the workers' productivity this approach is not completely without merit. As in earlier analyses, we present these results and caution the reader as to the possible weaknesses in the interpretation.

Some supervisors said that, when sober, problem drinkers were often as good and sometimes better at their jobs than other workers. Some others emphasized that their estimates were rough and were based solely on their own experience and perspectives. Nevertheless, their estimates were similar. Overall, supervisors estimated that on the average, railroad employees work at 70 percent of their potential capability, and problem drinking employees

work at 50 percent. Their estimates yield an average 20 percent difference in productivity or a relative difference of 29 percent. Supervisors estimated that "problem free" employees worked at from 60 to 85 percent of their potential, that problem drinkers worked at from 25 to 70 percent of their potential and that problem drinkers were from 15 to 35 percent less productive than "problem free" workers. Supervisors were less sure about the impact that drinking or drunken workers had on the productivity of other members of the group.

4.3.3 Impact of Intoxication and Hangover on Work Groups

During the studied year, over 15 percent of workers personally saw a worker on duty who was too drunk or whose hangover was too severe to permit him to do his job. Nine percent of exempt workers saw such a worker. On Railroads A and F, more than 13 percent of exempt employees observed such an employee at least once. In the operating and nonoperating classes of several roads, over 20 percent of the workers witnessed an alcohol-impaired worker on duty.

Workers were asked to check all the effects that the presence of such workers had on them. Table 4-5 summarizes their responses. It shows the overall responses by workers on all roads studied and the responses of workers in each occupational category.

TABLE 4-5. PERCENTAGE OF WORKERS AFFECTED IN DIFFERENT WAYS BY ALCOHOL-IMPAIRED WORKERS

Occupational Category	Worked Harder	Got Mad	Worked Less Hard	Hid Worker	Sent Violator to EAP	Told Supervisor	Sent Violator Home
Exempt	46	44	6	8	36	43	53
Ops	75	56	4	40	15	6	26
Non-Ops	54	44	9	9	11	12	39
Weighted Average	60	47	7	22	15	14	37

Even when one subtracts the percentages of workers who work less hard from those who work harder, over 50 percent of workers in work groups with alcohol-impaired co-workers work harder, albeit in a more distempered mood (almost 50 percent got angry). This increased productivity must be taken into account in interpreting the $900,000 estimate of the lost productivity of drunk and hungover workers reporting for duty.

4.3.4 Other Effects Related to Productivity

On-the-job drinking problems that affect productivity include problems with passengers, supervisors, or fellow workers. Only a very small percentage of workers reported problems with other people because of drinking during the studied year. Fewer than 0.5 percent had problems with a passenger because

of drinking. Only 1.5 percent had problems with a supervisor, even though large percentages of supervisors apparently saw workers violating drinking rules. About 1.5 percent had problems with fellow workers because of drinking. Although these percentages are low and probably do not add up to much lost productivity, they can involve ugly confrontations and the creation of ill will. Though an estimated 450 reported alcohol-related problems with passengers, for example, involve only 0.2 percent of the work force, they can be the source of serious problems for any company.

4.3.5 Cost of Lost Productivity

We are hesitant about trying to estimate the cost of lost productivity because of the difficulty of assigning dollar values to inefficient work and because of the subjectivity of some estimates already reported. However, since problem drinkers seem to be substantially less productive than nonproblem drinkers we will attempt to estimate productivity loss. We caution that these are just estimates.

Probably the best measure of lost productivity caused by drinking is the reduced productivity of problem drinkers in the work force. To develop an estimate of this cost, we multiplied the percent of reduced productivity of problem-drinking workers (estimated by supervisors--that is, 20 percent) by the average annual salary ($18,000) of workers to determine the cost of reduced productivity of individual workers with drinking problems. Then, we multiplied this number by the estimated number of problem drinkers in the work force of the seven roads studied. According to this method of calculating, we estimate that the seven roads in the study suffered a productivity loss of more than $100 million during the year of the study.

4.3.6 Cost of Lost Productivity Reported in Other Studies

The costs to a firm of lost productivity due to problem drinking have not been reported, as such, in the literature. Instead, global statements have been made which include "lost productivity" or "poor performance" as one aspect of the total alcoholism-related costs to industry. In most cases, the derivation of these figures is not explained.

Whitehead (1974) reports that alcoholism costs management an extra 25 percent (or about $2,500 per alcoholic) for absenteeism, poor performance, accident, and disease. Levens (1976) suggests that the average employed problem drinker costs his employer about $2,900 annually, due to inefficiency, absenteeism, premature training of replacements, and excess utilization of employee benefits. Finally, Von Wiegand (1976) sets the figure at $3,000 annually per employee due to absenteeism, spoiled materials, poor judgment, disciplinary actions, hospital and medical costs, accidents, and other factors.

Schramm (1974) proposes a method for calculating a firm's total costs due to alcohol abuse. The method is built on four assumptions, which are based on the findings of a number of companies. One assumption is that the average alcoholic worker, through a combination of absenteeism, lateness, higher accident frequency, and poor work performance, is 25 to 50 percent less productive than a nonalcoholic employee. Day (1973) reported that the

average alcoholic performs at about 60 percent of his capacity. One strategy which has been proposed for establishing the cost of lost productivity is to obtain estimates from the employee's supervisor. We were wary of this method, however, because we feared supervisors might have been thinking of a much more stringent definition of "problem drinker" than this study's definition of "problem drinker" when making their estimates on relative productivity. If this was the case, the $100 million estimate would be high.

Although the number of interviewed supervisors upon which this estimate was based was limited (n=33), our respondents represented supervisors of all kinds of workers, were drawn from seven different roads across the country, and came up with quite similar estimates (that is, 15 to 35 percent). This consistency establishes convergent validity. It is unlikely that 33 supervisors would independently provide the same estimate of lost productivity, if, in fact, that estimate did not have some basis in reality. Consequently, we believe that the estimate of 20 percent reduced productivity of problem drinkers is fairly accurate and that supervisory estimation is a valid technique in at least some situations.

In addition to estimates of lost productivity costs to the individual firm, estimates have been made for the nation as a whole. Berry et al, (1974) placed a $9.35 billion figure on the economic cost of lost productivity, out of a total alcohol abuse cost in 1971 of approximately $25 billion.

Four years later, estimates of lost productivity costs had risen to $19.64 billion (Berry et al, 1977). As pointed out, however, in the Third Special Report to Congress (DHEW, 1978), inflation accounted for part of these increased costs. In addition, a more comprehensive analysis of cost factors was made in 1975 vis a vis 1971, accounting for the remaining difference.

The 1975 estimate of $19.64 billion represents the sum of three separate estimates: $15.46 billion in lost market production among male workers, $0.41 billion in lost military production, and $3.77 billion in lost future productions due to excess mortality in 1975. The $19.64 billion figure is a conservative estimate, however, since it does not include the cost of lost services from problem drinkers not in the traditional market system (for example, nonsalaried housewives).

4.4 DRINKING-RELATED ON-THE-JOB INJURIES

Safety Officers on the seven roads studied reported 29,845 on-the-job injuries during the past year. According to responses of workers in our general survey, approximately 0.5 percent, or an estimated 1,200 workers on all roads, caused injury to themselves or to a fellow worker because of their drinking at least once during the year. None of these alcohol-related injuries occurred among exempt workers. These alcohol-related injuries represent about 4 percent of the reported injuries on all the roads last year.

4.4.1 View of Medical and Safety Officers on Connection Between Drinking and Injuries

All but one of the medical officers on the study roads felt they lacked the information upon which to base an estimate of the percentage of injuries on their roads that are connected with alcohol use. One medical officer

thought that about 15 percent of the injured workers he examined were hurt because of their own drinking. Six of the safety officers felt that the responsibility for determining the cause of an accident lies with the work group divisions and that they had not instituted procedures to determine whether alcohol is involved in injuries. One safety officer estimated that 10 percent of all of the injuries on this road were alcohol-related. Another safety officer said that alcohol is seldom given as the cause of an injury on reports submitted to his office, even when drinking is the cause. He thought this was true on all railroads. As a consequence, he thought, the causes of reportable injuries submitted to FRA usually fail to mention drinking even when it is involved. One safety officer indicated that four of six deaths that occurred on property during the seven years prior to the study were alcohol-related. His experience indicated that problem drinkers are more likely to be involved in serious accidents. Finally, the safety officer on a railroad not studied told us that fully 50 percent of all accidents on that railroad are directly or indirectly related to employees' drinking.

There is strong experiential evidence of at least some safety and medical officers that far more accidents involving injuries are alcohol-related than are reported. As we shall see below, responses to the general survey indicate that this low reporting rate may also apply to accidents involving only equipment damage.

4.4.2 Supervisory Estimates of Alcohol-related Injuries Involving Problem Drinkers

Supervisors were asked to estimate the increased chances of injury when a worker drinks on the job. Most felt uncomfortable trying to assign such a risk factor. Every one of them thought that a drinking worker's chances of injuring himself or others were much greater than a nondrinking worker. Half based this opinion on their own experience, and half on conjecture. These supervisors told of incidents in which drinking employees had injured themselves by slamming a car door on oneself, throwing a switch with a foot on the track, falling off a locomotive, hitting one's foot with a sledge hammer, and so forth. One self-inflicted death was reported. Supervisors told of incidents in which drinking employees injured others, for example, by setting off a torpedo in a box car, causing derailments that injured workers, letting a hammer slip out of one's hand and hit a fellow worker in the groin, operating a crane that struck a fellow employee.

4.4.3 Other Records of Injuries

Federal records only partially reflect the extent and costs of injuries due to alcohol use by employees. Many industrial accidents go unreported even to supervisors, let alone to employers or the government. Even where accidents are reported, individuals and railroads are reluctant to record alcohol as a cause.

We may conclude that if alcohol is not a cause, it is at least a contributing factor in many injuries which are attributed to "human factors." In 1977, the latest year for which figures are available, human factors accounted for 2,559 train accidents on Class I and Class II railroads. Five fatalities and 272 injuries resulted.

Only 1 percent of all injuries and 7 percent of all fatalities occurred in accidents. The remainder occurred in train and nontrain incidents.* Although injuries incurred other than in train accidents are not recorded as to whether or not they were due to human factors, quite conceivably many of these may have occurred because railroad workers' faculties had been impaired by alcohol use. The more than 60,000 injuries on these railroads resulted in almost 0.5 million lost work days.

4.4.4 Impact of On-the-Job Drinking on Feeling of Safety in Work Groups

As we have reported, an estimated 30,000 workers drank on duty on an estimated 90,000 occasions during the year reported on. This on-the-job drinking creates fear among large numbers of workers. Workers were asked if they are ever afraid of what might happen to them when workers around them drink on the job. Table 4-6 shows the percentages of workers on all roads and by occupational category who say this kind of drinking makes them afraid for their own safety or well being.

TABLE 4-6. PERCENTAGE OF WORKERS AFRAID WHEN CO-WORKER IS DRINKING

Occupational Category	Very Often, Often, or Sometimes Afraid	Almost Never or Never Afraid
Exempt	52	48
Ops	76	25
Non-Ops	65	36
Weighted Average	66	34

Two-thirds of those workers who have been near a drinking co-worker are frightened when co-workers drink around them on duty. As we have seen above, they have good cause to be fearful. In Section 3 it was reported that 35 percent of workers saw fellow workers drink on duty last year. Calculating the financial loss to companies due to this climate of fear is impossible. However, the inability to estimate costs does not lessen the seriousness and magnitude of this effect.

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*Accidents are defined as moving train mishaps which result in damage in excess of $2,300. All other mishaps are incidents. Since the study year, the cut-off value has been raised to $2,900.

4.4.5 Claims Filed by Employees for Alcohol-Related Injuries

According to our survey respondents, the average size of work groups across the railroad is about 11 men. Survey data indicated that an average of 0.3 percent of each work group has filed claims after suffering a self-inflicted alcohol-induced injury. Across the seven study roads this amounts to an estimated 700 such injuries last year, some of which might be quite costly. One safety officer on a nonstudy road told us that the most expensive claim that railroad had to pay in the past year was for a worker who got drunk and passed out on the tracks. An oncoming car severed both of his legs.

4.4.6 Cost of Alcohol-Related Injuries and Death

The total costs of alcohol-related injuries to companies is the sum of the dollars paid for lost days to employees out with alcohol-related injuries, disability claims paid for these injuries and the cost of time spent on alcohol-related injuries by claims departments and operating departments. (Safety departments spend very little time, if any, investigating injuries.) Operating Divisions do not keep records on the time spent investigating injuries. Claims Offices spend 75 percent of their time investigating injuries, and 4 percent of this time investigating alcohol-related injuries. We were unable to get the budget of the Claims Departments on the study roads. Consequently, we are not able to include the cost of railroad staff time spent on alcohol-related injuries in our cost estimates.

We estimated costs of disability claims paid for these injuries by multiplying the total disability claims paid out by .04 (our estimate of the fraction of injuries connected with drinking--see page). For the six roads from which we could obtain information on the amount of each claim, this comes to about $500,000.

Since we have covered the costs of days lost due to injury in our discussion of the costs of absenteeism, they are not computed here.

4.4.7 Costs of Alcohol-Related Injuries in Other Studies

There is a relative dearth of research on the connection between drinking and industrial accidents involving injury. The Third Special Report to Congress (DHEW 1978, VIII-8) noted that "studies are needed to compare the proportion of positive BAC's of accident-involved workers to the BAC's of a control group not involved in accidents." Such studies could help establish empirically the association between drinking on the job and industrial accidents, data which currently do not exit.

As early as the 1940's, Jellinek (1947) reported that 1.3 million alcoholics employed as industrial workers in this country had twice the fatal accident rate of the nonalcoholic workers. This stimulated further study into the relationship between problem drinking, lost production, and industrial accidents. Few of the subsequent studies have actually examined the BAC levels of industrial accident victims, however.

The controversy as to whether problem drinkers have a higher rate of on-the-job accidents than the "normal" population thus remains unresolved Trice (1957) argued that increased absenteeism, not accidents, was the

major impact caused by alcoholics in the work force. Observer and Maxwell (1959) suggested that accidents were frequent among young alcoholics under 40, but much less frequent among older alcoholics who had learned to pace themselves at work. Still, problem drinkers in his study had over three and one half times as many accidents as employees in the comparison group. Pace (1975) reported a similar estimate, based on a study of one large corporation; he indicated that the alcoholic is three times as likely as the nonalcoholic employee to have an industrial accident. Foreign studies report the presence of alcohol in from 9-40 percent of industrial accidents involving a fatality and in from 7-47 percent of industrial accidents not involving a fatality (DHEW, 1978).

Experiments like those carried out by Wolkenberg (1975) have shown that alcohol has an adverse effect on the coordination, reflexes, and motor skills required to perform work in industrial setting. Such an effect could potentially lead to on-the-job accidents. Hilker et al (1972) reported a "dramatic decrease" in on-duty accidents (from 57 to 11) after implementation of an alcoholic rehabilitation program at Illinois Bell. Off-duty accidents were also reduced by 47 in the same time period. Similarly, in an unidentified study reported in the Journal of American Insurance (1975-76), initial visits to a medical center for treatment of work-related injuries decreased 31 percent after a rehabilitation program was initiated. In a second study (also unidentified), off-duty accidents decreased 63 percent while on-duty accidents dropped 81 percent once a program was implemented.

In summary, problem drinkers are probably more likely to be involved in industrial accidents than the general population. The Third Special Report to Congress (DHEW 1978, VIII-8) suggests a relative risk of industrial accidents for alcoholics in the range of 2-3 times as great as that for other workers.

4.5 ALCOHOL-RELATED ACCIDENTS INVOLVING PROPERTY DAMAGE

We do not know how many alcohol-related accidents there were during the year studied. Nor do we know how many railroad workers observed such accidents during that period. We do know that alcohol-related accidents involving damage were seen about 45,000 times by railroad workers last year. We do not know what percentage of these observed accidents were reportable to FRA (accidents costing over $2,300*). Table 4-7 shows the percentage of workers on all roads who saw various kinds of property damaged by workers who had been drinking.

*Since the study, Federal Railroad Administration has changed its reporting requirements. Accidents with a cost below $2,900 do not have to be reported.

TABLE 4-7. PERCENTAGE SEEING ALCOHOL-RELATED ACCIDENTS INVOLVING DAMAGE

Occupational Category	Trains	Track	Construction Equipment	Buildings	Trucks, Buses, and Autos	Office and Factory Equipment
Exempt	3	2	2	6	6	3
Ops	5	3	1	1	3	2
Non-Ops	3	2	2	6	7	5
Weighted Average	3	2	2	3	6	4

As Table 4-8 shows, these percentages translate into high numbers of the studied population who saw damage of one kind or another related to drinking.

TABLE 4-8. NUMBER OF EMPLOYEES SEEING VARIOUS KINDS OF ALCOHOL-RELATED DAMAGE

Approximate Number of Workers Seeing Damage	Type of Alcohol-Related Damage Seen
Thousands	
7	Trains
5	Track
4	Construction Equipment
7	Buildings
13	Trucks, Buses, or Autos
8	Office or Factory Equipment

On one road, alcohol-related accidents were seen about one time by 33 percent of employees; on another, about once by 25 percent; and on the road with the fewest witnessed events, about once by 5 percent of employees.

4.5.1 Company Data on Alcohol-Related Train Accidents

The railroads studied had a total of 4,239 reportable train accidents (that is, accidents involving more than $2,300 in damage) in 1978, or a total cost for damage of about $65 million. (FRA, 1978) When an accident occurs, all of the safety offices receive reports from involved operating divisions on the cause of the accidents, but they do not make special inquiries unless

a fatality has occurred. The safety officers on four of the roads studied did not believe they had adequate information to estimate the percentage of accidents that were alcohol-related. The other three speculated that 1 percent, 3 percent, and up to 25 percent of all accidents were related to the use of alcohol. That would suggest a combined total of 36 reportable train accidents on the two roads with estimates of 1 and 3 percent. The average cost of a train wreck on these two roads was $14,500. According to the estimates, then, alcohol-related train damage on these two roads may amount to more than $.5 million a year. On the third road where 25 percent of the train accidents may have had some connection with alcohol abuse, the prorated cost of alcohol-related train accidents alone may have been more than $5 million.

4.5.2 Supervisors' Estimates of Probability of Involvement in Accidents by Employees Drinking on Job

Supervisors were asked if employees drinking on-the-job were more likely than other workers to damage equipment. All hesitated to estimate the increased likelihood of damage, but they agreed that the risk of damage was much higher when employees were drinking on the job. Many mentioned incidents they had seen: two train derailments, smashing into a company railroad car while driving a company automobile, ruining the transmission on a company truck by shifting gears without depressing the clutch, and ruining materials and equipment in shops.

4.5.3 Impact and Costs of Alcohol-Related Accidents

We cannot develop noncontroversial estimates of the costs of alcohol-related accidents because we do not know what percentage of reportable accidents are related to drinking. Large percentages of the workers on all the roads studied report seeing damage of some kind or other caused at least partly by employees' drinking. However, reports from operating divisions seldom, if ever, mention alcohol abuse as a cause of these accidents.

Many accidents in which alcohol is a contributing factor are probably classified as being due to "human error" with no further explanation given as to why a well trained, experienced, healthy individual should have made such an error. Although we do not know what portion of the amount is due to alcohol impairment, we do know that "human error" accidents resulted in over $65 million worth of damage on Class I and Class II railroads in 1977, the most recent year for which figures are available. Over 25 percent of all accidents were of this type.

One of our study roads, the Southern Pacific, recently suffered a major train accident. Although the accident is under investigation by the NTSB at the time of this writing, the accident has already been widely attributed to the intoxication of the train's engineer in a report distributed to the news media by Associated Press (AP). As this accident did not occur during the study year, its costs are not included in our calculation. However, it may be typical of other alcohol-related accidents which were not officially designated as such. Therefore, we include information on the cost of this accident to indicate both the potential magnitude of this type of accident and the fact that our cost estimates are probably very low.

AP reported that the crash of Southern Pacific's "Blue Streak" freight train on July 24, 1979, killed an engineer and injured a brakeman and a conductor. An autopsy revealed that the engineer was legally drunk at the time he drove his locomotive into the rear of another train. The value of the three locomotives, eight boxcars, and the caboose which were destroyed was $1.4 million. Costs of destroyed lading, damaged track, clearing wrecks, disrupted service, and injury claims were not reported, but would probably greatly increase this already substantial figure.

There is more than enough evidence to make one suspect that drinking may play a part in many accidents: numerous incidents of on-the-job drinking, intoxication and hangover, as well as numerous accidents witnessed by workers and associated with drinking. Because of the high cost of engines, trains, equipment and other company property, damage may be one of the larger alcohol-related costs incurred by companies. The relationship of drinking and accidents calls for further investigation. However, if we accept even the lowest estimate received from safety officers of the percentage of train accidents due to alcohol use by employees (1 percent), we conclude that the seven study railroads incurred $650,000 in expenses due to alcohol-related accidents (that is, 1 percent of the $65 million in damages documented for 1978).

4.5.4 Cost of Alcohol-Related Property Damage in Other Studies

Like the studies on accidents involving injury, there have only been a few studies on alcohol-related accidents involving property damage in industry. Observer and Maxwell (1959) found that problem drinkers in one large company had three and a half times as many accidents as other workers.

Schramm (1974) reported that the overall costs of damaged goods and property caused by the alcohol-impaired employee, as well as the cost of workmen's compensation premiums due to alcohol-related accidents, have not been established empirically. This still seems to be the case almost five years later.

Lacking in any of the studies is empirical evidence on the direct connection between industrial accidents and drinking prior to the accident--the same kind of information we found lacking on the railroads studied. Until this link is established, it will be impossible to determine the percentage of accidents that are precipitated by drinking and the cost of these accidents to companies.

The public is becoming increasingly concerned about the operating safety of railroads. In recent months, the public has become more aware of the potential for disaster in train accidents involving chlorine and other noxious chemicals. As the energy crisis forces renewed emphasis on high-speed freight and passenger rail travel, concern about railway safety will become accentuated. It is the responsibility of railroad companies to ascertain the causes of accidents and to take corrective steps to eliminate the causes and reduce the frequency of accidents. At the present time, railroad companies do not have an adequate system for investigating the possible involvement of alcohol in railway accidents. Indeed, potential liability claims create a strong incentive not to delve too deeply into the cause of accidents where alcohol is suspected as a contributing factor.

This study indicates that drinking could be a serious factor contributing to accidents in the railway industry. The fragmentation of the investigative process has made it impossible to measure the degree to which alcohol is actually involved in these accidents. The connection between the use of alcohol by workers on duty or subject to call and railway accidents is a matter of grave concern. Immediate action to establish the linkage between employee drinking and accidents is imperative. Consequently, the railway industry, rail labor, and the FRA should jointly and immediately develop effective ways of measuring, documenting, and controlling the impact of employee drinking on accidents within the industry.

4.6 ALCOHOL-RELATED ILLNESSES

Research has suggested a relationship between excessive consumption of alcoholic beverages and diseases such as cirrhosis, certain kinds of cancer, heart disease, pancreatitis, fetal alcohol syndrome, and other health problems. For example, many studies have associated alcohol use with from 40-95 percent of the deaths from cirrhosis of the liver, the sixth most common cause of death in the United States in 1975 (DHEW 1978). However, statistical data on cases in which most other diseases are associated with drinking are sorely lacking. It is known that excessive drinking contributes to and exacerbates a wide range of physiological pathologies. The National Institute on Alcohol Abuse and Alcoholism (NIAAA) estimates that in 1975, 12.1 percent of all health expenditures for the American adult population (about $13 billion) was spent for alcohol-related health services. The numbers of people whose drinking has been a contributing factor to their illness is not known. Medical records in the railroad industry on alcohol-related illnesses and disability are virtually nonexistent. Given the sparse information available on the railroads and in the epidemiologic literature, only the crudest kinds of estimates are possible on the frequency, impact, and costs of alcohol-related illnesses and disabilities.

Six of the seven railroads studied have medical departments staffed by physicians and professional health staff employed by the company. One company has no medical department but contracts its medical services out to a physician who is not a company employee. The principal responsibility of railroad medical departments is to process and document examinations that test the fitness of employees to do the job to which they are assigned. In general, the medical departments' work is confined to conducting routine physical examinations and periodic checkups of general office personnel, conducting special examinations (for example, for a person returning to work after a heart attack), and examining and providing emergency care or first aid for injuries. The number of examinations required exceeds by far the capacity of the small medical staffs on the railroads. Most medical work is contracted out to other physicians on a fee-for-service basis. These doctors submit reports on examinations to the medical department for their review. Thus, medical department staff actually see very few employees. Consequently, the medical departments are dependent in large measure on the reports they receive from the doctors whom they have under contract for information on alcohol-related illness.

Doctors are often reluctant to include even a secondary diagnosis of alcoholism in their reports, according to the medical directors on two of the roads. Unlike diagnostic tests for other diseases, diagnostic tests for alcoholism depend on the relationship between circumstantial evidence about drinking and physiological effects. Several medical directors also thought that doctors were reluctant to report alcohol-related illnesses especially in formal, written reports because of the social stigma associated with these diseases. Finally, the physical fitness tests administered to provide companies with required information are not always intensive enough to permit a diagnosis of alcoholism. Whatever the reasons, the fraction of workers who see the company physicians for alcohol-related reasons does not approach in size the 4 percent who stated in the general survey that drinking has hurt their health.

This lack of information explains why some medical directors were reluctant to estimate the number of workers whose medical files they saw during the studied year, who have alcohol-related problems.

Three medical directors did offer the following estimates: 1 percent of all cases were diagnosed as alcohol-related; 3-5 percent of all cases were diagnosed as alcohol-related; 1 percent of all cases were diagnosed as alcohol-related, and 5 percent of all cases were suspected to be alcohol-related, but were not officially diagnosed as such.

On these three roads, between one and five percent of the employees examined were diagnosed as having alcohol-related problems. The 1 percent estimate comes from a road that has shown relatively less drinking and fewer drinking problems. The 3-5 percent estimate comes from a road with relatively more drinking and more drinking problems. Even though the figure is probably low because of a widespread reluctance to diagnose or report alcoholism and alcohol-related health problems, all of the railroads studied probably have a range of 1-5 percent of examined patients with a diagnosis of an alcohol-related problem.

We attempted to obtain information from the Railroad Retirement Board (RRB) about how much money had been paid in claims for alcohol-related illnesses in the past year. Although such sickness claims are paid through the RRB, the ultimate costs are borne by the individual railroads through their RRB assessments. Unfortunately, the RRB was unable to provide us with this information. Such costs are probably substantial, however, because of: a large number and variety of illnesses known to be related to heavy alcohol consumption; large numbers of railroad workers drink heavily; and RRB paid a total of more than $94 million to 74,800 sickness benefit claimants in Benefit Year 1976-77.

4.6.1 Retirement Age of People with Alcohol Problems Versus Other Workers

Six of the seven medical directors said they had no information on the average age of retirement for workers with and without drinking problems. Based on the past experience, one medical director, long active and interested in alcoholism studies, made these estimates of comparative retirement ages.

Occupational Category	With Alcohol Problems	Without Alcohol Problems
Exempt	52-53	62-65
Operating	52	57-60
Nonoperating	53	58-60

According to this medical director, serious drinking problems cut 10-13 years out of the career of a manager; they shorten the work life of a contract employee by 5-8 years. Thus, drinking problems reduce the productive years of some of the railroad's most experienced and sometimes most valued employees. The investment that companies have in some of these employees is very high. For example, interviewees estimated that it take about 2 years and anywhere from $15,000 to $25,000 to train and develop a fully qualified engineer. When an engineer's career is cut short by 5-8 years, the company fails to realize the full potential of its initial investment and must recruit and train another man to take his place. The company's investment in qualified managers is less definable but probably no less costly. The premature loss of trained and qualified personnel is a costly item across the board even if it is impossible to assign a precise dollar figure to such losses. Until better records are kept on alcohol-related disabilities, it will not be possible to estimate total dollar losses incurred through alcohol-related disabilities.

4.6.2 Cost of Alcohol-Related Illnesses and Disabilities

The costs incurred directly by companies for alcohol-related illnesses and disabilities include the following expenditures: (1) budgets of railroad employee assistance programs; (2) portion of budgets of medical departments spent on alcohol-related cases; (3) portions of premiums paid to insurance carriers or hospital associations for alcohol-related health problems; (4) on roads that have hospital associations, hospital costs over and above those paid by insurance carriers for workers with alcohol-related illnesses; (5) costs connected with premature retirement of experienced employees because of alcohol-related problems not involving an on-the-job injury; (6) costs of disability payments made to workers filing alcohol-related disability claims; and (7) deaths from alcohol-related illnesses. If adequate information were available, estimates could theoretically be made in each of these cost categories. What is available allows us to draw a picture of probable costs but not to derive satisfactory estimates.

4.6.3 Budgets of Employee Assistance Programs

Program budgets across the roads amount to $968,802 or about $4 per employee per year. The total budgets of the medical departments of all the railroads exceed $3 million. This amounts to about $12 per employee per year. Because of the structure and function of railroad medical departments, probably only a very small portion of this amount is related to alcohol problems, and we therefore do not assign any medical department costs to alcohol problems.

4.6.4 Insurance Premiums Due to Alcohol-Related Health Problems

Over 12 percent of the health expenditures of American adults go for alcohol-related illnesses (DHEW 1978), even though only 7 percent of American adults are problem drinkers. We must anticipate that the railroads, where problem drinkers constitute 12 percent of the population, albeit by our alternative definition, a higher percentage of health expenditures would be alcohol related. For the sake of conservative estimates, however, we apply the 12 percent figure.

Our seven study railroads paid a total of $19,271,760 in health insurance premiums during the year studied. Assuming that the share of the premiums due to alcohol-related illnesses is equal to the portion of illnesses which are alcohol related, the seven study roads paid over $2.3 million in health insurance premiums for alcohol-related illnesses.

4.6.5 Costs of Alcohol-Related Illnesses and Disabilities in Other Studies

In the NIAAA-commissioned study on The Economic Costs of Alcohol Abuse and Alcoholism - 1975, (Berry et al, 1977) estimated the national health expenditure resulting from alcohol abuse at $12.74 billion. These expenditures for health and medical services make health care the second largest economic cost of alcohol misuse, problem drinking, and alcoholism. The following table, Table 4-9, reproduced from the Third Special Report to Congress (DHEW 1978) shows the percentage of alcohol-related health care costs, by type of expenditure.

To provide the most precise estimates possible, two adjustments were made in developing the following costs. First, the estimated health care costs included only those costs related to the alcohol abuse and not those which normally could be expected if the individual were not an abuser. In addition, the expenditures for major health care and medical training, education, and construction of facilities were adjusted to reflect only the share attributable to alcohol-induced problems (DHEW 1978).

4.6.6 Studies Reported in Occupational Literature

Studies reported in the occupational literature on the cost of alcohol-related illnesses and disabilities fall into two categories: (1) those which compare the sickness/disability rate of alcoholics with those of the nonalcoholic worker; and, (2) those which report a reduction in sick benefits paid after intervention of a rehabilitation program.

TABLE 4-9. ESTIMATED U.S. NATIONAL HEALTH EXPENDITURES AS RESULT OF ALCOHOL ABUSE IN 1975, ACCORDING TO TYPE OF EXPENDITURE

Type of Expenditure	Total Adult Population Health Expenditures (billion $)	Expenditures Resulting from Alcohol Abuse (billion $)	Expenditures Resulting from Alcohol Abuse as a Percentage of Total Expenditures (%)
Health service and supplies			
Hospital care	42.3	8.40	19.9
Physician's services	17.9	1.30	7.3
Dentist's services	6.2		
Other professional services	1.7	0.12	7.3
Drugs and drug sundries	8.9	0.28	3.2
Eyeglasses and appliances	2.0		
Nursing home care	8.8	0.19	2.2
Expenses for prepayment and administration	3.9	0.78	19.9
Government public health activities	3.0	0.33	13.1
Other health services	2.5	0.39	13.1
Research and medical facilities construction	6.1	0.78	13.1
Training and education	2.3	0.17	7.3
Total	$105.6	$12.74	12.1%

SOURCE. Data from Ralph Berry, James Boland, Charles Smart, and James Kanak, *The Economic Costs of Alcohol Abuse and Alcoholism—1975*. Report prepared for National Institute on Alcohol Abuse and Alcoholism under Contract No. ADM 281-76-0016. 1977

Among those comparing sickness rates of alcoholics versus nonalcoholics, Fisher (1971) reports that the alcoholic worker reflects an increase in minor illnesses and requires four times as much medical attention as the nonalcoholic worker. Similarly, Pace (1975) reports on a General Motors study which found that the sickness and accident claims of alcoholic workers were greater than four times those of the "normal" employee. Based on the findings of various firms which have conducted studies to estimate their costs due to alcoholism, Schramm (1974) suggests that medical insurance and health services costs range from two to three times greater for the alcoholic employee.

As early as 1959, Observer and Maxwell (1959) found that problem drinkers in one large company averaged two times more sick leave occurrences than a comparison group, and cost almost three times as much in sickness payments. The methodology for this study has been criticized, however, since the authors did not first determine whether or not any of the members of the comparison group were also problem drinkers, and because the definition of problem drinker was based solely upon supervisors' assessments.

Alander and Campbell (1975) reported on a study of Oldsmobile's Alcohol and Drug Recovery Program. The study was designed to compare changes in on-the-job behavior for participants in the recovery program and in a control group. One year after program involvement, the study group showed

a 5 percent drop in sickness and accident benefits, while the control group reflected an increase of 60 percent. Von Wiegand (1976) reported results from the General Motors program as an example of the effectiveness of employee alcoholism programs. The author reported a 70 percent reduction in the sickness and accident benefits paid to those treated, along with a 47 percent reduction in sick leave.

Hertzman and Montague (1977) reported on several studies which have developed estimates of savings resulting from the establishment of occupational alcoholism programs. One, at Illinois Bell, reported a savings of $459,000 due to a reduction in sickness disability cases. The average cost of a disability case was figured at $1,500 per case (50 days at $30/day for wage replacement).

Again, an article in the Journal of American Insurance (1975-76) reported on one study in a company of 18,000 employees. Among other findings on lost man hours, disciplinary actions, and injuries (all reduced), this study found that the costs for medical benefits were reduced 61 percent after a rehabilitation program was initiated.

4.7 ALCOHOL-RELATED GRIEVANCE PROCEDURES

Labor Relations Officers interviewed on the studied roads have records of only those alcohol-related grievances that reach their offices. In one recent year, these Labor Relations Officers heard 384 such cases. The alcohol-related grievances settled at lower levels of the organization are not recorded. By all accounts, locally settled grievances outnumber those heard by the Labor Relations Officers. The local chairmen we interviewed (five on each of the studied roads) represent a total of about 10,000 men or only 4 percent of the work force on the railroads studied. These local chairmen were asked by 42 men to assist them at disciplinary hearings for drinking rule violations last year. If the same rate of representation occurred in all locals, then local chairmen on all the roads would receive more than 900 requests per year to represent men involved in grievances over Rule G violations. Therefore, we estimate that one in every 600 employees filed a grievance over an alcohol-related rule infraction at the local level.

4.7.1 Impact of Alcohol-Related Grievance Procedures

Grievance procedures are unpleasant experiences for everyone involved. The cited employee faces the possibility of losing his job. Supervisors face the unpalatable situation in which they must collect evidence and witnesses to prosecute a fellow worker who may lose his job. Labor representatives face the possibility of losing the appeal. In cases where the evidence is clear, they know they will lose. The hearing officer has the burden of making the decision and the knowledge that a subsequent appeal may reverse that decision. The investigatory and prosecutorial atmosphere is fraught with accusations and denials. Supervisors and workers tend to be divided by these proceedings.

In addition to the difficulties grievance procedures cause everyone involved, they take up people's time: supervisors' time in preparing their case; labor's time in preparing their case; management's time in hearing, rehearing, and processing the case. This time costs money.

4.7.2 Costs of Alcohol-Related Grievances

At the local level, railroad companies incur costs of supervisory time in preparing and presenting cases at hearings and of company officicals and their staff in processing cases. Thirty-two of the interviewed supervisors estimated it takes 1.5 days to handle a drinking rule violation grievance procedure at the local level. Hearing Officers spent about one-half day on each case. Company costs for alcohol-related grievance procedures at the local level can be estimated by adding the cost of the time spent on them by supervisors and hearing officials. Using this method we estimate that the seven railroads incurred expenses in excess of $200,000 in handling these alcohol-related cases during the year studied. These estimates do not include typing and stenographic costs.

At the level of the Labor Relations Office, company costs include time of the Labor Relations staff and presentation time of involved supervisors. Labor Relations Officers were asked to estimate the amount of time staff in their offices spend on alcohol-related cases. Six officers gave estimates ranging from 1 percent to 5 percent. We multiplied the mean of their percentage estimates by the budgets for each of these six labor relations offices; this yields an estimate of $115,000 for the six railroads.

When appeals are made to the Labor Relations Office, a supervisor loses about half a day on the average to prepare and present the evidence. The costs of the Labor Relations Officers' time comes to about $20,000.

By adding these figures, we can estimate the total costs for alcohol-related grievance procedures for one year to be about $350,000. (These company costs do not include those of one large road.) Adjusted for seven roads, grievance costs total an estimated $408,000. Unions, too, expend time and money on these cases--roughly equivalent to the time and costs incurred by management.

4.7.3 Cost of Grievance Procedures in Other Studies

Only four specific references to the issue of alcohol-related grievances/ disciplinary actions were found in the occupational literature, and three of them concerned General Motors' programs. Pace (1975) reported on a GM study using a control group which showed that the alcoholic received over ten times the number of days laid off annually for discipline, and nearly half of these were for violation of Shop Rule Number 32 for drinking on the job or being under the influence.

An article in U.S. News and World Report (1974) reported the findings of a study of 101 participants in GM's Oldsmobile Division Program. Among other findings, the study showed a 78 percent reduction in grievances filed by the study group and a 63 percent decrease in disciplinary problems. It does not report resulting cost figures, nor does it specify the effect on time spent by labor relations personnel in handling disciplinary problems.

Alander and Campbell (1975) also reported findings concerning the Oldsmobile Program in Lansing, Michigan. This study was designed to compare changes in on-the-job behavior for 117 program participants and those in a comparison group. One year following program involvement, the study group showed a 100 percent reduction in grievances compared to only a 17 percent reduction among the comparison group. In terms of disciplinary actions, the study group experienced a drop of 70 percent, while the

comparison group increased by 190 percent for the same period. In another study reported in the Journal of American Insurance (1975-76) disciplinary actions against employees involved in a company rehabilitation program decreased 74 percent. The name of the company was not given.

4.7.4 Summary of Alcohol-Related Costs

We were unable to develop estimates for several categories which we know cost companies money. Other categories for which we do have costs represent minimum estimates. We only consider costs to railroad companies, and ignore the quite real and potentially substantial costs to unions, individuals, and society. For all these reasons, our estimates of total cost must be considered as minimal, conservative, and lower-bound. The actual costs due to alcohol must certainly be higher.

Total costs due to alcohol for the seven railroads were approximately $110 million in the year prior to the study. This represents almost $500 per employee, approximately 100 times the amount companies invest in employee assistance programs. Costs are distributed as follows:

	Thousands
1) Absenteeism	
Paid days lost (1 railroad)	$ 100
Lost productivity on missed days-- non-ops, 7 railroads	3,000
2) Reduced productivity while working	
"Half-man" days	900
Supervisory assessment	100,000
3) Injuries	
6 railroad estimate of $500,000, proportionally adjusted	583
4) Accidents/property damage	650
5) Employee assistance programs	1,000
6) Insurance premiums	2,300
7) Grievance process	
6 railroad estimate of $350,000 proportionally adjusted	408
TOTAL	$ 108,941

4.7.5 Other Work-Related Problems

During the study year, it is estimated, more than 900 workers were suspended when drinking was involved. In many of these cases, the formal citation may not have been for the violation of drinking rules even though they were broken (for example, suspension for coming in late for a person

coming in drunk or with a hangover). Also, in many cases, suspensions are imposed without a disciplinary hearing because workers waive investigations. About 700 workers are now working across the study roads who were dismissed at least once in their lives for drinking.

4.8 OFF-THE-JOB PROBLEMS

More railroad workers have off-the-job drinking problems than on-the-job drinking problems. In our survey of the work force, workers were asked:

How often in the past year their drinking caused such interpersonal problems as serious arguments and fights;

How often in their lifetimes drinking caused other more serious interpersonal problems such as deterioration of home life and marital estrangement

How often in the past year and in their lives drinking caused such other problems as accidents and legal problems; and

How often in their lives drinking caused other serious problems such as financial problems and health problems.

The tables in this section present the percentages of drinkers, not of workers, in the work force who have had these kinds of problems. Prevalence rates for the entire work force can be gotten by multiplying the percentages reported in this section by the corresponding percentages of current drinkers for current problems and lifetime drinkers for lifetime problems (Section 3, Table 3-1).

4.8.1 Interpersonal Problems in Last Year

Table 4-10 shows the percentages of railroad drinkers who have had interpersonal problems in the last year. The first part of the table shows the breakdown by railroad and the second section, by occupational category. The figures in this table represent the percentages of drinkers who have had each kind of problem at least once.

These figures show that almost one third of railroad drinkers drank in ways that upset their spouses. Over half of these drinkers did so more than once. Almost 5 percent of all drinkers did so at least six times during the year of 1978. The equivalent of about half of the drinkers whose drinking upset their spouses had serious arguments with them as a result of drinking. Here, again, for more than half the drinkers involved, arguments took place more than one time. About 2 percent of all drinkers had drinking-related arguments with their spouses six times or more last year. An estimated 4,500 drinkers, or 2 percent of the sample struck their spouses while drinking last year. There is no difference at all in the percentages of drinkers on individual railroads who struck their spouses.

On Railroad B where the highest percentage of drinkers are involved in fist fights, we find four times the percentage involved in them as on Railroad C, where the lowest percentage of drinkers is involved. This difference is statistically significant.*

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*See Appendix A.

TABLE 4-10. PERCENTAGE OF DRINKERS HAVING DRINKING-RELATED INTERPERSONAL PROBLEMS AT LEAST ONCE IN LAST YEAR BY RAILROAD/OCCUPATIONAL CATEGORY

Railroad	Spouse Upset	Serious Argument with Spouse	Hit Spouse	Fist Fight
A	33	17	2	2
B	28	15	2	4
C	18	9	2	1
D	38	18	2	2
E	25	14	3	3
F	25	16	2	3
G	30	16	2	2
Occupational Category				
Exempt	28	12	1	1
Ops	30	18	2	4
Non-Ops	27	15	2	3

Table 4-10 shows only slight differences among the occupational groups except in the case of fist fights. Exempt workers were much less frequently involved than the other two classes in fist fights.

The data reported here on the prevalence of alcohol-related interpersonal problems are not exactly comparable to similar data from the national studies on men conducted by Cahalan et al. Behaviors reported are similar but not identical. Some women are included in our sample. Cahalan considered behavior in the last three years. We inquired about behavior in only the previous year. Notwithstanding these differences, comparative approximations are possible and illuminating. Approximately 13.5 percent of males in the general population reported that their wives became angry or took more serious steps in reaction to their drinking. This category is roughly equivalent to our "spouse upset" category in which about 22 percent of our respondents replied affirmatively. About 9.4 percent of the men in the general population reported a combination of feeling aggressive or cross, getting into a fight, or getting into a heated argument while drinking. This combination of behavior is roughly comparable to the percentages we obtained for "serious argument with spouse," "hitting spouse," or "getting into a fist fight." About 13 percent of our respondents said they had manifested these kinds of belligerent behavior at least once last year. Even without taking the differences in the study periods into account--males in the national studies had three times the opportunity--higher percentages of railroad workers appear to be involved in episodes of

alcohol-related belligerence than men in the general population.

4.8.2 Interpersonal Problems in One's Lifetime*

Table 4-11 shows the percentages of drinking workers who have had very serious interpersonal problems resulting from their drinking at some point in their lifetimes. In most cases, the problems reported probably represent events culminating from a continuing pattern and not from a single episode of unacceptable drinking. The three problems in the table are deterioration of a worker's home life, abandonment by spouse, and loss of friends.

TABLE 4-11. PERCENTAGE OF DRINKERS WITH VERY SERIOUS INTERPERSONAL PROBLEMS IN THEIR LIFE BROUGHT ON BY DRINKING, BY RAILROAD/OCCUPATIONAL CATEGORY

Railroad	Home Life Deterioration	Spouse Left	Lost Friends
A	9	2.3	1.4
B	8	1.8	1.1
C	6	1.3	0.6
D	10	1.6	1.7
E	8	1.7	1.8
F	5	2.2	1.0
G	6	1.7	0.3

Occupational Category			
Exempt	6	0.7	0.5
Ops	9	2.4	1.3
Non-Ops	7	1.9	1.3
Weighted Average	7	1.8	1.1

*All prevalence rates reported for lifetime problems are based upon data which we had to edit in ways which actually changed respondents' answers. We took this drastic step because of obvious evidence of response errors in the original data. The effect is to lower our estimates of prevalence of each of the lifetime problems.

Anywhere from 5-10 percent of railroad workers who drink have experienced deterioration of their home life. About one-quarter as many have had their spouses leave them. Many have lost their friends. In a work force where about 175,000 workers drink, these small percentages represent many people. For example, they mean that over 10,000 have gone through a deterioration of their home life, over 2,000 have lost a spouse, and over 1,000 have lost friends because of their drinking. Section B of Table 4-11 shows that although they are not without problems, exempt workers seem less likely to have these problems than either the operating or nonoperating personnel.

Comparisons of our data with national figures must be made with caution both because of differences in question wording and because our survey was conducted by mail, while the national study used personal interviews. Bearing this in mind, 11 percent of the national sample of drinking males reports having experienced deterioration of home life because of drinking. This figure is one and one half times the size of ours, and suggests that either railroad workers do not have this problem with the frequency of males in the general population, that they do not gauge the condition of their home life in the same manner as males in the general population, or that the questions are sufficiently different to be measuring different behaviors.

When one draws comparisons between actual, dichotomous phenomena, the results are more comparable. Almost 2 percent of drinking American railroad workers have had spouses leave them because of the workers' drinking. The comparable figure for males in the American population is less than 1 percent (0.9 percent). Here we see that with an actual, observable behavior, the prevalence of the problem is twice as great among railroad workers as it is among males in the general population. Interestingly, we find that the frequency is much higher among the crafts workers, expecially the operating crafts, than among the exempt workers. This difference may be partly due to the greater amount of time operating crafts workers must spend away from home.

4.8.3 Automobile Accidents and Injuries During Last Year

Table 4-12 shows the percentage of railroad workers who drink who have had either automobile accidents or injuries resulting from drinking. Again, the data are reported by railroad and by occupational category.

About 2 percent, or an estimated 3,500 drinkers were involved in an alcohol-related traffic accident during the year studied. We could not locate a comparable estimate for males in the general population. About 1.5 percent, or over 2,500 workers had alcohol-related injuries off-the-job last year. This is about 5 times the rate reported for males in the general population. There is wide variation among drinkers on different roads in these two kinds of accidents.

One half of one percent of the drinking workers reported having an accident after or while drinking during the year on Railroad C, whereas almost 4 percent reported such a frequency on Railroad E. Similarly, on Railroad D, the likelihood of injuring oneself after or while drinking is three times as great as it is on Railroad C. The table shows that the exempt workers are less likely to have automobile accidents or hurt themselves than the operating and nonoperating classes of workers.

TABLE 4-12. PERCENTAGE OF DRINKERS HAVING AUTOMOBILE ACCIDENTS OR INJURIES RESULTING FROM DRINKING, BY RAILROAD/OCCUPATIONAL CATEGORY

Railroad	Auto Accidents	Self-Injury
A	1.4	1.3
B	2.2	1.2
C	0.5	0.8
D	3.1	2.4
E	3.7	1.4
F	2.7	2.3
G	1.0	1.1

Occupational Category		
Exempt	1	0.4
Ops	2	2.0
Non-Ops	2	1.5

4.8.4 Automobile Accidents and Injuries to Another in One's Lifetime

Table 4-12, above, showed the percentage of drinkers who had automobile accidents or injured themselves in any way at least once in the year studied. Table 4-13, shows the percentage of drinkers who have had an automobile accident or who injured someone else seriously in their lifetime.

Almost 5 percent, or an estimated 8,000 workers, who currently drink have been involved in an alcohol-related automobile accident at least once in their lives. About 1.5 percent or an estimated 2,500 workers seriously injured another person at some time in their lives because of their drinking. Variations again exist among the roads and among the job categories. Railroad D's rates for auto accidents and injuries to others were more than three times greater than Railroad C's. These differences are statistically significant.* Smaller percentages of exempt workers were involved in automobile accidents than operating and nonoperating workers. The fact that some percentages for injuries inflicted on others are zero probably reflects sampling error and an inability to discover a very infrequent phenomenon in a sample the size of ours. We do not assume that Railroads B, E, and F really have no employees with such experiences; only that they have very few.

* See Appendix A.

TABLE 4-13. PERCENTAGE OF DRINKERS HAVING AUTO ACCIDENTS OR SERIOUSLY INJURING ANOTHER IN LIFETIME, BY RAILROAD/OCCUPATIONAL CATEGORY

Railroad	Auto Accident	Serious Injury to Another
A	6	0.1
B	4	0.0
C	2	0.2
D	7	0.8
E	6	0.0
F	4	0.0
G	3	0.1
Occupational Category		
Exempt	3	0.2
Ops	6	0.2
Non-Ops	4	0.1

4.8.5 Legal Problem in Year of Study

Table 4-14 shows the percentage of drinkers having problems with police over drinking the year reported on.

TABLE 4-14. PERCENTAGE OF DRINKERS HAVING ALCOHOL-RELATED LEGAL PROBLEMS IN THE PAST YEAR BY RAILROAD/OCCUPATIONAL CATEGORY

Railroad	Sent Home by Police	Arrested
A	0.7	0.8
B	0.6	1.4
C	0.6	1.2
D	0.9	0.6
E	0.6	2.1
F	0.5	1.4
G	0.6	1.2
Occupational Category		
Exempt	0.4	0.5
Ops	0.5	0.6
Non-Ops	0.8	1.8

Fewer than 1 percent of drinking workers employed by the seven railroads were sent home by police during the year studied. A little over 1 percent, or about 2,000 railroad drinkers were involved in drinking-related arrests last year. Cahalan and Room (1974) did not specifically ask their respondents about being sent home by police or being arrested, but they did ask some similar questions. They reported that 9 percent of the male population had gotten in trouble with the law because of drinking, sometimes in relation to driving; 3.4 percent had problems related to one or the other and 1.4 percent had been questioned or warned because of their drinking. In just about every case, higher percentages of railroad drinkers confronted by police in an alcohol-related incident were arrested than were sent home. Three time more nonoperating personnel were arrested than exempt and operating personnel.

4.8.6 Legal Problems in One's Lifetime

Table 4-15 shows the frequency of railroad workers' having various legal problems in their lifetime. The two problems we are primarily concerned about are whether the respondents had been arrested or whether they had been sued for something done while under the influence of alcohol.

TABLE 4-15. PERCENTAGE OF RAILROAD DRINKERS WITH DRINKING-RELATED LEGAL PROBLEMS AT LEAST ONCE IN LIFETIME BY RAILROAD/OCCUPATIONAL CATEGORY

Railroad	Arrested	Sued
A	3	0.1
B	2	0.0
C	2	0.0
D	4	0.5
E	4	0.2
F	2	0.5
G	4	0.5

Occupational Category		
Exempt	1.8	0.1
Ops	2.7	0.4
Non-Ops	3.5	0.2

Approximately 3 percent of drinkers were arrested and less than .5 percent were sued for drinking-related offenses in their lifetimes. These figures for the national populations are not available although we do know that no more than 1.6 percent of the national population report having "trouble with the law" because of drinking. (Clark, SRG, personal communication, 1979)

Many of the patterns of Table 4-14 are repeated in this table. There is not a great deal of variation in the arrest rate among workers on the

railroads studied and, in fact, Railroad E, although the percentage is still high, does not stand out from the other railroads as it did when problems that occurred in the study year were looked at. Looking at Section B of Table 4-14, we see the same pattern repeated here with respect to the likelihood of being arrested. Higher percentages of nonoperating personnel were arrested for drinking-related incidents during their lifetime than were percentages of operating and exempt workers. In addition, higher percentages of operating personnel than exempt workers were arrested. Figures in the column labeled "Sued," show that it is not a common practice for an individual to be sued for something done while under the influence of alcohol. No one in the samples from Railroad B and Railroad C were ever sued for such an offense.

4.8.7 Financial Problems in Lifetime of Respondents

Table 4-16 shows the frequency with which two financial problems have occurred in the lifetimes of the respondents. The first of these is the loss of a home and the second is financial problems resulting from drinking.

TABLE 4-16. PERCENTAGE OF RESPONDENTS WHO LOST THEIR HOMES OR HAD FINANCIAL PROBLEMS BECAUSE OF THEIR DRINKING BY RAILROAD/OCCUPATIONAL CATEGORY

Railroad	Lost Home	Had Financial Problems
A	0.7	5
B	0.6	2
C	0.6	1
D	0.5	4
E	0.2	5
F	0.8	4
G	0.6	3

Occupational Category		
Exempt	0.1	2
Ops	0.9	4
Non-Ops	0.6	4

About one half of one percent of railroad drinkers have lost their homes because of their drinking. This figure seems small until one takes into account that in 1977 only 2 percent of all home owners defaulted on mortgage payments for any reasons at all. If the default rate for

railroad drinkers is the same as for homeowners at large, then 25 percent of mortgage defaults among railroad drinkers is alcohol related. Smaller percentages of workers from Railroad E lost their homes than workers on other roads. Smaller percentages of exempt workers lost their homes than workers in the operating or nonoperating classes.

Cahalan's national sample indicated that 4 percent of the population felt that drinking had been harmful to their financial position at some time during their lifetime. When the percentages that "had money problems" are adjusted to reflect percentages of drinking workers with those problems, we find that these numbers are lower than the general population. One possible explanation for this is that railroad work is relatively secure compared to work in general. That is, unions can do a lot to help secure the financial position of a drinking worker on the railroad. Many workers do not have such support. It could conceivably be argued that, if this is the case, the exempt workers should not show fewer financial problems than either the operating or the nonoperating personnel. One should also remember that on the railroads, most exempt workers have come up through the union ranks. Another possible explanation is methodological: Cahalan's questions are far more general and less specific and may include such minor incidents as losing a foolish bet made while drinking. The figures, therefore, may not be directly comparable.

Only 20 percent as many drinkers on Railroad C had money problems as individuals on Railroad A or Railroad E. Section B shows that exempt workers were about one-half as likely as the operating or the nonoperating personnel to have had money problems. These differences are statistically significant.*

4.8.8 Health Problems in One's Lifetime

Table 4-17 shows the percentages of drinkers who believe that drinking has hurt their health and the percentages of drinkers who were ever told by a doctor that they drink too much.

Table 4-18 presents the percentages of drinkers that reported at least one general problem due to drinking in the past year. General problems include: getting into a fist fight, having an automobile accident, being sent home by the police, injuring one's self when not at work, and being arrested.

Exempt workers consistently reported fewer problems than the operating or the nonoperating personnel. In addition, Railroad C shows a lower frequency for problems than the other railroads.

Cahalan et al (1974) used a similar item, asking respondents about a three-year period. They found that 4.8 percent either agreed with a statement similar to ours and said that a doctor had told them to cut down drinking or had an accident or been hurt because of their drinking. In their study, 8.4 percent of respondents had either agreed with a statement similar to ours. had been told by a physician to cut down drinking, had been involved in an accident, or had had an injury because of drinking.

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*See Appendix A.

TABLE 4-17. PERCENTAGE OF DRINKERS WHOSE HEALTH WAS HURT BY DRINKING OR WERE TOLD BY DOCTOR THEY DRINK TOO MUCH BY RAILROAD/ OCCUPATIONAL CATEGORY

Railroad	Believe Drinking Has Hurt Their Health	Told By Doctor They Drink Too Much
A	5	0.6
B	4	1.5
C	3	1.3
D	5	1.1
E	3	1.5
F	4	1.9
G	3	0.7

B. By Occupational Category Occupational Category	Believe Drinking Has Hurt Their Health	Told By Doctor They Drink Too Much
Exempt	2	1.0
Ops	6	1.2
Non-Ops	4	0.5

TABLE 4-18. PERCENTAGE REPORTING GENERAL PROBLEMS IN PAST YEAR

Railroad	Exempt	Ops	Non-Ops	Weighted Average
A	2	8	5	5
B	2	5	8	6
C	1	3	3	2
D	2	2	9	7
E	2	7	8	7
F	0	9	5	5
G	3	5	5	5
Weighted Average	2	6	6	5

4.8.9 Summary

Table 4-19 shows the percentage of drinkers on each of the railroads who reported at least one problem at home because of drinking.

TABLE 4-19. PERCENTAGE OF DRINKER REPORTING AT LEAST ONE PROBLEM AT HOME DUE TO DRINKING IN PAST YEAR

Railroad	Exempt	Ops	Non-Ops	Weighted Average
A	31	34	32	33
B	28	32	25	28
C	15	20	18	18
D	36	43	37	38
E	22	30	24	25
F	38	29	24	25
G	32	29	29	30
Weighted Average	28	30	27	28

These percentages are just about identical to the percentages of workers reporting having had a spouse upset because of their drinking.

Finally, Table 4-20 shows the percentage of workers who have had at least one serious, life-altering problem (for example, loss of one's home, arrest, or divorce) in their lifetime as a result of their drinking.

TABLE 4-20. PERCENTAGE OF WORKERS HAVING RADICAL, LIFE-ALTERING PROBLEMS AT LEAST ONCE IN LIFETIME AS RESULT OF DRINKING

Railroad	Exempt	Ops	Non-Ops	Weighted Average
A	8	19	12	13
B	6	10	12	10
C	5	5	4	4
D	7	14	14	13
E	8	14	8	10
F	8	15	7	9
G	6	10	7	8
Weighted Average	7	12	9	9

As the table shows, during the course of their lives, large numbers of railroad workers have had fairly serious problems resulting from drinking. Estimates range from 4 percent of the nonoperating personnel on Railroad C having at least one "life-altering" problem to 19 percent of the operating personnel on Railroad A having had at least one problem. As with current problems (Table 4-19) we note that exempt workers have had the fewest problems and operating workers the most.

5. PROBLEM DRINKERS AND CORRELATES OF PROBLEM DRINKING

Thus far in this report, we have presented findings on the prevalence and frequency of various kinds of drinking practices and problems. We have not yet presented a way of deciding what kind of drinking-related phenomena are troublesome enough to constitute problem drinking, nor have we attempted to estimate the number or describe the characteristics of problem drinking. In this chapter, we describe four methods of defining and measuring problem drinking, estimate the prevalence rates of problem drinkers by road and job category in accordance with each of these methods, suggest a method other roads can use to develop similar estimates, and present statistically significant correlates of problem drinking.

According to problem-drinking scales used in national studies, an estimated 19 percent of all railroad workers are problem drinkers compared with 15 percent of males in the population at large. According to a scale based on the views of problem study directors, 15 percent are problem drinkers. Our very narrow definition yielded a 12 percent estimate for problem drinkers among railroad workers. And according to a scale derived by combining our method with the nationally used scale, 20 percent of railroad workers are problem drinkers.

No single variable or set of variables examined in this study constitutes a problem-drinking profile that can be used as the basis for identifying at risk groups in the railroad workforce. A number of variables do show statistically significant differences between problem drinkers and non-problem drinkers. Principal among these variables are sex and age. Problem drinkers tend to be young and male. Other statistically significant correlates include spending long periods of time away from home, feeling that one's job is not worthwhile, and holding a low estimate of one's own job performance.

We defined and measured problem drinking in five different ways. The first method used scales similar to those developed by Social Research Group (Cahalan, 1970) and RAND Corporation (Johnson et al., 1977). The second method is the one developed for this study. The third combines the Social Research Group's and this project's methods. The fourth method--the program directors'--is a slight modification of ours. The final method is self-identification by respondents to our general survey.

5.1 METHODS USED NATIONALLY

5.1.1 National Definitions

Both the Social Research Group (SRG) (Cahalan, 1970) and RAND Corporation (Johnson et al., 1977) have developed definitions of problem drinkers. The Social Research Group's scale was developed to be applied to the Group's own national survey data and was, therefore, tailored specifically to SRG's conception of problem drinking and to the survey instruments.

RAND's work, on the other hand, was part of a trend study of American drinking patterns and included the compilation of statistics from a number of sources including surveys by Louis Harris, Opinion Research Corporation, and Response Analysis Corporation. The conception of problem drinking used by RAND had to be broad enough to allow for comparisons among different types of data. These two approaches to defining problem drinking will be summarized briefly below. The reader is advised to refer to the original source studies for a complete explanation of the SRG and RAND methodologies, many of whose subtleties and details must be omitted from our discussion in the interest of brevity.

For the SRG study, Cahalan developed "problem drinking scores" for each respondent by summing up graded responses in each of 13 "problem areas." In each area, the respondent could pick a score between 0 and 4 points depending upon the severity of problems in the area. Points were assigned as whole numbers and represented "steps." Someone who scored "Step 2" for a problem area had a more serious problem than someone who scored "Step 1" in that area. Cahalan assigned problems to steps on the basis of the apparent seriousness of the problems. Generally speaking, the overall problems score was developed by weighting the seriousness of the problems in each of the areas by the following values:

Severe 6
Moderate 3
Mild 1.

The problems scores for each of the areas were added together and the sum evaluated according to whether or not it exceeded an arbitrary value of seven.

Cahalan resisted establishing a cut-off value for describing who is and who is not a problem drinker both because of the inherent arbitrariness of such a value and because establishing a cut-off could mask the multidimensional nature of problem drinking. Problem drinking is not a unitary concept. For SRG the concept is composed of elements in the following 13 categories:

Heavy intake

Binge drinking

Psychological dependence

Loss of control

Symptomatic drinking (for example, drinking first thing in the morning)

Belligerence

Problems with spouse

Problems with other relatives

Problems with friends or neighbors

Job problems

Police problems

Health and injury problems

Financial problems.

RAND had to vary the definition of problem drinker depending upon the particular data being considered. In general, RAND looked at responses to 16 items that approximated the following six SRG categories:

Symptomatic drinking

Psychological dependence

Binge drinking

Loss of control

Belligerence

Heavy intake.

In addition, for some data, a minimum alcohol consumption criterion was added. This can be interpreted as another manifestation of "heavy intake."

RAND did not have Cahalan's compunction about expressing problem drinking as a unitary concept. It considered problem drinkers to be those individuals who had frequent symptoms. Thus problem drinkers were defined as those who responded "frequently" on 4 or more of the symptoms, "sometimes" on 8 or more (but none frequently), or combinations of responses with 1, 2, or 3 items answered "frequently" combined with 6, 4, and 2 items answered "sometimes" respectively.

5.1.2 Estimates Using National Scales

SRG (Cahalan, 1970) estimated that 9 percent of all American adults and 15 percent of American men are problem drinkers. Comparable figures from RAND (Johnson et al., 1977) are 16 percent for males and 10 percent for the general population (calculated from estimates given for males and females). Using the SRG scale, we found that 19 percent of railway workers are problem drinkers.* Table 5-1 gives comparative railroad problem-drinking rates by road and category.

We note in this table that the only group with a lower prevalence rate or problem drinkers than the national estimate for males is the exempt category. Similarly, only one railroad had a lower prevalence rate of problem drinkers than the national estimate. That railroad is Railroad C.

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*To adjust for three scales that were part of the SRG index but for which we did not have comparable items, all of our SRG prevalences have been multiplied by a factor of 1.4.

TABLE 5-1. PERCENTAGE OF RAILROAD WORKERS DEFINED AS PROBLEM DRINKERS BY SOCIAL RESEARCH GROUP CRITERIA (ADJUSTED FOR SCALE DIFFERENCES)

Railroad	Exempt	Operating Personnel	Nonoperating Personnel	Weighted Average
A	12	34	23	24
B	11	17	23	18
C	6	11	11	10
D	7	21	24	21
E	11	25	18	19
F	14	30	23	24
G	17	21	19	19
Weighted Average	11	23	20	19

In some categories we note quite high prevalence rates. For example, within the operating class on Railroad A, more than one worker in three is a problem drinker by this definition. Even where estimates are relatively low, however, the prevalence rate of problems is in an absolute sense, high. For example, one in ten workers on Railroad C is a problem drinker, and one in nine exempt workers across roads is a problem drinker.

5.2 METHOD OF ESTIMATING PROBLEM DRINKERS

5.2.1 Project REAP's Definition of Problem Drinker

Neither the RAND nor SRG conception of problem drinkers was suitable for Project REAP's purposes. Both scales fell short in some aspects of combining the following three criteria:

Attention to frequency

Attention to severity

Specific problem areas.

In general, the SRG scale does not deal with the frequency of problems. While it is true that in some of its 13 problem areas, frequency of occurrence is used to determine step placement, in others it is not. Also, although RAND does emphasize frequency in its determination of problem drinking, the categories used to define frequency are vague. For example, a response of "frequently" by one respondent may not mean the same as "frequently" to another respondent. We wanted our definition of a problem drinker to take greater account of specific frequency information.

The RAND index did not take into account the severity of the problem, either. For making a determination about drinking, the index treated problems (symptoms) that occurred with equal frequency as though they were of equal severity. For example, drinking at lunchtime is equally as serious a problem as drinking in binges or losing control while drinking.

SRG, on the other hand, tried to deal with differential severity of problems, but their method seemed not to go far enough for our purposes. First, their report gives no indication of who determined step criteria and weighting factors or specifically how they were determined. Second, each of their weights and steps have integer values. Allowing for decimal number problem scores would have allowed greater discrimination of problem severity and provided a better understanding of the relative severity of problems. Again, we tried to improve upon these points in the development of our definition of problem drinker.

Certainly the greatest problem with using one of the earlier problem drinking definitions is that our concept of problem drinker is much different. Both SRG and RAND emphasize attitudes, "symptoms" and states of mind in their definitions of problem drinker.* Thus, by the RAND scale, a drinker can score points for hiding a bottle or getting sad while drinking, for example. On the SRG scale, a drinker can receive points for "drinking to forget," heavy drinking, feeling cross, or having a few drinks before a party. All of the actions, feelings and opinions used by SRG and RAND may indicate developing or existing dependence on alcohol. They do not, however, indicate problems as conceived by Project REAP.

We have, from the start, been interested only in objective physical and behavioral consequences of drinking. Attitudes, mood states, and consumption patterns do not fall within our definition of drinking problems, although they may very well be precursors or correlates to the behavioral phenomena that are of concern to us.

Similarly, our definition of problem drinker is much different from that of the two organizations mentioned above. By our definition, problem drinkers are those "whose use of alcholic beverages is regularly and directly linked to private or public harm and is seen as the source of difficulties in one or more aspects of his or her life. The key concepts are regularity and harm. The drinker who has "occasional" trouble and the drinker whose condition leads only to mood alterations or behaviors that are not objectively harmful is not considered a problem drinker under this definition.

5.2.2 Development of Frequency Severity Index

Our definition of problem drinkers is operationalized through use of a Frequency-Severity Index (FSI). The FSI takes account of how frequently specific problems occur and how severe each of these problems is relative to other problems and also in an absolute sense. The FSI does not consider mental states or consumption patterns.

We first developed a list of 17 problems that an individual might have as a consequence of drinking or in association with drinking. Many of the items on the list are similiar or identical to items used by SRG. The emphasis in our work, however, remained on manifestation of "private or public harm" as outlined in our definition. In addition, as our project is, above all, an occupational study, we concentrated heavily on work-related problems.

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* SRG (Cahalan and Room, 1974) later placed greater emphasis on a "tangible consequences score" which was more in accord with the REAP problem drinker definition. Fourteen percent of their male sample would be considered problem drinkers by this definition.

Our 17 problems fell into three major categories: events at home, events at work and general events. After the list had been generated and pretested, the final list was circulated among 17 working adults to determine the seriousness of each of the problems as a consequence of drinking. For each problem these 17 people independently assigned severity scores ranging from 0, which represented "no drinking at all," to 10, which represented "the most serious problem a person could have." The average (mean) rating for each problem was assigned as the severity score.

The raters in no way represent a random sample or a cross-section of the American public. They are simply 17 individuals with a variety of backgrounds and specialties, some with alcohol knowledge and some without, who were willing to consider each of the problem areas thoughtfully and to rate them. The 17 scores, therefore, have no great validity beyond the study, but they do represent a view about both the absolute and relative seriousness of the problems by a group of workers who are independent of the project. Table 5-2 presents the 17 problems and their assigned severity scores.

Knowing the severity of each of the problems is only half the task, however. A minor problem that occurs repeatedly may be as serious as or more serious than a major problem that occurs only once. Therefore, when questioned about these problems, respondents to our project's survey were asked to indicate how many times they had had each problem during the past year. Although we had hoped to use exact frequency of occurrence here, pretesting indicated that many respondents did not answer the question in an open-ended format. Consequently, frequencies of occurrence had to be abstracted from categorized responses. The midpoints of categories were used as frequency indicators for all except the last category which was open-ended and for which a value of 20 was used. Categories and frequency indicators are shown in Table 5-3.

Having obtained both severity scores and frequency scores, a frequency-severity score for each problem was computed by multiplying the severity score by its corresponding frequency score. A total Frequency-Severity Index (FSI) was computed by simply adding together the individual frequency-severity scores.

Since the two key elements of our definition of problem drinkers are "private or public harm" and repetitiveness, and since each of the problems listed in Table 5-2 represents private or public harm, what remains before we can count problem drinkers is to define repetitiveness. Again, we tried to consider the severity of problems.

TABLE 5-2. DRINKING-RELATED PROBLEMS

Problem	Severity
1. Events at Home	
a. Spouse Upset	3.38
b. Serious Argument with Spouse	5.00
c. Hit Spouse	7.63
d. Hit Children	7.94
2. Events at Work	
e. Boss Upset	4.94
f. Self Injury at Work	6.13
g. Injure Another at Work	8.00
h. Serious Argument at Work	5.24
i. Miss Work Because Drunk or Hungover	4.64
j. Could Not Do Job Because Drunk or Hungover	5.18
k. Suspended	7.47
l. Serious Argument with Customer	6.06
3. General Events	
m. Fist Fight	7.00
n. Automobile Accident	7.18
o. Sent Home by Police	6.59
p. Self Injury Not at Work	5.94
q. Arrested	7.76

TABLE 5-3. FREQUENCY CATEGORIES AND INDICATORS

Frequency Category	Indicator
Not at All	0.0
1 Time	1.0
2-5 Times	3.5
6-10 Times	8.0
More than 10 Times	20.0

We looked under the general events problems and used the median severity (7.0) as a moderate to serious problem which, if it occurred regularly, would certainly be cause for concern. We then proposed that if any problem with a rating of 7.0 occurred more than once a year as a result of drinking, then our criterion for repetitiveness would be met.

If a problem with a severity score of 7.0 occurred more than once, it would be weighted by at least 3.5 (the frequency indicator for problems occurring two to five times). The product of this multiplication is 24.5, and we adopted this figure as the criterion for our definition of problem drinker. Respondents with FSI scores equal to or exceeding 24.5 were classified as problem drinkers.

It should be emphasized that this is an extreme definition of problem drinker. Ten of the 16 problems reported in Table 2 have severity scores less than 7.0. These behaviors or combinations of them would have to have occurred a minimum of up to six times (depending upon the particular combination) in the past year in order for the respondent to receive an FSI score exceeding 24.5. Such an approach should, therefore, be considered a conservative counting of problem drinkers, and our estimates of the number of problem drinkers should be lower than those developed under most other definitions of problem drinking.

5.2.3 Estimates Using Frequency Severity Index

Table 5-4 shows the percentage of workers by railroad and by occupational category who are problem drinkers on each of the railroads under our definition. As expected from previous findings, we see that the precentages of problem drinkers are lowest on Railroad C and in the exempt work category. Otherwise, the results are fairly constant across railroads and the other occupational groups.

TABLE 5-4. PERCENTAGE OF WORKERS WHO ARE PROBLEM DRINKERS

Railroad	Exempt	Ops	Non-Ops	Weighted Average
A	11	15	16	15
B	11	15	16	14
C	4	6	5	5
D	9	14	16	15
E	7	17	10	11
F	11	17	11	13
G	11	16	12	13
Weighted Average	9	14	12	12

TABLE 5-5. PERCENTAGE OF DRINKERS WHO ARE PROBLEM DRINKERS

Railroad	Exempt	Ops	Non-Ops	Weighted Average
A	13	20	20	18
B	13	18	19	17
C	6	11	9	9
D	9	20	21	19
E	9	23	15	16
F	12	21	15	15
G	11	15	16	14
Weighted Average	11	19	16	16

The table shows that across all roads and occupational categories, approximately one-eighth of all railroad workers must be classified as problem drinkers even by our conservative criteria. When one considers only drinkers rather than all workers (Table 5-5), this figure rises to about one-sixth, or 16 percent of railroad workers who drink are problem drinkers on the study railroads.

5.2.4 Directors' Definition and Estimates

Through interviews with directors of Employee Assistance Programs on the seven study railroads and throughout the industry, we discovered that their working definition is much looser than ours. While they would certainly accept that anyone who met our criterion is a problem drinker, they also consider that anyone who has had at least one work-related problem during the past year is a problem drinker. Table 5-6 shows the percentage of all railroad workers who would be classified as problem drinkers by these standards.

TABLE 5-6. PERCENTAGE OF WORKERS WHO ARE PROBLEM DRINKERS UNDER PROGRAM DIRECTORS' STANDARDS

Railroad	Exempt	Ops	Non-Ops	Weighted Average
A	15	22	20	19
B	11	15	17	15
C	4	7	5	5
D	9	17	20	18
E	9	19	12	14
F	12	24	17	18
G	18	20	14	16
Weighted Average	11	17	15	15

TABLE 5-7. PERCENTAGE CONSIDERED PROBLEM DRINKERS BY SRG OR RAILROAD EMPLOYEE ASSISTANCE PROJECT DEFINITION

Railroad	Exempt	Ops	Non-Ops	Weighted Average
A	16	34	24	25
B	16	21	23	21
C	8	11	11	10
D	11	25	25	23
E	14	24	18	19
F	18	30	23	23
G	19	24	21	22
Weighted Average	14	24	21	21

5.2.5 Combined SRG and REAP Methods

a. Combined Definition

There is a very strong and statistically significant relationship between being classified as a problem drinkers by the SRG definition and being classified as such by our definition (64 percent of those who would be classified as problem drinkers by our definition, would be so classified by SRG's. Conversely, 56 percent of those who are problem drinkers according to the SRG definition are also problem drinkers by ours.) If we accept the validity of both definitions, we can define problem drinkers as anyone who satisfies either the SRG definition or ours.

b. Estimates Based on Combined Definition

Table 5-7 presents the prevalence rates for problem drinking as estimated by a combined SRG-REAP definition.* Such a combined index creates an "either-or" condition and identifies those individuals who would be considered problem drinkers either by one definition or the other. It casts a wider net and recognizes that there is validity in both definitions.

*To form these combined estimates, we adjusted the frequency of those classified as problem drinkers on the basis of the SRG index who were not so classified by the REAP index to compensate for the missing subscales in the REAP investigation.

c. Estimates Based on Self-perceived Problem Drinking

Workers in our general survey were asked if they ever thought they or other members of their families had a drinking problem. Table 5-8 shows that 7 percent of the drinkers in our sample think sometimes that they personally have such a problem.

TABLE 5-8. PERCENTAGE OF DRINKERS WHO SOMETIMES THINK THEY HAVE DRINKING PROBLEMS

Railroad	Exempt	Ops	Non-Ops	Weighted Average
A	5	10	6	7
B	5	6	9	7
C	4	4	5	4
D	7	8	12	11
E	5	8	8	8
F	4	5	6	5
G	5	4	7	5
Weighted Average	5	6	7	7

Applying this figure to the estimated 75 percent of the study population who drink, we conclude that a total of over 12,000 employees on the seven railroads studied currently believe themselves to have drinking problems. If this number of clients showed up at the seven Employee Assistance Programs (EAPs), there would not be enough resources available to handle them.

Table 5- 9 shows that more than twice the number of employees who believe themselves to have drinking problems, also believe another family member has drinking problems.

TABLE 5-9. PERCENTAGE OF WORKERS WHO THINK SOMEONE IN FAMILY HAS DRINKING PROBLEM

Railroad	Exempt	Ops	Non-Ops	Weighted Average
A	15	13	17	15
B	15	13	16	15
C	12	9	13	12
D	15	15	24	20
E	19	16	16	16
F	10	10	16	14
G	15	13	17	15
Weighted Average	15	13	17	15

All of the railroad Employee Assistance Programs help families of employees as well as the employees themselves. If the EAPs are to continue to serve these family members and if this function is to be publicized throughout the work force, it is clear that further resources will have to be made available to deal with the potential caseload.

The numbers presented in these tables are important because one group that railroad Employee Assistance Programs should certainly want to see is that which has diagnosed its own problem, for if a worker thinks that he or she has a drinking problem, the chances are very good that he or she is right. In fact, in our data we see that there is a very strong relationship between thinking one has a problem and actually being a problem drinker.

d. Estimations by Non-Study Roads

1) Indirect estimations

Probably the best way for a railroad to determine the prevalence of problem drinking in its work force is to conduct a survey similar to those conducted by Project REAP. Unfortunately, to be done well, such surveys are expensive, time consuming, and require specially trained personnel who may not normally be employed by the railroad.

An alternative and in many ways more desirable method for railroads to estimate problem drinking prevalence is to use a technique known as indirect estimation. Marden (1974) developed one such technique for estimating problem drinking and the application of this technique has become widely accepted since its introduction.

The philosophy behind Marden's method is simple: Take a prevalence rate generated in one population and apply it to another population. To the extent that the populations are "similar," the estimates might be quite good. When the populations are not similar, problems arise. For example, if one finds the prevalence of problem drinking in the American adult population to be about 7 percent (DHEW, 1979), one might apply this estimate to any subpopulation or to another country's population to determine the prevalence there. If this second population is fairly typical of or similar to American population, perhaps Canadians, then the estimate is probably very close; but if the second population differs in important ways, take for instance the State of Utah with its heavy concentration of Mormons, the estimate may miss the mark badly.

Marden saw this problem and recommended using several prevalence rate estimates which, when properly combined, would yield a much better estimate. To do this, Marden simply took into account occupational category distributions, sex ratios, and age distributions of both the original and second populations.

Using the REAP data, we tried to develop methods by which non-study railroads could estimate prevalence rates of problem drinking without collecting primary data. Unfortunately, multiple regression analysis (e.g., Cohen and Cohen, 1975) revealed that the demographics which we used (job category, sex, age) were very poor (albeit significant) predictors of problem drinking (R^2=.04).

This implies that an indirect technique similar to Marden's would have very little utility in the railroad setting. In fact, when we attempted a quasi-cross-validation of the technique by applying estimates based upon the entire sample to individual railroads, we discovered that the indirect technique was sometimes in error by as much as 80%. Given this, non-study railroads should simply use the overall prevalence rate estimate of 12% as an indication of the extent of problem drinking on their railroads.

5.3 CORRELATES OF PROBLEM DRINKING

There are many behavioral, demographic, and job characteristics that are statistically related to problem drinking. Unfortunately, most of these relationships are significant only because of the large sample size. Few results represent effects of a size sufficient to have implications for programming. Although the statistically significant relationships presented in this chapter do not provide data upon which to plan program services, they do provide some insight into the picture of problem drinking on the roads.

Because of the large sample size and because so many variables undoubtedly go into determining proble drinking, most of the relationships we report here, though statistically significant, do not explain great amounts of the differences we see among people regarding problem drinking. That is to say, for example, that although differences in age explain some of the differences in problem drinking (younger people are more likely to be problem drinkers), they account for only a small percentage--about 4 percent. Other factors alone and in combination with each other and with age explain the remainder of the differences we see. In fact, none of the statistically significant relationships reported in this chapter explain those differences in problem drinking even to the extent that age does.

As a result, while the findings reported in this chapter should be interesting and useful for understanding problem drinking from a theoretical viewpoint, they will be of limited utility for applied purposes. For example, we will present data that show that problem drinkers feel that their jobs are more obsolete than nonproblem drinkers. These are group effects, however, and are totally meaningless when applied to individuals. It makes no more sense to equate job obsolescence with problem drinking than it does to equate being male with it.

We do find that problem drinkers are about five times as likely as others to drink regularly on the job. In addition, they report higher prevalence rates of drinking on duty, getting drunk on duty, and coming to work drunk or with a hangover. This may represent either a distorted perception by the problem drinkers or may reflect different norms within different work groups.

Problem drinkers consume greater quantities of alcohol and do so in a shorter amount of time than other railroad workers. Problem drinkers are also more likely than others to binge drink. Although all of these relationships to problem drinking exist, consumption quantities and patterns are not a part of our definition of problem drinking.

Considering demographic variables, the groups most likely to be problem drinkers are young workers, unmarried and white males, Catholics, and those with high school educations.

Operating crafts workers are more likely to be problem drinkers than others, followed by nonoperating crafts workers and lastly exempt personnel. Problem drinkers have spent fewer years working for their railroads than other employees.

5.3.1 Drinking-related Correlates

a. On-the-Job Drinking Practices of Problem Drinkers

Although on-duty drinking and other drinking rule violations may indeed get a worker into trouble on the job, such behavior is not, in and of itself, part of our definition of problem drinking. Still, the question might be raised as to what extent problem drinkers do violate rules governing such behavior. Since many clients seen at employee assistance programs are referred for rule violations, we are very interested in whether those who drink on the job are (more) likely to be problem drinkers and, therefore, whether the referrals are, in a strict sense, appropriate. First, we need to look at some characteristics of problem drinkers.

Problem drinkers are more likely than those who are not problem drinkers to drink on duty.[1] Nonproblem drinkers drink on the job an average of 2.1 days per year and problem drinkers drink on the job an average of 11.2 days per year.

Problem drinkers are more likely to report that workers like themselves (hence) drink while on duty.[2] They also believe that workers like themselves are more likely to drink while on call or prior to duty than others are.[3]

Problem drinkers are also either more aware of violations of the drinking rules, more willing to discuss them (anonymously), or more inclined to exaggerate the amount of rule violations. Whatever the case, problem drinkers report higher levels of rule violations among their coworkers than other workers do.

Being a problem drinker is significantly related to seeing (reporting) drinking on duty[4], reporting to work drunk[5] or hungover[6], and getting drunk on duty[7]. Since respondents were asked to include their own behavior in their estimates of frequency of these rule violations, we controlled for whether or not they drank on duty themselves. Even when their own behavior is taken into account, they still report higher levels of witnessed rule violations than their nonproblem drinking counterparts.

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1. $r_{pb} = .16$, $n = 5070$, $p < .001$.
2. $r_{pb} = .16$, $n = 3548$, $p < .001$.
3. $r_{pb} = .13$, $n = 3548$, $p < .001$.
4. $r_{pb} = .19$, $n = 3552$, $p < .001$.
5. $r_{pb} = .19$, $n = 3552$, $p < .001$.
6. $r_{pb} = .27$, $n = 3552$, $p < .001$.
7. $r_{pb} = .18$, $n = 3552$, $p < .001$.

The high correlation between problem drinking and reported frequency of reporting to work hungover may mean that problem drinkers are more likely to identify their nonproblem drinking counterparts for this behavior than their counterparts are to recognize it in themselves. Conversely, the relatively low correlation between getting very drunk on duty and problem drinking may reflect a reluctance on the part of the problem drinkers to admit this behavior of their own while their nonproblem drinking counterparts are relatively quicker to recognize it.

Of course, the possibility does exist that the rule violations do occur with greater frequency in the work groups of problem drinkers. Since the questions asked about individual work groups, the differences may be real and not just perceptual. Such a case would be an instance of social facilitation. In groups under a condition of social facilitation we find different norms than in other groups. Here we find greater frequency of drinking because drinking by one individual encourages and sets the standards for another's deviant behavior. It should be noted that another one of Trice and Roman's (1978) job-based risk factors is the presence of other deviants in the work groups although they postulate the factor's applicability only to illegal drug use. It may well be that in the climate of company drinking rules alcohol is the functional equivalent of illegal drugs in other settings.

b. General Drinking Patterns of Problem Drinkers

In addition to being more likely to drink on the job, we find that problem drinkers are more likely to consume greater amounts of alcohol than nonproblem drinkers[8]. Nonproblem drinkers reported consuming an average of 9.2 ounces of ethanol in the month prior to the study while problem drinkers reported consuming an average of 40.0 ounces. This translates to nonproblem drinkers consuming about 4 drinks per week and problem drinkers consuming about 19 drinks per week. Naturally, this implies that problem drinkers are more likely to be heavy consumers[9]. In fact, we find that problem drinkers drink the maximum quantity of alcohol we asked about (eight shots of hard liquor, two six-packs of beer, or two bottles of wine in a single day, or 4.8 to 6.1 ounces of ethanol) more frequently than nonproblem drinkers[10].

When they drink that quantity, they are likely to do so in a shorter period of time than the nonproblem drinkers do[11]. Although this relationship is statistically significant, owing to the very large sample size, the effect is not large. This implies that among the heavy consumers the speed of drinking is not a major factor in determining the likelihood of being a problem drinker. Problem drinkers who drink this quantity do so in about 6.5 hours. It takes nonproblem drinkers almost an hour longer to consume the same amount.

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8. $r_{pb} = .29$, $n = 4051$, $p < .001$.

9. $\chi^2_{(1)} = 243.8$, p .001, ϕ - .30

10. $t' = 20.6$, $df = 679$, $p < .001$.

11. $r = -.08$, $n = 1411$, $p < .001$.

Perhaps the most extreme pattern of drinking behavior is binge drinking. We define this as staying drunk for more than one day in a row, at least once during the past year. This is a somewhat more extreme definition than has been used in some other studies (for example, Cahalan and Room, 1974). Although the likelihood of either problem drinkers or others going on binges was extremely small, problem drinking was significantly and positively related to binge drinking[12].

While at first glance the reader may find the results reported above trivial, obvious, and even tautological, he or she should keep in mind that consumption of alcohol, even in extreme amounts, is not a part of our definition of problem drinker. Our problem drinkers were classified solely on the basis of how much they consumed, patterns of consumption, or reasons for consumption.

What we have shown here, then, is that certain drinking behaviors are significantly related to problem drinking as measured by tangible consequences. We have not demonstrated that heavy drinking causes problems. In fact, the relatively low correlation coefficients indicate that many-factors besides consumption are related to the development and/or determination of problem drinking. (It should also be noted that the skewed distributions and dichotomous nature of the problem drinkers classification have probably caused the strengths of many of the relationships reported in this chapter to be underestimated.)

Previous research (e.g., Cahalan, 1970; Johnson et al., 1977) has demonstrated the relationship of a number of personal characteristics to problem drinking. Among these are age, sex, region of the country, and religious affiliation. The REAP survey also provides data on the relationship of problem drinking to demographic factors, but it should be kept in mind that problem drinking is defined differently in our work than earlier studies defined it.

As expected from the earlier studies, we found that age was significantly related to problem drinking[13]. Older individuals are less likely to be problem drinkers.

We also found a significant, though apparently weak, relationship between sex and problem drinking[14]. Males are more likely to be problem drinkers than females.

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12. $r_{pb} = .12$, $n = 4091$, $p < .001$.

13. $r_{pb} = -.21$, $n = 5118$, $p < .001$.

14. $r_{\phi} = .06$, $n = 5149$, $p < .001$.

Marital status is also significantly related to problem drinking[15]. Married individuals are less likely to be problem drinkers than those who are not married.

Education is also significantly related to problem drinking, at least to a point. When education is considered in terms of grade level achieved, a highly significant, though weak, association results indicating that more educated workers are more likely to be problem drinkers[16]. If education is looked at another way, however, in terms of degree received (ranging from none through high school and advanced degrees, all the way to the doctorate), there is no observable relationship[17]. This implies that the relationship between problem drinking and education is probably curvilinear quadratic, with problem drinking being associated with greater education through the high school level but with a levelling off of the relationship beyond this. Figure 5-2 shows this graphically.

Finally, Cahalan and Room found higher rates of problem drinking in central city areas, but no reliable patterns when a simple urban-rural differentiation was considered. Although we have no central city data, we do replicate their latter finding. There is no simple relationship between living in city, suburbs, or country and problem drinking.[18]

c. Job-Related Correlates

Job-related correlates of problem drinking fall into several categories. The first of these addresses the issue of whether individuals with different types of jobs have different levels of problem drinking. Project REAP's interest was: Do exempt, operating crafts, and non-operating crafts workers differ in the prevalence rates of problem drinkers among their ranks?

Secondly, problem drinkers may differ from others in terms of their experience in railroading. Problem drinkers, for example, may float from job to job or railroad to railroad.

Thirdly, there may be certain characteristics of the work environment that either enable or encourage the individual to become a problem drinker. Roman and Trice (1976) refer to these as "etiological factors."

Finally, the problem drinker's on-the-job drinking behavior may be different from that of other workers. Although those who drink on duty are not necessarily problem drinkers by our definition, problem drinkers may, nonetheless, drink more on duty. If they do, then those reported for violating company drinking rules or similar violations should be referred to Employee Assistance Programs. If not, such referrals may be inappropriate, or at least an inefficient way of identifying those in need of help.

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15. $\chi^2_{(1)} = 13.44$, $\phi = .05$, $p < .001$.

16. $r_{pb} = .05$, $n = 5121$, $p < .001$.

17. $r_{pb} = .01$, $n = 5005$, ns.

18. $r = .03$, $n = 4872$, ns.

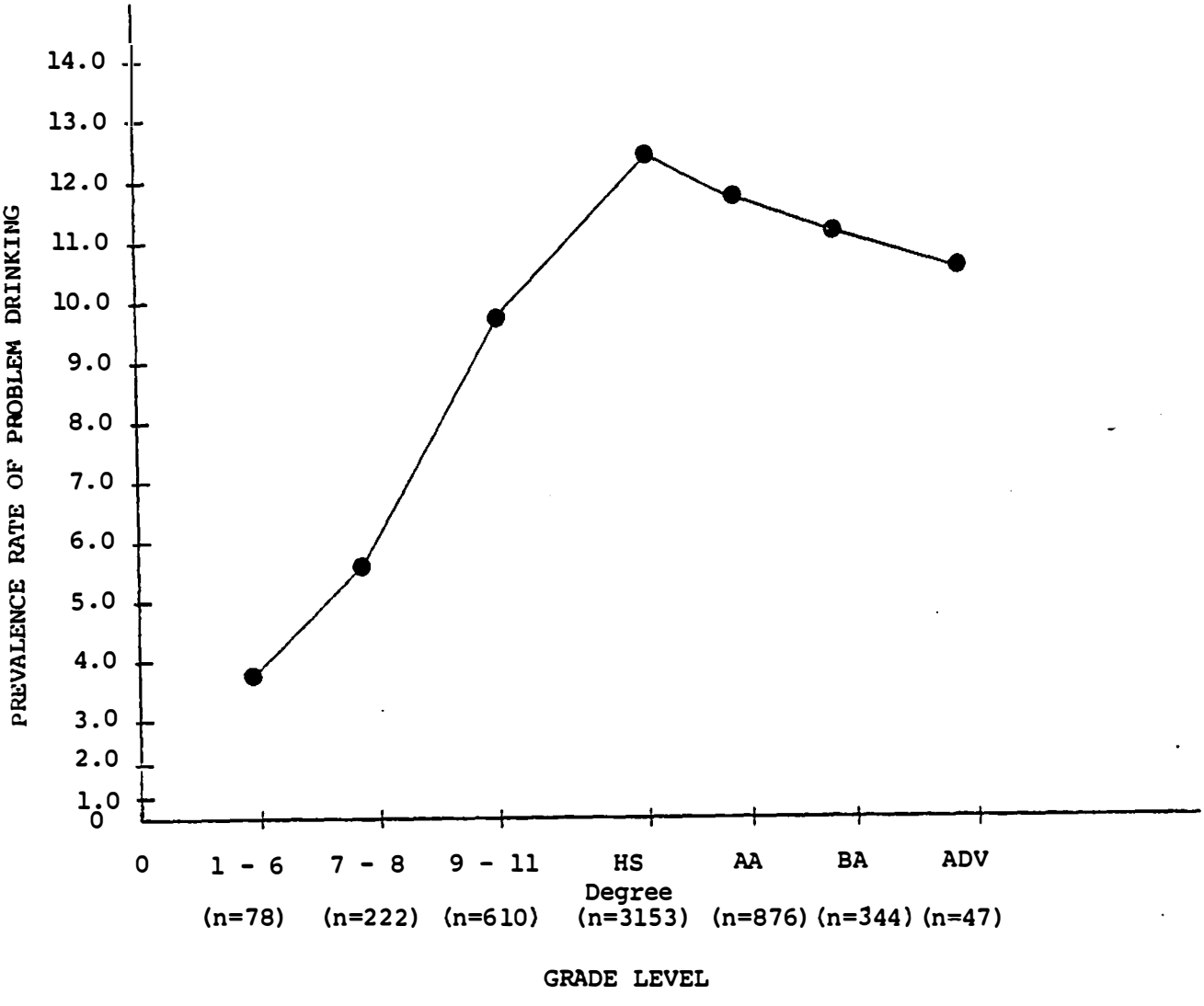

FIGURE 5-1. THE RELATIONSHIP OF PROBLEM DRINKING TO EDUCATION LEVEL

d. Job Category

While many of the railroad officials and program staff interviewed felt that problem drinking did not respect rank and that it was distributed fairly equally across the occupational categories of exempt, operating crafts, and non-operating crafts, others felt that problem drinking was concentrated in the crafts and was less frequent or, in some cases, almost nonexistent in the exempt population. There seemed to be some feeling that among the crafts workers problem drinking tended to be concentrated in the operating crafts, at least on certain railroads with unusual operating conditions.

Analysis of the survey data indicated that this latter opinion was an accurate assessment. Nine percent of the exempt personnel turn out to be problem drinkers, 12 percent of the non-ops and 14 percent of the ops.[19]

e. Railroad Experience

One argument often made for implementing Employee Assistance Programs is that the problem drinker is often an experienced employee with many years of service and that an employer has an investment in that employee, even an obligation to him or her. Employee Assistance Program directors on the railroads indicated to us that the clients whom they saw were older than the workforce in general and, in addition, that in almost every case, problem drinking was a chronic problem not an acute one. This is certainly in agreement with the traditional understanding of alcohol as a disease (Smithers Foundation, 1968).

Following this reasoning, one might expect a significant positive relationship between the existence of a drinking problem and the number of years one has worked for an employer. Our data show just the opposite:- Problem drinkers have worked for their employers for fewer years than others.[20] In addition, no matter how many railroad companies they have worked for, they have held railroad jobs for fewer years than other workers.[21]

Although these results are illuminating, a clear problem with their interpretation is that age is very highly correlated with both the years one might work for one's current employer[22] and the number of years one might have held a railroad job.[23] Put more simply, the older one is, the longer he or she has probably been working.

Therefore, the effects of age were statistically controlled for the analysis. That is, a statistical situation was mathematically contrived so that a hypothetical population of workers all the same age was examined. The results of analyses on this population indicate there is no relationship between problem drinking and the number of years one has worked for one's current employer.[24]

In other words, the apparent relationship indicating that problem drinkers have worked for their current employers for less time than other workers, though true, is an artifact since problem drinkers are, on the average, younger than other workers. The fact that program directors see only older problem drinkers may mean either that they are not identifying problem drinkers early enough or that the younger problem drinkers for some reasons are alienated from the Employee Assistance Programs.

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19. $\chi^2_{(2)} = 13.19$, $\phi = .05$, $p < .001$.
20. $r_{pb} = -.15$, df = 4942, $p < .001$.
21. $r_{pb} = -.17$, n = 4942, $p < .001$.
22. $r = .79$, n = 4942, $p < .001$.
23. $r = .87$, df = 4942, $p < .001$.
24. pr = .02, n = 4941, ns.

Interestingly, when the effects of age are controlled for, we find that problem drinkers have held railroad jobs longer than other workers.[25] Given that the previous analysis showed no relationship between years with a current employer and problem drinking once age is controlled for, one must conclude that problem drinkers have worked for more railroads than other railroad workers (assuming age is held constant). This, in fact, is the case.[26] Problem drinkers change employers more often than non-problem drinkers.

f. Etiological Factors in Job Situation

Trice and Roman (1978) consider 12 job-based risk factors in the development of deviant drinking. Such deviant drinking may lead to, but is not synonymous with, problem drinking. These 12 risk factors are grouped into four categories. The first category is lack of visibility and includes both physical remoteness from supervisors and nebulous production goals. Part of this lack of visibility is freedom to set work hours.

The second category is lack of structure. This is represented by such factors as work addiction and occupational obsolescence.

The third category is the absence of social controls. Included here are factors where drinking is part of the work role, where others in the organization benefit by one's drinking, and where one changes jobs and the first job had controls over deviant behavior and the new one does not.

Finally, Trice and Roman identify miscellaneous risk factors, including role stresses with relief mechanisms (such as competition) and social facilitation factors (such as other problem drinkers).

Schollaert (1977) using data collected from patients in treatment, tried to test the relationships of some of these variables to problem drinking. He found little support for the hypothesis that job-based risk factors are related to either job changes or termination among his sample of problem drinkers in treatment. Schollaert was forced to concede, however, that research design problems may have been responsible for the negative results and that the hypothesis might still be tenable.

Project REAP had the advantage of being able to collect data on a number of these supposed risk factors from a large number of railroad workers. As a number of the factors vary greatly among railroad jobs, the potential for discovering potential effects was high.

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25. pr = .03, n = 4941, $p < .05$.

26. pr = .04, n = 4941, $p < .01$.

Respondents in our survey were asked 12 questions about the conditions of their work and their perceptions of their work situation. It should be emphasized that although Trice and Roman (1978) talk about the effects of work situations on problem drinking, a more precise statement would be to talk about the effects of perceived work situations (see Thomas and Znaniecki, 1918-1920). For example, in terms of influence on problem drinking, the actual obsolescence of one's job will not be as critical as how obsolete one feels it to be. While in many situations the perceived and the real should be similar, there may be important exceptions that would influence problem drinking. Hence, our questions attempted to draw out respondents' perceptions of reality rather than reality itself, which would have been more difficult, if not impossible, to determine.

The general survey included 12 items intended to tap the hypothesized risk factors. Some of the items can be classified into more than one of the four categories. Lack of visibility was measured by the ability to set one's own work hours, the frequency of interaction with one's boss, the number of individuals in one's work group, and the number of employees supervised.

Absence of structure was measured by the hours per week the employee usually works, the employee's self-assessment of how much of a work addict he is, and the perceived importance of the worker's job to the railroad.

We had few measures of social controls in our questionnaire. Trice and Roman find this category "particularly prominent where drinking is part of the work role." There are few, if any, jobs like this on the railroads. Besides, the railroads have a long history of anti-drinking policies which are applicable to all levels of employees. Other places where this category is important are where one's drinking benefits other employees, a hard situation for the respondent to assess, and situations of job change between high and low social control positions, an infrequent occurrence. Hence, our only possible measure is the size of the employee's work group, assuming that where there are more co-workers, there is more potential for social control. Unfortunately, this larger work group might also encourage more drinking since one drinker might define the norms and facilitate another's drinking.

Under the final category of miscellaneous risk factors, including role stresses, we include competition, which Trice and Roman feel is important. We also include other factors that are not so much physical characteristics of the work situation as they are psychological ones. These are job satisfaction, how good a job one feels he is doing, how one feels his supervisor rates his work, and the difference between the last two.

Because age and sex were discovered to be such strong determinants of problem drinking, the effects of these variables were statistically controlled for in assessing the relationships of each of the risk factors to problem drinking.

Lack of Visibility

The number of days that the worker spends away from home is significantly related to problem drinking.[27] Problem drinkers' jobs require them to spend more nights away from home than do the jobs of other employees. Problem drinkers average 4.1 nights away from home per month, others average 2.7.

Of course, lack of visibility is not the only result of spending nights away from home. Nights away may well fit into the category of miscellaneous role stresses. Especially considering the often undesirable places where railroad workers must spend these nights, stress may be an alternative explanation for the development of problem drinking. Several management and labor officials on one railroad where layovers of indefinite length are common indicated that they were sure that boredom at the terminals led to many of the drinking problems. It is also noteworthy that across all railroads and occupational categories, respondents were more tolerant of drinking by operating crews on layovers than they were of drinking in any other on-duty situations. In fact, there are probably multiple explanations of this effect, and the concept of causality may even be inappropriate here.

The more a worker has to talk with his boss, the more visible his behavior will be. This is true not only for drinking behavior, but for drunken behavior as well. A drunk who has to talk with a boss several times a day will shortly be found out. This hypothesis was confirmed by the data.[28] Although problem and non-problem drinkers reported talking with their bosses about once a day, the contact is slightly more frequent for non-problem drinkers.

There is a problem with the interpretation of this risk factor as well. While we know that there is an inverse relationship between problem drinking and contact with one's boss, we don't know the direction of causality in this relationship. While, as the hypothesis states, less contact may lead to more problem drinking, it is just as possible that problem drinkers actively avoid their bosses in order to avoid detection.

As mentioned above, the size of one's work group bears upon visibility. The more people one works with, the harder it is to behave covertly. Consequently, if visibility is important in preventing problem drinking on the job, size of work group should be inversely related to being a problem drinker. This was not the case. We found no relationship between work group size and problem drinking[29]. Both problem drinkers and others had about 11 employees in their work groups.*

*We recognize that as work groups become larger, there is often a greater possibility for covert action and anonymity if the individual desires it. Thus larger group size may, contrary to our original assumption, in many cases decrease visibility. In these cases, we are providing a relatively weak test of the visibility hypothesis.

27. $pr = .05$, $n = 4676$, $p < .001$.

28. $pr = .04$, $n = 4675$, $p < .02$.

29. $pr = .01$, $n = 4675$, ns.

A parallel argument can be made for numbers of employees supervised as for number in work group. The more employees one supervises, the more visible a worker is. If visibility is a factor in preventing problem drinking, number of employees supervised should be inversely related to the phenomenon. This hypothesis is not supported by the data[30]. The number of employees supervised is not related to being or not being a problem drinker.

Finally, freedom to set one's own work hours is proposed as an indicator of lack of visibility. The logic of this is that those setting their own work hours are hard to define as absent. Also, they can work during the hours when they are least likely to have their problems detected (Trice and Roman, 1978). Our data provide no support for this hypothesis[31]. Problem drinkers do not differ from others in their freedom to set work hours.

On balance, we must question the general hypothesis that visibility is negatively related to problem drinking. Freedom to set one's own work hours was not at all related to the phenomenon. Although time spent away from home is very definitely related to problem drinking, this relationship may be due to stresses rather than to lack of visibility.

Although the frequency of interacting with one's supervisor was significantly related to problem drinking, neither size of work group nor number of employees supervised was. This suggests that if lack of visibility is, in fact, related to problem drinking, it is not lack of visibility in general which is important, but only lack of visibility by superiors. Visibility by co-workers or subordinates is not important, at least not in the railroad environment.

h. Absence of Structure

Under the rubric of absence of structure, Trice and Roman include work addiction and occupational obsolescence. Work addiction is offered as an example of compulsive behavior. Such behavior may build up tension and emotional exhaustion that must be released. The work addict's total devotion to work may cut off more socially accepted forms of release, and the work addict may turn to alcohol and eventually become a problem drinker, especially in the absence of social controls to check the problem.

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30. pr = .00, n = 4675, ns.

31. pr = .01, n = 4675, ns.

We had two measures of work addiction in our survey questions: a direct question asking the respondent how much of a work addict he or she is and another asking how many hours per week he or she works. Problem drinking is significantly related to the hours per week the employee works, but not to the self-diagnosis of work addiction. Problem drinkers tend to work more hours per week than other workers, although for both groups the average is around 40 hours[32]. Problem drinkers are not more likely than others to feel they are work addicts, although they report working more hours than others[33].

Occupational obsolescence is thought to lead to deviant behavior and problem drinking because the individual is forced into meaningless work until he can be conveniently dismissed. Although Trice and Roman indicate that the placement of obsolete individuals in meaningless work roles is often a conscious decision on management's part as a compromise with or avoidance of the unions, in a shrinking industry like the railroad, positions can become obsolete along with individuals and a de facto situation evolves without intervention by management. Nevertheless, a worker can actually watch himself become a fifth wheel, with little work to do and with the constant threat of job loss through neither personal, management, nor union fault. Under these conditions deviant behavior and problem drinking can ensue.

The data clearly bear out this hypothesis. Problem drinkers feel that their jobs are less important to the railroads than other workers perceive their jobs to be.[34] As noted above in the context of interaction with supervisors, we must use caution in interpreting this result. The statistics only tell us that a relationship exists. They say nothing of causality. Although occupational obsolescence may lead to deviant behavior including problem drinking, it may also be true that problem drinking leads to a devaluing of other facets of one's lifespace including one's job.

On balance, there is evidence that the category that Trice and Roman refer to as "absence of structure" is indeed related to problem drinking. Although the direction of causality is not always clear as the concept was made operational here, the hypotheses are nonetheless supported.

i. Lack of Social Controls

As already mentioned, we have little data on social controls, and the nature of these factors did not lend themselves to investigation in our study. One possible social control, which we discussed above, is the size of the work group. But as we mentioned, this factor is apparently not related to problem drinking. Below, we look at the relationship of social facilitation to problem drinking. This phenomenon probably is on the other

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32. pr = .06, n = 4674, $p < .001$.

33. pr = .01, n = 4674, ns.

34. pr = .04, n = 4674, ns.

end of a dimension that Trice and Roman have labeled "social controls," but we are not dealing with a dimension running from "presence of social controls" to "absence of social controls." Rather, the continuum extends through "absence of social controls" to "social facilitation" and possibly to "social pressure," as in Figure 5-2.

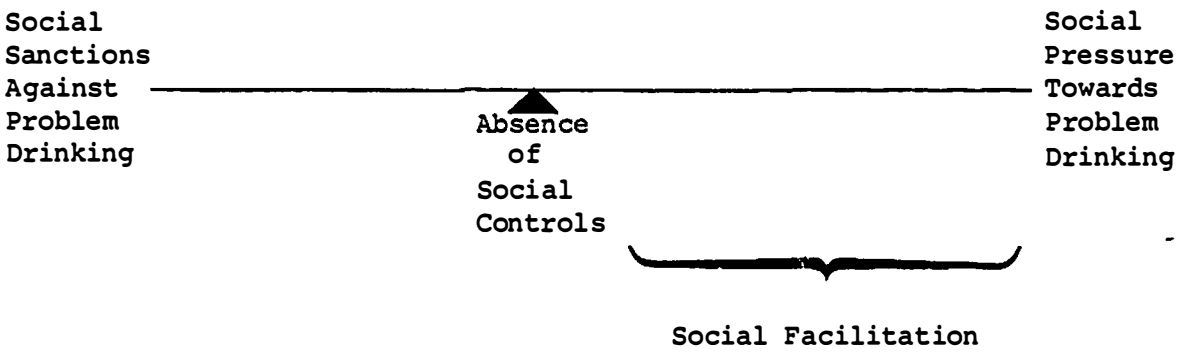

FIGURE 5-2. SOCIAL CONTROL CONTINUUM

j. Miscellaneous Risk Factors

Competition is a common source of stress in American enterprise, and alcohol is a common tool used to relieve stress. If problem drinking results from its use, it may become harder for a person to compete, and stress will be enhanced. Trice and Roman see competition as more likely to lead to amphetamine problems than to drinking problems because of the level of alertness needed for competition. We include competition in our study as a representative of stress. Our data show no relationship between problem drinking and levels of job competition, however.[35]

Several psychological factors are potentially related to job stress and to overall emotional well-being. Since coping with stress, or escape in drinking, could eventually lead to problem drinking, these variables were examined for relationships to problem drinking.

How well a person feels he is doing his job is not related to problem drinking, although the correlation does approach statistical significance.[36] Apparently, more important is how the worker feels his supervisor evaluates him. Here we do find that problem drinkers feel that their bosses evaluate them more negatively than other workers feel their bosses evaluate them.[37]

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35. $pr = .01$, $n = 4674$, ns.

36. $pr = .03$, $n = 4674$, $p < .06$.

37. $pr = .04$, $n = 4676$, $p < .02$.

Perhaps, of course, it is not the negative evaluations by the supervisor that lead to problem drinking (assuming we are dealing with causality, which we may not be). The real psychological state encouraging the problem drinking may be the discrepancy between the perception of work and the perception of the boss' evaluation of it. The effects of this descrepancy were checked in two ways: first by relating problem drinking to the difference between the two ratings, and second by relating problem drinking to perceived supervisors' rating controlling for self-evaluations.

In both cases we found no relationship. Problem drinking was not related to the difference between one's own perception of work and the boss' perception of it.[38] Nor was it related to the boss' rating while holding one's own perception constant.[39] We conclude that the psychological state that is related to problem drinking is not the discrepancy between what the boss believes and what the worker believes. Rather, it is simply a more negative evaluation by the supervisor which is related to problem drinking. (Incidentially, all workers, including the non-problem drinkers, felt that their bosses underrated the quality of their work.)

Another factor accounting for the relatively negative evaluation perceived of problem drinker work performance is that the problem drinkers may, in fact, be performing less adequately than other workers. Although the problem drinker may not see this in his own performance, he does recognize that his boss feels this way.

Job satisfaction was found to be as strongly related to problem drinking as any single job-related factor.[40] Problem drinkers are more dissatisfied with their jobs than other workers.

Although competition appears not to be related to problem drinking, miscellaneous job factors, at least psychological ones, are related. Since many of the job factors already considered are related to each other, and still others, particularly psychological ones, are the result of even other factors, an additional analysis, which might prove enlightening, would be one that considers the effect of the total pattern of these factors and their interactions. This is what we look at in the next section.

5.3.2 Multiple Regression Analysis of Problem Drinking Correlates

Just as many of the demographic and work factors discussed earlier in this section are related to problem drinking, they are also related to each other. These variables are in part measuring the same entity. Therefore, if we are trying to determine the causes of problem drinking, this amounts to double counting. What is needed is a method that will allow us to assess the effects of individual correlates by removing the influences of other correlates. Multiple Regression/Correlation (MRC) analysis (e.g., Cohen and Cohen, 1975) is such a method.

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38. pr = .02, n = 5113, ns.

39. pr = .02, n = 5044, ns.

40. pr = .05, n = 4674, $p < .001$.

In applying this method, we have made several assumptions about the relative importance of variables. Variables directly related to birth and thus unchangeable in most cases, were considered as covariates and were forced into the equation first. These included age and sex. Next, the demographic variables other than age and sex were entered into the model as a set. The reasoning was that, for the most part, all of these variables were prior to and not dependent upon one's job or work conditions. Next a set made up of physical job characteristics was entered into the model. Finally, a set composed of the psychological job factors was entered into the equation under the assumption that they might be effects resulting from any of the previously entered variables, but were not likely to be causes of them. (An age-sex interaction term, an age squared term, and all two-way interactions with the covariates were entered also. None of these proved significant, and they were deleted from the final model). Under the concept of protected significance testing, individual variables were tested for significance only if the set to which they belonged was significantly related to problem drinking after all previously entered variables had been controlled for (that is, the set resulted in a significant increase in the variance accounted for of the problem drinking measure). Figure 5-4 illustrates the final model.

When the variables believed in our hypothesis to be related to problem drinking are entered into a regression model in logical order, age and sex are found to be the primary determinants of problem drinking.[41] Once they have been taken into account, none of the other demographic variables considered (race, religion, educational level, marital status, or size of community) was related to problem drinking. Two job-based risk factors seem important when considered in conjunction with other job factors and when all demographics are controlled for. These two factors are the number of nights spent away from home[42] and perceived occupational obsolescence.[43]

Finally, among the psychological job factors considered, only how well the worker thinks he is performing his job was significantly related to problem drinking.[44,45]

We cannot emphasize strongly enough that we are only making correlational analyses in this report. We do not contend that any of the factors identified in our hypotheses cause problem drinking or even predispose an individual to it. They are merely related to problem drinking. For example, spending time away from home may not be a cause of problem drinking, but an effect

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41. $R = .23$, $F_{(2,3238)} = 92.7$, $p < .001$.

42. $F_{(1,3219)} = 13.75$, $p < .001$.

43. $F_{(1,3219)} = 10.14$, $p < .001$.

44. $F_{(1,3218)} = 4.61$, $p < .005$

45. The final multiple R value is .27, $F_{(22,3218)} = 11.37$, $p < .001$.

of it. Nonetheless, as relationships they are real and, where they exist, they offer support for the hypotheses offered by Trice and Roman. More importantly, they take into account relationships between the various risk factors and identify those that cannot be explained away by relationships with and among other variables.

5.3.3 Conclusion

This chapter has shown that there are many personal and job characteristics related to problem drinking. The majority of what we know about problem drinking can be explained by age and sex. Problem drinkers tend to be younger and are more likely to be male than other workers. This finding parallels findings of national studies (for example, Cahalan, 1970; Johnson et al., 1977). When these factors are controlled, we found that no other demographic variable predicts problem drinking.

Although a number of work characteristics are individually related to problem drinking, when considered as a whole, after controlling for demographic factors, only three factors are important in predicting problem drinking. They are time spent away from home, occupational obsolescence, and a worker's personal evaluation of how well he is doing on the job.

We also know that problem drinkers consume more alcohol in shorter periods of time than non-problem drinkers. They are also more likely to drink in deviant ways such as binge drinking, heavy intake and frequent intoxication than are non-problem drinkers.

Finally, problem drinkers report higher levels of drinking rule violations both by themselves and in their work groups than do non-problem drinkers. While this may be due to exaggeration on the part of problem drinkers and/or underestimation by non-problem drinkers, the possibility exists that problem drinkers gravitate to work groups where deviant behavior is more tolerated because other individuals are behaving in a similar manner.

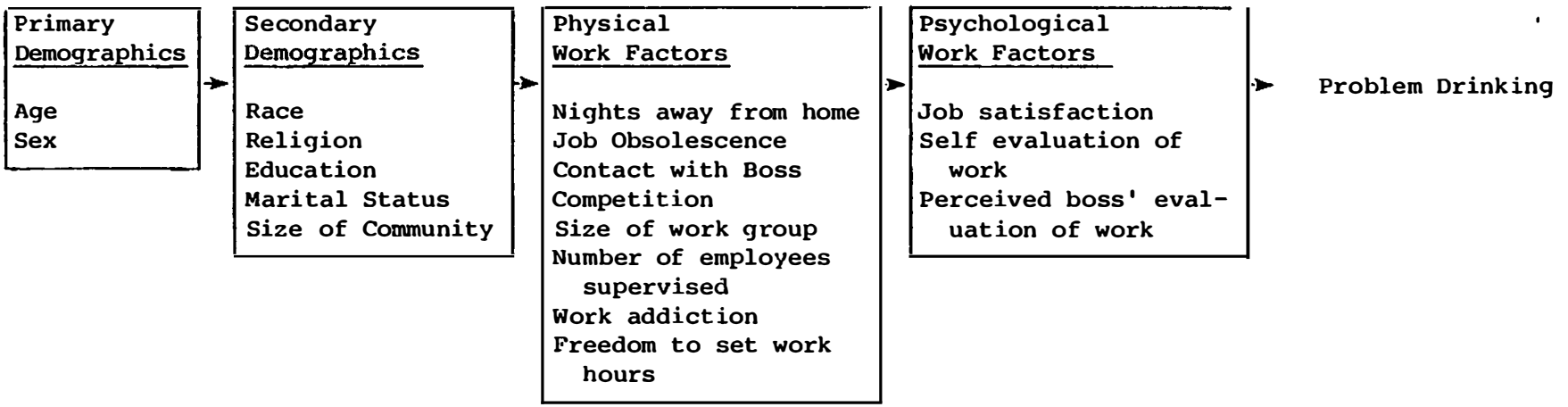

FIGURE 5-3. THE MULTIPLE REGRESSION MODEL

6. CURRENT PROGRAM APPROACHES

6.1 APPROACHES OF RAILROAD EMPLOYEE ASSISTANCE PROGRAMS

In the previous chapters, we described the drinking practices and problems of railroad workers and the impact these problems have on railroad companies. In this chapter we will examine the employee assistance programs, which were established by the railroads to alleviate the adverse effects of employee drinking. We will analyze the relative effectiveness of alternative strategies used in programs on various roads by comparing the processes they follow and the results they achieve.

We will describe the programs as a system of relationships. In this system, a program will have a context, its historical and current organizational environment; inputs, that is, what goes into it, such as staff time, money, materials, and knowledge; functions and services, that is, what program personnel do, for instance assess problems; outputs, the caseload receiving specific services; the immediate effects or outcomes such as a treatment plan; and the longterm impact such as sobriety, improved health, or reduced absenteeism.

Since this framework considers all aspects of program operations, it lends itself readily to both process and outcome evaluation. Specifically, we will identify and measure the significant inputs, services, and results of the programs, analyze internal and external obstacles to operating the program, and compare the procedures followed by each program, looking at overall effect and impacts. This chapter is organized into the following major headings:

Context

Inputs

Functions and services

Results (outputs, effects, impact).

6.2 CONTEXT OF RAILROAD PROGRAMS

Programs come into clearest focus when they are examined against the backdrop of several important contextual variables. The first such variable is the program's history, especially its origins. A second set of contextual variables relate to the program's organizational and geographical location. A third variable involves the roles of labor and management in conceiving and running the program. The fourth concerns the attitudes of the work force, and labor and management toward the program. The final contextual variable is the program's relationship to other departments that have their own interest and perspective on the alcohol-related work carried on by the program.

6.2.1 Origins of Employee Assistance Programs on Railroads

The programs on the study roads have been in operation as few as three and as many as 28 years. Table 6-1 presents the programs in order of their longevity and gives the year they got started and the number of years they have been operating.

TABLE 6-1. AGE OF EMPLOYEE ASSISTANCE PROGRAMS

Railroad	Year Program Started	Age of Program
Burlington Northern	1951	28 years
Seaboard Coast Line	1966	13 years
Duluth, Missabe, and Iron Range	1967	12 years
Long Island Railroad	1970	9 years
Illinois Central Gulf	1974	5 years
ConRail	1975	4 years
Southern Pacific	1976	3 years

Programs began on these roads only after top management, usually the company president, acknowledged the seriousness of drinking problems and considered an assistance program to be a useful tool in handling these problems. One program was initiated when a recovering alcoholic employee persuaded the company president that the problem was widespread and that a program ought to be started both for economic and humanitarian reasons. A second program was started in large part because management responded to repeated requests from labor. This railroad company formally recognized the unofficial role a recovering alcoholic employee could play in helping others with the same problem and the company engaged him to start a program. Economic reasons had little to do with starting this program although they are the primary reasons for its continuation. A third program got underway as a result of a study conducted by the head of the road's medical department who also happened to be the personal physician to the company president. The study of this medical department concluded that the railroad was losing talented employees through drinking rule violation dismissals. Here too, the persuasive efforts of the top manager were a contributing factor. The president of this road was encouraged by the president of a road with a program to start an assistance program. A fourth program started as a result of a management study. In the fifth case, labor and management had come to a growing awareness of the problem, but the precipitating factor was a fatal accident caused by an intoxicated employee. The sixth and seventh programs got underway because of gradually increasing concern on the part of management and labor that alcohol-related rules alone did not provide the solution to this widespread problem. All but one of the roads was at least partially motivated by economics to start programs. All the roads maintain their programs at least in part for economic reasons.

The process through which these roads started their programs reveals four key factors that contribute to starting an assistance program: the decisionmaker, the program promoter, the basis for action, and time. The decisionmaker was always the company president. A program promoter repeatedly provided the decisionmaker with compelling reasons for starting a program. Program promoters included recovered alcoholics, a medical officer, labor representatives, and managers, and they were usually people who for personal or professional reasons had a certain degree of influence with the president. The reasons for taking action were usually testimony based on personal experience documenting the existence of the problem and advocating programs as a humane and cost-saving mechanism to deal with it. Even though they usually lacked solid data on the problem and on program performance, program promoters were able to get programs started on the seven roads in our study. Finally, on each road it took a good deal of time and persistence on the part of the program promoters to get a program in place. Programs may have started up more quickly if more convincing evidence had been available to the promoters. Program promoters did not have the kind of information in this study on the prevalence and costs of drinking problems and on the effectiveness of programs when they tried to get programs started on these seven roads.

6.2.2 Location of Programs

The seven study roads now have program offices in 27 cities: The Southern Pacific in Houston, San Antonio, Pasadena, Oakland, San Francisco, and Eugene, Oregon; the Burlington Northern in St. Paul, Chicago, Lincoln, Nebraska, and Seattle; the Duluth, Missabe, and Iron Range in Proctor, Minnesota; ConRail in New Haven, New York City, Pittsburgh, Detroit, Toledo, Indianapolis, and Philadelphia (2); the Seaboard Coastline in Jacksonville and Waycross; the Illinois Central Gulf in Olympia Fields and Memphis; the Long Island Railroad in Jamaica and Babylon. The reason why offices were opened in these cities was mostly a matter of convenience in serving the work force. These program offices are usually located where they are because of heavy concentrations of employees, central location, and available facilities and resources. The study roads cover 70,000 miles of track and have a potential problem drinking clientele of over 40,000 employees. For example, the Seaboard Coast Line program offices in Jacksonville, Florida, and Waycross, Georgia have people needing services in Virginia. The Burlington Northern has four offices in as many states serving over 50,000 employees in 19 states. Three other study roads also have many workers spread out beyond the program's reach.

Program services are not accessible to many workers in need. That is why the program directors and staff at all but one program think their railroads cannot be adequately served without adding more counselors and offices.

Nineteen of the 27 program offices are located off company property. Two roads have a total of eight offices on company property. All but one of the railroads employ the program staff serving their workers. On the exceptional road, the program counselor is located in a social agency outside the road and reports to the safety officer.

In our general survey workers were asked how likely they would be to go for help for a drinking problem to a) an alcohol program not run by their railroad, b) an alcohol program run by their railroad but not on company property, and c) an alcohol program run by their railroad on company property. Table 6-2 presents their responses to these questions.

TABLE 6-2. PERCENTAGE OF WORKERS WHO WOULD SEEK HELP FOR DRINKING PROBLEMS WITH DIFFERENT LOCATIONS AND OPERATIONS

	Not Run By Company	Run By Company Off Property	Run by Company On Property
Definitely	33	32	23
Probably	41	35	23
Probably not	18	20	30
Definitely not	9	14	22

Sixty-seven percent of the respondents said they would "definitely go" or "probably go" to a program run by the company off company property. Only 46 percent said they would go to a program run by the company on company property. Workers strongly prefer program offices off company property. One director, who has offices on company property, believes many employees are reluctant to come to the office because they fear they will be seen by another employee or someone they know. Worker preferences about program location and operation do not necessarily mean that programs run by agencies other than railroads or by railroads off company property serve their clients any better than programs run by railroads on company property. These preferences simply mean that workers are slightly more inclined to go to agencies unconnected with the roads than to those run by the roads and very much more inclined to go to a program off company property than on company property.

6.2.3 Organization of Programs

Four of the programs are located in the personnel department. The directors at three of these programs report to the vice president of personnel. The fourth director in a personnel department formerly reported to the medical director. He now reports to the director of labor relations. One of these program directors likes being in the personnel department because placement there gives the program clout and allows program staff to review personnel records. A second likes the latitude his personnel department gives him. This director would never want to be located in the medical department because he believes employees view that department as the vehicle through which the company disqualifies workers. He would prefer to be in the company's executive department where his program would gain more credibility and not be open to the vagaries of belt-tightening every time money is tight. Another director located in the personnel department would prefer to be in an operating department because financial support would be more ensured there. These four directors also serve as counselors. Three of them supervise their program staffs. The program staff at the fourth program report to the regional general managers in each transportation region. One of these programs has offices on company property. One has some offices on and some offices off company property. The offices of the other two programs are off company property. One of these last two programs has 11 of its offices in the homes of its counselors.

One program is located in its company's medical department. When this program started, it was to be placed in the company's personnel department. Concern over confidentiality led the company to place the program in the safety department instead. Eventually, the program was placed in the medical department. The director here feels this placement emphasizes the fact that alcoholism is a disease. It also makes it easy for the program to keep uncooperative clients off the job until they make genuine efforts at rehabilitating themselves. Program offices in this railroad are located in the counselor's homes.

The employee assistance program on the sixth road is located in the company's industrial relations department. Unlike the other program directors discussed so far, this director does not work full time on the program, but spends only 15 percent of his time on program work. The rest of his hours are spent in his other job, director of his road's industrial relations office. The seventh program is located in a social agency outside the railroad company. The company pays a counselor there who reports to the road's director of safety. Table 6-3 presents the organizational location and reporting channels of the employee assistance program.

There is a general consensus on what is important about the position of a program within the railroad company. The ideal location is a position in the organization that gives the program latitude, visibility, credibility, leverage, a strong position of advocacy, and predictable levels of adequate and steady funding. Directors of programs seem to have found these benefits in different departments. It appears there is no single "best organizational position" for all programs on all roads. Directors agree on what they would like to get through their placement in the company's organizational structure. Their diverse experiences indicate that the features that they all desire can be obtained in different organizational placements on different roads.

6.2.4 Roles of Labor and Management in Program

Across the roads, a little over 80 percent of exempt workers know that their company has a program to help workers with alcohol problems. In general, top and middle level managers know about the program. The smaller and/or older the program is, the more likely it is for frontline supervisors to know that the program exists and how to use it. However, even on roads where programs are well established many frontline supervisors do not know exactly what the programs do or how they can use them. Even frontline supervisors on small roads or on roads with older programs expressed the need for "refreshers" on what the program is doing and how they can make better use of it. It is clear that more supervisory training is needed to make the most of this potentially rich source of referrals. On roads where mergers have occurred, frontline supervisors on the road where the program first existed tend to know more about the program than those whose roads did not have a program until after the merger.

On all the roads, basic policy and procedural guidelines are set by management. Within these boundaries, the directors have a fairly free hand to handle day-to-day operations. One director does not manage his workers directly. Although there may be some advantages to this arrangement, the director on this road cannot ensure the quality of service delivery provided by his counselors under this arrangement. On two roads, managers have some say in the way the program is operated through their participation in joint management and labor committees. On the other roads, management is expected to make referrals and support the program in a general way, for

TABLE 6-3. ORGANIZATIONAL LOCATIONS AND REPORTING CHANNELS OF EAPS

Railroad	Organizational Location	Officer to Whom EAPs Report
A	Social Agency Outside Railroad	Director of Safety
B	Industrial Relations Department	Director of Industrial Relations
C	Personnel Department	VP/Personnel
D	Personnel Department	Labor Relations Officer
E	Medical Department	Medical Director
F	Personnel Department	VP/Personnel
G	Personnel Department	VP/Personnel

instance, promote its use, speak well of it, lobby for continued adequate funding. In general, managers tend to be either knowledgeable and committed to the program or ignorant and indifferent to it. There is no strong opposition to the programs or what they do. For a variety of reasons, including concern about confidentiality and a lack of baseline data on individual clients, programs do not provide management with hard data on the degree to which the program effectively operationalizes the company's program policies. Although top level managers intuitively believe the programs are providing the company with valuable services, they often feel uneasy about basing their evaluative judgments on impressions and reports from the programs themselves.

Almost without exception, general and local chairmen say that their brotherhoods are well disposed toward the companies' employee assistance programs. On two roads, labor representatives are members of joint management-labor advisory committees through which they can have some regular voice in the way the program is run. Whereas it is the case with many supervisors that they do not understand their roles with regard to using the program, specific roles for local chairmen have not been defined. Consequently, all too often local chairmen confine their program contacts to cases in which union members have been confronted on a drinking rule violation. Although local chairmen frequently know about a worker's problems long before he gets in trouble for violating company drinking rules, local chairmen have not been taught to assume the role of referral agents before formal disciplinary actions are taken. As one local chairman put it: "I wish that there was more that we could do--whatever that might be, I don't know." Ways of improving client referral rates from supervisors and local chairmen will be discussed in more detail under case findings in the section of this chapter devoted to program functions and services.

6.2.5 Attitudes Toward Alcohol Problems and Programs

As we have seen, railroad workers hold a remarkably enlightened and nonpunitive attitude toward people with drinking problems. The majority of workers would be more likely to report a rule violator if they thought he would be helped rather than punished. Almost all the management and labor interviewees in this study thought that specialized treatment could help in rehabilitating workers with drinking problems. By contrast, as recently as 1975, almost 40 percent of the American adult population thought "there really was no cure for alcoholism" in the sense that alcoholism was not a treatable condition (DHEW, 1978). The vast majority of workers and of management and labor leaders overwhelmingly give at least moral support to the programs on all the roads. The only loud and consistent complaints come from labor, and neither is aimed at employee assistance programs. The first complaint is against the practice of dismissing rule violators, especially after just one offense. The second is a complaint against labor's exclusion from active participation in the program. Workers appear to trust the program where labor is actively involved.

6.2.6 Railroad Departments Related to Program

Alcohol problems can be health problems. Under some circumstances drinking can involve a violation of company rules, disciplines, and grievance. Under some circumstances, drinking can threaten the safety of people and property. For these reasons, the medical, labor relations, and safety offices on all the roads have a particular interest in the alcohol-related work of various company's employee assistance programs.

Workers with alcohol problems sometimes have associated physical pathologies. Workers with physical ailments sometimes have drinking habits that contribute to their physical condition. The staff in the medical departments are capable of dealing with the physical manifestations of drinking problems and can certify a worker's physical ability to work. Staff at the employee assistance programs have the means of seeing that workers with drinking problems are receiving and responding to treatment for the behavioral dimensions of their condition. These circumstances suggest the need for reciprocal referrals, mutual consultation, and frequent collaborative efforts between the programs and the medical departments. With the possible exception of two roads, the medical departments and programs do not work together very closely. Even on these two roads, the level of collaboration could be increased. On all of the roads, programs rarely get referrals from the thousands of consultant physicians paid through the medical departments to conduct physical examinations and to treat ailments caused or at least accompanied by drinking problems. Some medical staff have not received training on anything but the physiological aspects of alcohol-related problems.

The standard position on all the roads is that there is not and should not be any relationship between the labor relations offices and the programs when drinking rules have been violated until after disciplinary action is taken. Company representatives usually argue that drinking rule violations should be treated like violations of other company rules. Since the consequences of violating a drinking rule may be serious, the penalty for such violations should be severe. Some railroad spokesmen consider the disciplining of reported rule violations to be the exclusive domain of operating divisions. Labor relations offices become involved only on appeal. According to this view, employee assistance staff should not become involved at all until discipline is assessed. Other railroad spokesmen contend

that even the alcoholic must be held accountable for his job-related drinking and its consequences, that the company interests are best served by dismissing drinking rule violators and that the company should not be in the business of rehabilitating dismissed employees. Many company representatives think that changes in company policy might eliminate the fear of severe punishment necessary to reduce job-related employee drinking.

The labor relations office is the railroad's last court of appeal in grievance cases. This office disciplines workers--even those with drinking problems--who are proven to have violated a drinking rule. The employee assistance program provides help to problem drinkers who have not violated or have not been caught and reported for violating company drinking rules and to problem drinkers who have violated drinking rules. The only formal connection any labor relations office has with the program exists on one railroad where a representative of the labor relations office serves as a member of the program's advisory committee. Even though programs and labor relations offices are not formally connected, many workers and most labor leaders associate these offices in their minds. In their eyes, these offices represent the railroad company's two track system for dealing with problem drinkers. One track is punitive; the other, therapeutic. The track on which a particular employee is placed sometimes is not based on his condition but on whether he is among the very few drinking rule violators who are reported and investigated. Since both offices are viewed as agents carrying out company policy, what the labor relations office does has some bearing on the degree to which workers are willing to trust the company and the company program.

With one exception, the safety offices on the study roads have never made any effort to study the possible connection between drinking and injuries or accidents. Most indicated that it was the responsibility of the operating divisions to determine causes of accidents. The most frequent type of collaborative effort between the programs and the safety offices is presentations by program staff on alcoholism at safety meetings.

6.2.7 Summary

All of the programs were started when an individual with access influence on a company president, persistently presented sufficient evidence from his own experience that drinking problems were serious on the roads and a company program made sense from financial and humanitarian standpoints. Data of the kind generated by this project on the extent of the problem and on the effectiveness of programs were not available at the time these programs began. Programs were usually located in places that facilitated access to large numbers of employees, but because of the distances, many employees in need of program services do not have access to them.

Workers prefer program offices to be located off of company property. Directors like their programs organizationally placed where they can be run with visibility, credibility, latitude, and adequate funds. Directors on different roads have found these assets present in different organizational locations. Management generally sets program policy and guidelines and allows directors a free hand in running daily operations. Yet, adequate systems are not now in place that would permit programs to be accountable for providing adequate evaluative data to demonstrate program effectiveness.

Many frontline supervisors do not understand what the program does and how they are supposed to use it. Local chairmen do not have a specified role in relations to the program. The vast majority of workers and management and labor representatives give their programs at least moral support. Workers trust in the program appears stronger on roads where labor plays a prominent role in the program. Most workers have enlightened attitudes about providing assistance to people with drinking problems and are optimistic about prognoses for these problems. Collaborative work on the part of the medical departments, labor relations offices, and safety offices on the one hand, and the employee assistance programs on the other, appear to be less than they could be.

6.3 INPUT TO PROGRAMS

A company program is an interactive mechanism through which workers are led to avail themselves of the kind of assistance that their problems require. A number of elements or inputs go into making this interaction possible. There is the company policy that sets out the company's approach toward workers with alcohol problems, the clients who need services, the program personnel who provide them, the money allocated by the railroad to cover program costs, program objectives that operationalize company policy, materials, and equipment to facilitate program work, and health insurance coverage to pay or at least offset the costs of receiving recommended health services. In this section we will describe each of these inputs.

6.3.1 Company Policy on Alcohol Problems

All but one of the study roads have a written policy describing the company's approach to workers with serious drinking problems. All of the company policy statements view alcoholism as a treatable health problem and hold out offers of assistance without penalty to workers who have not been cited for violating company drinking rules. All of the policy statements indicate that clients will be protected by complete confidentiality and that the company's policy does not affect any scheduled agreement or the normal disciplinary process for drinking rule violations. There is not a standard set of items addressed by all company policies nor are all the elements that constitute the policies always found in official statements. Some items are contained in other program materials such as a supervisor's handbook, and some policies (for example, conditions and time for reinstatement of dismissed drinking rule violators) are sometimes simply understood through practice and not written in any published program materials.

Each of the following items is contained in at least one of the seven companies' policy statements: definition of alcoholism, designation of alcoholism as a treatable disease, reasons behind the company's intervention into these problems, the therapeutic posture of the company toward rehabilitating employees suffering from drinking problems, description of program clientele (for example, inclusion of worker's family), limitations of company involvement and specification of legitimate intervention in certain kinds of alcohol-related problems, procedures through which workers with drinking problems are to be referred to the company program, responsibility of supervisors and managers to refer workers to the programs, basis for supervisory intervention and referral, description of the services provided by the company program, description of the preferred mode of assistance (for example, physical and psychological exam, hospitalization, participation in follow-up through Alcoholics Anonymous, family therapy, off-property contact), role and description of community resources used by the program, description

of rehabilitative goals, constitution of management or labor-management steering committee and labor-management advisory committee, confidentiality assurances, responsibility of program staff, utilization of volunteers, program involvement with workers disciplined for violating drinking rules, minimum time and conditions for reinstatement after dismissal for violating drinking rules.

The National Institute on Alcohol Abuse and Alcoholism (NIAAA) and the National Council on Alcoholism (NCA) have issued separate guidelines on essential features in company alcohol programs that should be reflected in company policy statements. Although these two sets of guidelines differ in some respects as to how some of the elements ought to be addressed, they are largely in accord on what these elements are. Both also agree that these elements should be explicit, written out, and widely disseminated. The major elements are:

1) Company understanding of the nature of alcoholism (both: a disease or health problem)

2) Basis for company intervention (both: alcohol problems worsen job performance as well as health; control benefits company)

3) Company posture toward alcoholic (both: rehabilitative rather than punitive)

4) Procedures for case finding and referral

a) Basis of identifying workers in need (alcohol-related symptoms--NCA; deterioration in job performance--NIAAA)

b) Method of intervention (confrontation over drinking behavior--NCA; confrontation over work performance--NIAAA)

c) Responsibility for case finding (both: primarily managers and supervisors together with labor representatives)

d) Consequences of continued undesirable behavior (both: discipline including firing)

5) Competent personnel within or outside company to assess worker problems and to channel workers to the correct kind of specialized help

6) Access to high quality treatment programs

7) Training of supervisors and labor representatives to carry out role

8) Role of labor

9) Education of work force

10) Effective record keeping that ensures confidentiality and adequate evaluation

11) Third-party payment package.

The itemized lists of policy items from NCA and NIAAA together with the policies of railroad companies provide a basis from which a tentative list of suggested policy elements can be drawn. We will suggest that different companies develop a uniform format for their policy statements. Program directors may want jointly to delineate required items and recast their statements to incorporate their road's approach to each of the items. As we proceed through the rest of this chapter, we will give our recommended approaches to these elements and reasons for preferring one approach to another.

6.3.2 Company Policy on Program Focus and Type

A program's focus is identified by examining the kinds of problems the program deals with (for example, alcohol only, alcohol and other drugs only, and other personal problems adversely affecting job performance) and the kinds of services it provides (for example, assessment referral, diagnostic referral, outpatient diagnostic treatment. See Figure 6-1 for definitions of these services). A close look at what programs are actually doing is more revealing than accepting the self-designations of programs. Table 6-4 presents the self-designation of each program and estimates given by directors of the percentage of alcohol clients with other drug problems, the percentage of clients having problems exclusively with drugs other than alcohol, the percentage of employees with other personal problems besides alcohol and other drugs, and the correct designation of the program based on what it does.

The table makes it clear that however programs think of themselves, upwards of 70 percent of their clients have drinking problems. From 3 to 30 percent of these clients with drinking problems also have problems with other drugs. Even the program that considers itself an alcohol-only program serves problem drinkers who have other drug problems or take alcohol in combination with other drugs. To some degree, all of the programs deal with the personal alcohol-related problems of their clients. These facts have important ramifications for staff competency. Because even the counselor in a so-called alcohol-only program must deal with polydrug use and other associated personal problems, he must have training in at least assessing drug and other personal problems.

Railroads B, D, and F are both broadbrush programs in the sense that they provide services to any employees with personal problems affecting their jobs whether or not these problems are associated with alcohol or other drugs. Railroads E and G appear to have evolved beyond alcohol- and drug-only programs even though their policy statements still characterize them as an alcohol and other drug program or chemical dependency program. Program A is an alcohol and drug program even though it once was almost completely an alcohol-only program and even though some of its staff thinks it is broadbrush because it deals with the alcohol- and drug-related personal problems of its clients. Program C is an alcohol-only program in the sense that it deals only with problem drinkers, some of whom may also have associated drug and personal problems. Unlike the programs on other roads, this program does not provide a mechanism through which drug and personal problems affecting work can be handled by the company. As we shall see later, however, we are not necessarily recommending this program's services be expanded to handle nonproblem drinkers with other drug problems.

TABLE 6-4. DESIGNATION BY DIRECTORS OF PROGRAM TYPES AND SERVICES

Railroad	Self-Designation	Alcohol Only	Alcohol and Other Drugs	Other Drugs Only	Personal Problems Other Than Drugs or Alcohol	Correct Designation
A	Alcohol and other drugs	90	0	10	0	Chemical Dependency
B	Broadbrush	91-94	3-4	4-6	1-5	Broadbrush
C	Alcohol Only	100	15	0	0	Alcohol Only
D	Broadbrush	70	10	15	15	Broadbrush
E	Alcohol and other drugs	70	30	10	20	Broadbrush
F	Broadbrush	90	30	10	0	Broadbrush
G	Broadbrush	85	0	9	6	Broadbrush

Our review of the literature and previous studies of federally-funded occupational programs showed that programs can be characterized by type according to the sets of services/functions which they conduct. There are basically three service delivery types in nonfederally-funded occupational programs. Figure 6-1 presents these three types.

Type A - Assessment-Referral Model	
Distinctive Services	Assessment and General Referral
Generic Functions	Consultation Primary Prevention Program Promotion/Information Casefinding/Motivation Followup Management Evaluation
Type B - Diagnostic-Referral Model	
Distinctive Services	Diagnosis and General Referral
Generic Functions	Consultation Primary Prevention Program Promotion/Information Casefinding/Motivation Followup Management Evaluation
Type C - Diagnostic-Treatment Model	
Distinctive Services	Diagnosis and Inpatient Treatment and/or Outpatient Treatment Selective Referral Aftercare
Generic Functions	Consultation Primary Prevention Program Promotion/Information Casefinding/Motivation Followup Management Evaluation

FIGURE 6-1. TYPES OF SERVICE DELIVERY

Figure 6-2 gives the definitions of each service and function for each program type.

Program Promotion/Information--Disseminate information aimed at increasing the awareness and receptivity of the workforce to program services and at stimulating the use of services by employees and families of employees who need them.

Case Finding and Motivation--Develop a systematic process (1) to identify persons in the workforce in need of assistance for personal problems affecting work performance and (2) to get the employee or family member with problems to seek help.

Assessment-- Make judgments about the existence of potential personal problems in order to make decisions about appropriate referral for in-depth diagnosis.

Diagnosis--Determine the specific nature of an individual's problem to determine whether and what kind of treatment is required.

General Referral--Direct client to an outside agency for treatment or diagnosis based upon initial internal assessment or diagnosis.

Selective Referral--Based upon formal diagnosis send client to treatment facility for specialized care.

Treatment--Apply medical, psychological and/or social processes in accordance with plan to improve the functioning of a person whose problem(s) have been diagnosed.

Follow-Up or Client Monitoring--Ascertain and record how well referred clients are maintaining or increasing gains made in treatment at another service agency following referral and furnish other service options should improvement not occur.

Aftercare--Provide additional counseling and/or client contact when necessary to maintain improved functioning once intensive treatment/assistance has been provided.

Management (Internal)--Administer and direct program resources to achieve program objectives.

Evaluation--Methodically judge the program's effectiveness and efficiency on an on-going basis.

Primary Prevention--Forestall the occurrence of drinking-related events, practices, and patterns which adversely affect the job performance, social functioning and the physical and emotional health of employees.

Supervisory Training--Train first line supervisors in the recognition of poor job performance which may be the result of personal problems, including problem drinking, and make them aware of the service available through the employee assistance program and how they can motivate their supervisors to go to the program for help.

Management/Labor Orientations --Conduct short training sessions for management and labor officials to make them aware of and seek their support for employee assistance program activities.

FIGURE 6-2. DEFINITIONS OF EMPLOYEE ASSISTANCE PROGRAM FUNCTIONS

Table 6-5 designates the typology of each studied Employee Assistance Program according to the problems on which it focuses, the service/functions it usually provides and the services and functions it occasionally conducts by way of exception.

TABLE 6-5. PROGRAM CLASSIFICATIONS

Railroad	Focus	Predominant Service Delivery Pattern	Occasional Service Delivery Pattern
A	Chemical Dependency	Assessment Referral	Diagnostic Treatment
B	Broadbrush	Assessment Referral	None
C	Alcohol Only	Assessment Referral	None
D	Broadbrush	Assessment Referral	Diagnostic Treatment
E	Broadbrush	Diagnostic Referral	None
F	Broadbrush	Assessment Referral	None
G	Broadbrush	Assessment Referral	Diagnostic Treatment

Three of the programs clearly follow the assessment referral model. Three others are usually assessment referral types but counselors on these programs sometimes diagnose and treat. The last program usually functions as a diagnostic referral program but its counselors also sometimes diagnose and counsel clients over extended periods.

One kind of program focus is not necessarily better than another for all roads. Decisions about the focus of existing programs have more to do with the service needs of the work force and the competencies of program staff than on the demonstrated superiority of one type over another. It is conceivable, for example, that a particular work force may not have a serious drug problem (though none of the program directors in our study thought his road was a case in point). In such a case, drug services might not be required. It is also possible for a given program to be staffed by personnel whose competence, experience, and orientation make it the best available mechanism for dealing with alcohol problems and an unsatisfactory mechanism through which to deal with other problems. A company then might consider other alternatives besides making an alcohol only program of this quality into a chemical dependency or broadbrush program. Once we have examined staff experience and training, program outcomes, and railroad alcohol-related service needs vis-a-vis staff counselor caseloads, we will provide reasons why we think assessment referral is the preferable service delivery pattern for railroad programs.

6.3.3 Company Policy on Role of Supervisor

On all of the railroads, the supervisor's role is to refer clients in need of service to the Employee Assistance Program and to report all violations of company drinking rules. On three of the roads, supervisors are told to look for changes in work performance that are unexplainable and irremediable (for example, persistent absenteeism, ineffectiveness, or sloppiness on the job) as indicators. The employee may need program services. On these roads, supervisors are instructed to define work clearly, monitor it carefully, regularly document lapses, and refer employees whose work continues to be inadequate to the Employee Assistance Program without judging the underlying reasons for lapses. On the other four roads, supervisors are told to look for drinking-related signs such as bloodshot eyes, flushed face, odor of alcohol on breath, and work-related signs such as disregarding work, or marking errors, as indicators that the employee may need the program's services.

On all the roads, supervisors are obliged to report employees who are in violation of company drinking rules. Signs of rule violations besides clear possession and use are all signs of the effects of consuming alcohol. Referrals to the programs and citations for rule violations are two distinct responsibilities. The signs that should be looked for in each case depend on whether the supervisor observes unexplainably poor work performance or a drinking rule violation. Poor work and rule violations both require action. Poor work involves the supervisor as the person finally accountable for performance. Drinking violations involve him as the person responsible for ensuring the enforcement of company rules. As we have explained, both problems should result in a referral to the program. In the section on case-finding, we will describe the kind of behavior that is the correct indicator of each kind of problem and how the supervisor should proceed in each instance.

6.3.4 Relationship of Drinking Rule Enforcement and Program

On all but two roads, company practice is to let the disciplinary process run its course without any program intervention. On one road, company policy allows rule violators to hold their job if they have a serious drinking problem and are taking positive steps to deal with it. In Section 3, we explained our reasons for preferring this latter course.

As we have seen there, under present disciplinary procedures, most drinking rule violations are not reported and only a tiny fraction of violations result in dismissal. Current procedures do not ensure effective enforcement. They leave the vast majority of rule violators untouched. On Railroad D, individuals who undergo counseling for a drinking problem are permitted to maintain their employment status with the company even if they are withheld temporarily from service because they cannot do their job safely or efficiently (p. 45). This new policy has not yet resulted in the adverse consequences feared inevitable by officers on other railroads. The percentage of workers on Railroad D who drank on duty was less than the percentage of workers who did so on at least four other railroads last year (p. 38)*.

*Apply confidence levels in Appendix A to the weighted averages for Railroads A, B, D, F, and G in Table 3-13 on page . Apply the appropriate confidence levels from this appendix to corroborate significant differences in the comparisons made in the rest of this paragraph.

The percentage of operating personnel who drank while on duty on Railroad D was less than the percentage of operating personnel who did so on five of the other six railroads (p. 38). On-the-job intoxication rates on Railroad D were about the same as they were on most of the other railroads (p. 39). Drinking rule violators averaged fewer daily violations on Railroad D than rule violators on other roads (p. 42). About the same percentage of workers on Railroad D thought that drinking rules deterred on-the-job drinking as did on the other railroads (p. 54). Railroad D had the highest percentage of reported and charged drinking rule violators (p.42). The problem drinking rate was about the same as that on all the other railroads except Railroad C (p. 42). In addition, as we shall see later, Railroad D's employee assistance program had the highest annual penetration rate of any studied program and had more than twice the percentage of referrals originating from drinking rule violations as other programs had.

On all the roads, program counselors sometimes recommend whether or not a worker is ready to go back to work. On two railroads, it is virtually impossible for a dismissed rule violator to return to work without the counselor's recommendation. This latter policy provides an effective way to ensure that an unrehabilitated problem-drinker does not return to the work force.

6.3.5 Procedures to Protect Confidentiality

On all the roads, programs at least informally guarantee that they will not divulge that an employee is a client unless he has been cited for violating company drinking rules in which case management and others already know. They always promise not to divulge what clients say. On most roads, program staff inform clients that they will tell the company managers whether or not a given employee is, in their estimation, ready to return to work.

Programs take special pains to reassure clients that their confidences will be kept, and program staff generally emphasize the importance of developing personal credibility and trust with clients. The five programs that have all their offices off company property do so largely to protect client anonymity, and their staff at these offices keep client files at home. Other program staff mentioned keeping client files inaccessible or under lock and key. At least one program assigns each client a case number and marks all client records with this number rather than with the client's name. Several programs periodically destroy client records. Interviewees indicated, however, that worker trust among contract workers at least is related more to the degree to which the program is viewed as an exclusively management operation than it is to specific confidentiality procedures. When we deal with the evaluation function of programs, we will explain the precaution we consider important in maintaining confidentiality.

6.3.6 Parts of Policy Adhered to

Program directors indicate that company policies require additional emphasis and implementation. Program directors report that supervisors often do not carry out their responsibility to refer employees to the

program. Some do not know how. Some find it personally difficult to make a referral either because they do not like to approach an employee on the subject, especially when they have known him or worked with him for several years, or they feel they have failed as supervisors if they must resort to referring the employee to the program. Twelve percent of the supervisors have drinking problems themselves.

As has been pointed out before in this report, the most important policy statement that needs more adequate implementation is the one that says alcoholism is a disease and alcoholics will be treated in the same way that workers with other illnesses are treated. In practice, some are not. Some have gotten fired when their problem manifested itself on the job. There are other indications that more work has to be done to make this policy a reality. The principal problem here is an attitudinal one. Like many in our society, railroad personnel tend to deny the very existence of alcohol problems in a way they would never do in the case of other illnesses. Cover-up is widespread among employees. Medical departments seldom document the connection of drinking with physical illnesses. Contract physicians seldom refer workers to the company programs. Safety offices seldom get reports from operating departments about the connection of accidents and drinking. As a matter of fact, if one were to rely exclusively on company records for indications of drinking problems, one would have to conclude that alcohol presents the companies with minor difficulties at most.

6.4 PROFILE OF PROGRAM CLIENTS

Program directors and staff were asked to cull their records to give the following information about their clients: Percentages of railroad employees and family members; percentages of males and females; the average age of clients; the average length of service for employee clients; the percentages of employees in management, operating, and non-operating positions. Four of the programs did not provide data on average length of service.

Three roads had data on the average length of service of their clients. Length of service ranged from 14 to 21 years. Clients on these roads then were in the prime of their working years and had over 10 years of experience on the railroads. These findings agree with the results of other studies by four Employee Assistance Programs in the last 5 years and confirms the view of many interviewees that many problem drinkers are experienced railroad workers.

Among the study railroads, there are five programs that deal with clients having any kind of personnel problem adversely affecting work (broadbrush program), one program that handles clients with alcohol and/or drug problems adversely affecting their work (chemical dependency programs) and one program that serves clients who have alcohol problems--even if accompanied by an additional drug problem but never with a drug problem alone--that adversely affects performance (alcohol-only program). None of the programs have a program component aimed at drinking rule violators who are not problem drinkers.

6.4.1 Criteria for Accepting Clients

All the programs provide services to employees and members of their families. On five of the roads, counselors offer services to any employee with a personal problem affecting his work and to any family member who comes to get assistance for any kind of personal problem. On one road, counselors offer services to workers and their family members only if they have a drinking problem. On the final road, although company policy calls for the referral of workers with any personal problems affecting their work, some counselors provide services to alcoholic clients only, and others to those suffering from chemical dependency. Still others offer assistance to workers and family members seeking assistance for any kind of problem.

One surprising finding is that almost all counselors offer services to virtually every client whose situation involves drinking in one way or other. One possible explanation is that employees referred to the program are clearly in need of services because their drinking problems have progressed to a serious and easily observable stage. In Section 3, we saw that supervisors are reluctant to do anything about problem drinkers and usually make referrals only after drinking problems are serious enough to cause major disruptions. The supervisory pattern of later referral is common among other sources of referral as well. Another reason why most clients are offered services is that assessments or client evaluations are sometimes not very discriminating. As we will see, information provided on assessment techniques in the next section corroborates this explanation. If these two reasons explain the almost universal practice of offering services to all assessed clients, then some clients are being seen only after their conditions have become chronic and some clients may be occasionally channelled into treatment who do not need it. Prescribing treatment to clients who do not need it is especially mistaken and costly when recommended treatment is hospitalization or in-house care and the treatment goal is sobriety.

According to program directors and staff, between 75 to 90 percent of clients offered services accept them when first offered. Those who refuse help either do not feel they need it, think they can handle their problem themselves, or deny that a real problem exists. Program personnel say that most of those who initially refuse help eventually return to accept it. As we shall see, a very high percentage of those accepting treatment see it through to completion.

6.4.2 Program Directors

All but one of the program directors work full time at the Employee Assistance Program and counsel clients as part of their jobs. Except for one program director who has no staff and another who works near his only other staff member, program directors supervise their counselors from a distance. Most have at least weekly telephone conversations. One director gets weekly reports as well as monthly status reports. One director makes most contacts by phone and limits reports to the submission of a short form for all referrals to and from the program. None of the programs has a mechanism through which staff members and directors can negotiate specific tasks and expectations to be carried out and evaluated on a periodic basis. Yet, this kind of process might help alleviate the difficulties of supervising people who are geographically

dispersed as long as it is not excessively time-consuming and does not entail a great deal of writing. When they are not counseling clients, program directors typically spend their time in administrative and liaison work; orientation and educational work among managers, labor officials, and workers; attending AA meetings; visiting hospitals and community groups; identifying, negotiating for, and evaluating community services; traveling; and attending meetings. A few have helped other railroads and businesses start programs. At least one director would like to confine his work to program administration and promotion. Few of the directors appear to have ranked their activities to correspond with program objectives, assumed those most appropriate to their role, systematically delegated other responsibilities to staff or trained volunteers, and reduced or eliminated tasks not directly related to operating their programs.

6.4.3 Program Staff

The programs studied employ a total of 33 counselors--roughly one counselor for every 7,000 employees or one for every 1,000 problem drinkers as the term is defined by program directors. Table 6-6 shows the ratio of employees and problem drinkers to counselors on each of the roads.

TABLE 6-6. RATIO OF EMPLOYEES AND PROBLEM DRINKERS TO COUNSELORS

Railroad	Number of Employees Per Single Counselor	Number of Problem Drinkers Per Single Counselor
A	4,700:1	1,300:1
B	11,700:1	1,700:1
C	9,600:1	483:1
D	1,400:1	238:1
E	6,700:1	950:1
F	3,300:1	600:1
G	6,800:1	1,100:1

During a recent one-year period, counselors served an average of about 50 new clients. If programs set out to serve 10 percent of the problem drinkers (this 10 percent figure is hypothesized to be a feasible goal that would represent a significant impact on company-related problems) counselors who say they are already over-extended would have to serve an average of 85 new clients a year instead of 50. If one assumed that counselors are for the most part working at full capacity, serving 10 percent of the population at need on each road at a rate of 50 new clients per counselor would mean the need for the following number of new counselors on each road based on client load only as indicated in Table 6-7. (Geographic dispersion and travel time would increase these figures.)

TABLE 6-7. ESTIMATED NEED FOR NEW COUNSELORS

Railroad	New Counselors Needed
A	8
B	20
C	1
D	0
E	3
F	1
G	7
Total	40

Given the number of staff currently employed in company programs, new cases amounting to about 4 percent of the population at need, or about 1,500 clients, were handled by staff at existing programs in 1978. This number represents a higher number of workers than the number handled through discipline. As we shall see, this number of those going to programs also represents a high rate of employees whose problem was ameliorated. Staff size across roads would have to more than double from 33 to about 75 for existing programs to be able to reach 10 percent of the problem drinkers in a given year. Though 10 percent, of course, is an arbitrarily selected figure, it can serve as a beginning point for railroads trying to decide what portion of the problem drinkers must be reached by the program to justify company expenditures for the program. However, in setting staff size (and for that matter, program objectives and budgets) the target percentage of the population at risk for a given year can be defined according to this formula:

Total Work Force	x	Percent in Need of Services	x	Percent to be Served in Given Year	=	Number Targeted For Services in Given Year

The product derived above can then be divided by the number of clients which counselors on individual roads estimate they can handle in a given year (last year the average across roads was 50) to estimate the number of counselors necessary to do the job. This final number can then be modified in light of other factors such as distances and other counselor responsibilities and can be compared to the amount of money the company is prepared to provide to the program.

Across the roads, counselors have been counseling people with drinking problems for an average of six years. All but five have had some specialized education in alcohol studies, most commonly they had participated in schools in alcohol studies. These so-called "summer schools" usually run for a week. These schools often provide an excellent orientation and overview of alcohol studies but seldom provide intense training in service skills such as counseling. Others have studied at treatment centers like Hazelden. Twelve of the thirty-three counselors have more than a high school degree; five have bachelor degrees, five have masters degrees, and one has a doctorate. One counselor completed one year of college and the rest graduated from high school. All of the counselors are white as are 92 percent of the workers they serve. Six counselors are women, four on the road with the highest percentage of women in the work force (17 percent) and two on a road with the second highest percentage of women (8 percent). In addition to counseling, staff carry out many of the same activities carried out by directors such as training of supervisors; reporting and writing; program promotion; phone contacts with clients, family members, and treatment facilities; attending AA meetings; talking to community groups, and so forth.

Two directors thought that an ideal staff would be comprised of professionals with whom they say managers are comfortable and paraprofessionals from the railroad ranks, with whom contract personnel are comfortable.

6.4.4 Program Budgets

The seven railroad companies spent $996,000 for their employee assistance programs last year. That comes out to about an average of $4 per employee, $28 per problem drinker, as defined by program directors, and $600 per new alcohol-related client in the last year. Table 6-8 shows the dollars individual companies spent per employee, per problem drinker, and per new alcohol-related client served in the last year.*

* Per client costs would be lower for a chemical dependency program (for example, Railroad A) and for broadbrush programs (for example, Railroads B, D, E, F, G) if other than alcohol-related clients were included in the calculations. Railroad E's per client cost for all new clients, for example, would be $508.28. In no case would any program's per client cost for all kinds of clients be more than 25 percent less than the cost per new alcohol-related client.

TABLE 6-8. DOLLARS SPENT ON EMPLOYEE ASSISTANCE PROGRAMS PER EMPLOYEE, PROBLEM DRINKER, AND NEW ALCOHOL-RELATED CLIENT

Railroad	$ Per Employee	$ Per Problem Drinker	$ Per New Alcohol-Related Client
A	$4.29	$ 21.46	$616.43
B	2.65	17.73	325.94
C	3.15	63.15	635.41
D	19.23	112.50	771.42
E	6.06	32.41	702.29
F	3.97	49.87	2,608.69
G	6.08	38.02	1,488.09

One would think that the more money a company put in per employee and per problem drinker, the more clients it would be able to accommodate with its service dollar. Table 6-8 above shows that this is not necessarily true. Railroad B, for example, pays less per employee and per problem drinker than any other road and yet was able to provide services at a lower cost per new client than any other road. Road F, by contrast, spent the second highest among per employee and per problem drinker, yet ended up serving one new client for the cost Railroad B could serve eight. These and similar patterns on this table may have several explanations. For instance, staff on programs with higher dollar costs per new client may be: spending more time on program-related activities such as follow-up which could require travel to great distances or on outside activities; providing time-consuming treatment services and not just assessment referral services; or performing less efficiently than other programs in using program funds and in generating referrals. Also, a program may be located in a conspicuous on-property office that deters client access.

There is some evidence that points to several factors as at least a partial explanation for the situation. Some counselors spend a great deal of time in follow-up sometimes on clients who have been sober for years and have relatively less time for face-to-face contacts with clients. Other program staff are simply not getting out sufficiently among the work force to generate full-capacity workloads for their programs. Counselors on some programs offer extended treatment services--sometimes against the expressed guidelines of their directors. Some programs have lower labor costs and use volunteers. And at least one program suffers from its poor location on company property.

6.4.5 Budget and Administration

Budgets are generally prepared by the department in which the Employee Assistance Program is located with input from the director and final approval of the chief officer in the departments or in some instances a higher official--the chairman of the board or special assistant to the president. Directors can use funds as they see fit in operating the program. All but one director were pleased with current funding levels but added they could use additional funds for more staff. One director thought he needed larger and more inviting office space off of company property. Prospects for future funding appear promising on all roads except one where the business outlook is relatively poor. All but one director were satisfied with the facilities, materials, and equipment at the program's disposal. On all roads, services are planned on the basis of available funds. Not a single company allocates funds on the basis of service needs.

6.4.6 Program Objectives

Three programs have measurable ofjective statements against which to assess program performance. These statements address penetration of the population in need and other tasks required to reach more clients and deliver better services. Not a single program set objectives for rehabilitation. Two programs have broad written goal statements that are not directly related to program outcomes and cannot provide criteria and standards against which program performance can be gauged. Two programs do not have a set of written objectives. Although it is perfectly possible for a program to be run with admirable effectiveness and efficiency without result-oriented, measurable, and time-framed statements of intended outcomes, we assume that programs can be managed more purposively and success can be more satisfactorily demonstrated when programs have them. Programs with written statements could improve both the substance and form of the outcome statements. Programs without objectives could use help in formulating and then monitoring them. Only two programs engage directors and staff in formulating program objectives. It is assumed here that joint formulation leads to greater commitment of staff and that collaboration is superior to formulation by the director alone.

6.4.7 Health Insurance Coverage

A final program input is health insurance coverage for alcohol-related illnesses. All of the companies have coverage for alcohol-related illness consistent with national agreement policies. Regardless of the carrier, these provisions cover hospital care (and sometimes in-patient care outside of a hospital) with a lifetime maximum benefit of $3,000. Out-patient care is often not covered. A recent study found in-patient costs to be $134 a day and an out-patient visit to cost $20 (DHEW, 1978). Lifetime benefits are a little higher in at least one new package now being prepared by an insurance carrier that covers railroad workers. It does not appear that out-patient services of any kind will also be covered. Insurance coverage restricted to in-patient care almost forces counselors to recommend such care. Some workers unable or unwilling to enter in-patient care and unable to afford out-patient services probably receive no treatment at all because of this restriction.

6.5 SERVICE AND FUNCTION OF PROGRAMS

In the previous section, we explained the foci and services/functions that constitute the program orientation of the seven studied companies. These orientations represent the different approaches which companies take in combating the undesirable effects of employee drinking. In this section, we will describe how the study programs implement key functions.

6.5.1 Program Promotion/Information

Our survey sample was asked how they first heard about the company's employee assistance program: from a friend, a boss, a company letter, union letter, company bulletin board, union bulletin board, this study, or in some other way.

Table 6-9 presents the percentage of aware employees by occupational category who first found out about the program through each of these sources.

TABLE 6-9. PERCENTAGE OF EMPLOYEES BY JOB CATEGORY WHO FIRST HEARD OF EMPLOYEE ASSISTANCE PROGRAM THROUGH VARIOUS SOURCES

Source	Exempt	Ops	Nonops	Overall
Company Organization/ Agents				
Boss	14	6	8	9
Letter	56	33	33	40
Bulletin Board	4	9	10	8
Union Organization				
Letter	1	10	4	5
Bulletin Board Chairman	N/A	1	1	1
Friend	11	30	26	22
This Research	1	1	3	2
Other Sources	13	10	15	13

About half of the workers first found out about the program through a company organization or agent. Twenty-five percent found out from friends. Over 10 percent found out from other sources; only 6 percent found out from a union source.

The pattern was different for program participants. Table 6-10 presents the source from which they first heard of the program.

TABLE 6-10. PERCENTAGE OF PROGRAM CLIENTS FIRST HEARING ABOUT PROGRAM FROM VARIOUS SOURCES

Source	Percentage
Friend	24
Union Representative	20
Company Newsletter	17
Boss	13
Other Sources	26

In this case, more than 40 percent first heard about the program through a friend or union representative.

Employees were also asked how they would like to be told about the programs and the services they provide: in a letter sent home, with a paycheck, in a hand-delivered letter, on a company or union bulletin board, in the company or union paper or through other means. The clear preference of all classes of workers on all roads is to receive personally addressed confidential communication in the form of a letter sent home or with a paycheck. All classes on all but one road preferred the home delivered letter over inclusion in a paycheck envelope almost two to one. On the one exceptional road, exempt and nonoperating personnel preferred inclusion in a paycheck envelope over a personal letter by a slight margin. Operating personnel were about evenly divided between the two methods. Table 6-11 shows the order in which the different classes of employees prefer to hear about the program and the percentages of employees with those preferences.

TABLE 6-11. PERCENTAGE OF WORKERS PREFERRING SPECIFIC PROMOTIONAL CHANNELS IN RANK ORDER

Exempt	Operating	Nonoperating
Letter Home (43)	Letter Home (52)	Letter Home (50)
Paycheck (28)	Paycheck (25)	Paycheck (25)
Company Paper (13)	Company Bulletin Board (12)	Company Bulletin Board (10)
Hand Delivered Letter (6)	Company Paper (4)	Company Paper (6)
Company Bulletin Board (5)	Union Paper (4)	Hand Delivered Letter (6)
Other Media (5)	Other Media (3)	Other Media (4)

Program directors said they promoted their programs by using handouts, company newsletters and magazines, supervisory and management orientations, union briefings, and safety meetings. Several indicated they occasionally sent materials in personal letters or flyers in paychecks. Several directors indicated they would like to promote their programs more but do not have time.

One director feels that it is more cost effective to address frontline supervisors than it is to speak to employee groups directly. Two other directors think that personal contact and visibility among members of the work force is vital in promoting the program.

In our functional definitions, we have made a sharp distinction between program promotion/information and case finding/motivation. We have done so because each function aims at a different objective, is best served by a particular message and is more successfully achieved by emphasizing a different mix of means. Program promotion is aimed at making the entire work force aware of the program's services and receptive to accepting these services. For reasons discussed in Section 2, an essential ingredient needed in the message seeking to increase awareness and receptiviity is that a policy states that all problem drinkers in need of services--including first offenders of drinking rules who are not problem drinkers--will be channeled to treatment and kept on the job as long as they are progressing satisfactorily in treatment. Only one road has this policy. Case-finding and motivation are aimed at putting a process in place to identify people in the work force who need program services and to actually get the person to seek or accept help.

Only 9 percent of workers first heard of their program through a supervisor. As we shall see in greater detail, workers are less likely to go to supervisors for help than to anyone else. We have already seen that the most frequent response of supervisors to their observation of drinking problem is to do nothing. And finally, supervisors are generally instructed to identify and refer employees to the program not to promote and explain its services. As a matter of fact, many supervisors know little more about the program than that it exists. For these reasons, indirect program promotion through supervisory briefings appears to be ineffectual unless supervisory roles and training are expanded to focus on what the program is as well as on referral. Thus as we discuss in the next section, the primary responsibility of supervisors lies in the area of case finding.

Virtually all program directors and staff emphasized the crucial nature of employee trust in successful employee assistance programming. To a certain degree, trust may be engendered by word of mouth, second-hand experience, through indirect communications and through the other mechanisms used by programs to promote program use. None of these means adequately substitute for personal contacts with program representatives. Yet it is clear that 33 program staff members cannot be in personal contact with large portions of the 234,000 man work force they serve. And the number of staff likely to be added to programs in the near future is not likely to change appreciably the counselor-worker ratio. But program directors and staff need not be the only ones who represent the program. For reasons we will discuss later, directors and program staff should concentrate their efforts on activities connected with assessing clients, referring them to community resources, and on training supervisors and local chairmen. There is a capable, willing, and trainable cadre of railroad workers who could be systematically mobilized to assume a major portion of responsibility for program promotion (and follow-up) under the direction of program staff. These potential extensions of program personnel would be specially selected former program clients. They could be trained and used as volunteers and become an integral part of the program.

6.5.2 Case-finding/Motivation

The purpose of this function is to get employees in need of services into the program. This function is also often called identification/referral. Some labor representatives think the term identification smacks of witch-hunting. We prefer case finding. Since we are confining the term "referral" as a function to describe program services to community agencies and referrals involve persuading workers to do what they do not want to do, we prefer the word "motivation." Program personnel were asked the percentages of referrals they received from various sources. Several companies do not keep records of referral sources and were able only to make estimates. Among the programs with data, there are differences in the way referral sources are categorized. One program, for example, lumps referrals following a violation of drinking rules with supervisory referrals. Some programs single out and others lump some or all of the following referral sources under "other": family, friends, physicians, courts, ministers, former program participants, and union.

Despite the lack of complete comparability, program records generally give this overall picture of the sources in terms of the percentages of referrals they account for:

	Percentage
Supervisors	35
Self-referrals	25
Reporting drinking-rule violations	15
Family	10
Others	15.

Even though many supervisors do not do anything when they have reason to be concerned over an employee's unexplained performance lapses or when they have reason to believe an employeee has a drinking problem, supervisiors still account for the highest percentage of referrals on all but one road. There appear to be at least two important reasons why programs should develop their supervisory capability to make referrals. Supervisors represent the legitimate point of intervention for companies whenever personal problems including drinking result in unacceptable work performance. Secondly, as Roman (1978) has argued, almost all we know about drinking problems indicate that many if not most problem drinkers will not seek help unless they are confronted and motivated by being presented with a threatening dilemma--get help or lose your job. One cannot assume that all so-called "self-referrals" take place through self-motivation and not through some kind of confrontation and presentation of an undesirable alternative. Threat of job loss is one of the most compelling kinds of leverage available in getting problem drinkers to use the company program.

Supervisors on all railroads have two related but separate responsibilities with regard to an employee's unacceptable job-related behavior. First, it is their job to help an employee with an undetermined and unexplainable problem affecting work to get his problem addressed and under control. On the roads where broadbrush assistance programs are in place, this means automatically referring the employee to the program. On roads where alcohol-only or chemical dependency programs are in place, there is no mechanism within the company for assessing the nature of an undetermined problem resulting in unacceptable work. These diverse situations could be accommodated by initiation and implementation of policies such as the following:

1) Supervisors should be held responsible for identifying employees whose work is inadequate for whatever reason, including drinking, not for making judgments about whether or not a worker is a problem drinker on the basis of alcohol-related symptoms.

2) Supervisors should not make assessments about the nature of personal problems affecting work.

3) Supervisors should document performance deficiencies and confront offending employees about their performance.

4). During confrontation, supervisors should indicate help is available for whatever is causing job problems.

5) They should refer positively disposed employees to prearranged sources of help--the company program where there is broadbrush orientation; other sources where there is not.

6) Employees who take positive steps should not be penalized. Employees who do not take positive steps and whose job performance does not improve should be given normal discipline for whatever job problems they are causing.

In addition to identifying problems in work, a second supervisory responsibility is to report employees violating company drinking rules. Although supervisors are not qualified to decide whether or not a worker has a drinking problem, they are qualified to assess evidence that a drinking rule has been violated. They can make these determinations on the basis of the observed effects of drinking and where tests are in use through blood or urine analysis. The conclusion supervisors should draw from these observations is that the rules were or were not broken. Under no condition should a supervisor decide that an employee has a drinking problem.

Problem drinkers drink on duty an average of 11 days a year compared with nonproblem drinkers who drink on duty an average of four days a year. Citation for rule violations could be an excellent mechanism for getting the population in need to service if rule violators were cited and not ignored. On all but one road, all rule violators are punished whether they take steps toward correcting their problem or not. Supervisors would be more inclined to report these violations if companies would initiate several other policy changes:

a) All workers violating drinking rules for the first time should be referred to the company program.

b) First offenders of drinking rule violations should not be immediately penalized since they might be suffering from a health problem.

c) Those employees determined to have a drinking problem requiring specialized assistance should not be dismissed as long as they participate and progress in treatment supervised by the company program and would remain suspended only until program personnel certify they are ready to return to work.

d) Those employees who do not have a drinking problem should not be dismissed after a first offense as long as they participated in newly established employee assistance education programs and would remain suspended only for the average period of time problem drinkers remain out.

e) Supervisors should be trained in setting and evaluating performance standards and in referring those whose performance lapses cannot be helped through normal procedures (e.g., additional training, transfer, job-restructuring, etc.) and handling drinking rule violations according to the practices in applying the rules which this study recommends.

Self-referral rates have been on the rise on almost all the roads and this increase should be continually encouraged through program promotional efforts. However, this promising trend may tend to lessen program efforts at generating referrals through essentially confrontational means like supervisory referral. It may also obscure the fact that many self-referrals result from confrontations with people like friends and family members, especially spouses. Properly slanted promotional materials and less punitive policies might increase referrals from family members although there are problems with just about every way of accessing family members. Physician referrals might be increased if medical departments would use whatever leverage they have with consulting physicians in the community to make program referrals.

The most unorganized and underused source of referrals among agreement workers are the railroad local chairmen and members of the various brotherhoods. On several railroads where labor's active involvement is not welcomed, referrals from unions are rare. On roads where labor participation is more positively viewed, some union-initiated referrals take place even though chairmen have no formally recognized roles in the assistance programs beyond membership on advisory committees.

Coworkers are often aware of habitual rule violations and intoxication on the job before supervisors. In Section 4, we saw that 66 percent of them are afraid to work with drinking employees. The most serious obstacle keeping them from doing anything about their situation is that the only available recourse they now have would be to report a coworker and friend and see him disciplined and possibly dismissed. Properly organized and instructed local chairmen could serve as the foci of a peer intervention program that would complement supervisory referral efforts as a two-pronged company-based strategy for reaching problem drinking workers.

The principal features of this peer intervention program would be:

1 Objectives: to identify employees whose drinking has become a matter of concern to other employees or family members; confront offending employees with the fact that their drinking is causing difficulties for other workers or family members; and to use whatever leverage is available, to get the employee to go to the program to see if he does have a problem before work deteriorates noticeably or drinking rule violations are observed or take place.

2 Roles: the local chairmen would serve as the hub of this process. They would confront workers with or without coworkers (depending on the circumstances); the focus of their confrontation would not be that the employee is definitely a problem drinker--that may be the task of a counselor in a clinical confrontation--but that his coworkers have problems with the way he is drinking.

3 Organization and training: directors would work through general chairmen to set up training programs for local chairmen and with local chairmen to foster use of the peer intervention model among workers.

6.5.3 Evaluation of Client Problems

Most program personnel evaluate clients by gathering information about the existence of problems and by classifying them into broad categories in order to make decisions about appropriate referral for in-depth diagnosis and treatment. We call this type of client evaluation assessment. A few counselors analyze more closely to determine the specific nature of an individual's problem so that they can decide whether and what kind of treatment is required. We call this type of evaluation diagnosis.

There is little uniformity in the way clients are evaluated. The objective of the first interview on six of the railroads is to determine whether and what kind of problem the client has and what should be done about it. On the seventh road, program staff believe the original presenting problems may not be the root problem. They use the first interview to relax the client and subsequent interviews to identify the problem troubling the client. Staff at two programs prefer to meet clients with their spouses and family, if possible.

Some staff members conduct their assessment in a very detailed manner. They may talk with the client's supervisor, union representative, and family members before they see the client in order to be prepared to ask questions of the client during the assessment. Counselors probe drinking-related problems (for example, absenteeism, family problems, drunk driving, etc.), and/or drinking patterns (for example, intoxication, solitary drinking, morning drinking, etc.). They sometimes use a variety of instruments (such as the John Hopkins test, Michigan State University test, or locally developed questionnaires). Other counselors, especially those who are recovering alcoholics, make assessment decisions after hearing clients discuss their problems on the basis of inexplicit criteria derived from past experiences.

The state of affairs on assessment is fairly standard throughout the alcoholism field. Symptoms that indicate the existence of a problem vary widely. Criteria for deciding how many of what symptoms mean what are slippery at best. The use of categories like health and disease give these assessments an authority beyond appeal and the counselor cannot be proven wrong. This uneasiness with the assessment processes now in use is reinforced by the fact that all counselors consider assessments an easy task and almost all clients are offered services. Since, as we shall argue later, assessment-referral should usually be the basic service employee assistance programs offer, company programs, possibly through the association of directors, should make a major effort to make client assessments more explicit, disciminating, and uniform in terms of the symptoms diagnosed and the criteria applied in order to make decisions about client disposition.

Assessments/referrals should result in a sound judgment about the possible existence of a personal problem adversely affecting work, and in a commitment on the part of the client to go to qualified agencies for an in-depth diagnosis. There are a number of reasons why staff at railroad employee assistance programs should not go beyond the kind of evaluation we have been describing and get involved in diagnosis, that is, determining the specific nature of the problem so that a treatment plan can be developed. First of all, a diagnosis would be duplicative because it routinely is done at the referral agency to which the client is sent. Secondly, diagnosis, not to mention long-term treatment are too time-consuming for program personnel given the magnitude of need for service on the roads. Finally, many program personnel are not equipped to conduct the kind of intense diagnosis necessary to develop an effective treatment plan. For all these reasons, as a general rule, the exclusive assignment of company employee assistance programs should be assessment-referral, and programs should conduct only those activities which support these primary services: program promotion, case finding/motivation identification, selection, referrals, selective monitoring of referrals to treatment services, client followup, primary prevention, program evaluation, and management. Diagnosis and/or treatment should be considered as a program service only where unquestionably qualified staff are on board and when offering such services is demonstrably cost-efficient.

6.5.4 Referral Practice

While each of the employee assistance programs (EAP) provides initial assessment of client problems, what happens next varies greatly among (and even within) railroads. Varying percentages of clients are referred to medical inpatient services, typically located in hospitals. A staff of one program believes that few of the clients need hospital inpatient treatment, and consequently they refer only about 25 percent of them to it. Staff at other programs refer almost all of their clients to such hospital-based programs. On one railroad, which has a large number of counselors, the program director told us that the decision to hospitalize a client is a personal one and rests with the counselor. Some counselors hospitalize almost none of their clients; others hospitalize almost all of them.

These hospital stays vary from 21 to 45 days with an average stay of about 30 days. All include detoxification, when appropriate, family therapy, group therapy, and individual therapy. Regardless of whether they are medically oriented or not, inpatient facilities offer the advantages of placing the client in a controlled environment away from outside conditions, which may foster drinking, and leave him without access to alcohol. They also guarantee that the client will receive maximum support and monitoring during the early stages of counseling. At least one of the programs uses inpatient treatment facilities that are not medically oriented.

Medically oriented in-patient facilities have the advantage of being covered by employee's insurance plans. Insurance coverage can be a very important consideration, since the costs of in-patient treatment range up to almost $5,000 in at least some of the private facilities being used. Even the least expensive in-patient facilities cost about $2,000 for a month's course of treatment.

A major disadvantage of medically oriented programs, as perceived by EAP personnel, is that they sometimes rely too heavily on drugs such as antabuse to control client drinking. Some programs try to select in-patient facilities based upon the facilities' acceptance of the AA philosophy, and program counselors sometimes find antabuse inconsistent with the AA approach.

In all cases except one, EAP counselors usually escort clients to the inpatient facility and visit them every week to 10 days while they are in the hospital. On the exceptional road, where about 50 percent of the clients are hospitalized, counselors only gain admission for clients to the facility. That program's philosophy is that the counselor should only serve as an access to resources, and whether the client is referred to inpatient or outpatient care, no long-term, personal relationship is allowed to develop between counselor and client.

One of the major reasons for selecting particular inpatient facilities is AA involvement at the facility. All programs encourage and require AA participation. Al-Anon is also involved where appropriate. AA is the only outpatient care to which some programs refer clients, maintaining that other forms are either too expensive, ineffective, or both. All programs support AA and make it a key element in their operation, although one director indicates that there are many types of AA groups and finding the proper group for each client is necessary. He likened selecting the proper AA group to buying a car and suggests that clients "test drive" different AA meetings until they find one they are comfortable with. Workers, interviewees, and program staff in railroads almost universally consider AA as an indispensable aid in maintaining treatment programs.

In conclusion, it appears that the initial assessment is a required step and must always precede further activity by the programs. Although some programs and some counselors appear to be judicious in their referrals to hospitalization, others may be too automatic in such referrals. Many clients may be hospitalized without a true need for medical services and only because hospitalization provides the only kind of treatment for which third-party payments are currently available.

Programs and counselors who do practice such routine hospitalization should consider seeking out sources of outpatient care that could provide counseling services and social support in those cases where medical care is obviously not required. Since data from the general survey indicate that even most of those who drink on the job are not problem drinkers, referral to medical programs should never be automatic.

In our opinion, the best policy would be one which specifies careful assessment of the existence and severity of an incoming client's problem by the EAP counselor. At least in those cases when there are no physical or medical complications and there are reasons why a client is unwilling or unable to enter inpatient care, counselors should refer clients to outpatient facilities and AA.

Where the drinking problem is accompanied by medical complications, inpatient medical treatment is, of course, indicated. In some cases of severe problems, even without medical complications, inpatient care may be necessary. This care should be nonhospital, if possible, although lack of an appropriate facility or lack of insurance coverage for such a facility might dictate use of an alternative, medically oriented unit.

The EAP counselors should not become involved in long-term counseling of clients. The potential number of clients whom they must reach preclude such involvement. Counselors should specialize in education of the work force, early identification of cases, assessing problems, making appropriate referrals, and identifying and monitoring the services of programs where clients are sent. Counseling and treatment should be left to the referral agencies which have the resources for such treatment. The responsibility of the programs is to help the greatest number of workers they can, and this can best be accomplished by finding new cases which can be assessed and referred to the most appropriate form and focus of treatment.

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Programs should use any influence they can develop, both within their railroads and through professional organizations, to obtain insurance coverage for outpatient treatment for their clients.

The emphasis which all of the programs put on AA participation seems well founded since 80 percent of the respondents to the general survey indicated that they would seek help from AA if they thought they had a drinking problem. AA should continue to play an important role in the programs. On the other hand, 20 percent indicated that they would not seek help from AA. Provisions should be made within EAP policies for those clients who, for one reason or another, do not accept the AA philosophy.

6.5.5 Follow-Up

All of the programs emphasize the need for follow-up. Program staff consider follow-up a critical element in the client's recovery. Follow-up is especially intense in the first six months after entry into treatment, but usually tends to fall off after that.

Follow-up may take one or more of the several forms. These include telephone calls to a client's house, visits to a client's home, visits during AA meetings, or inquiry through AA representatives or agents of the client's treatment facility. Visits are only rarely made to clients at their place of work and if they are, it is only with the prior consent of the client.

Several factors make follow-up especially difficult in the railroad industry. Principal among these factors is the geographic dispersion of workers over wide areas. Individual clients may be hundreds of miles from a counselor. Another problem is that individual programs may have many active clients. One of the programs we studied has 3,000 active clients in 19 states. It seems impossible for the program staff on that railroad to personally follow-up on each of these clients on a regular basis.

Some programs follow-up their clients for set periods of time and others do not. Set periods range from two years to the client's death or the withdrawal from employment. On those without set periods, follow-up may last from a few months to over a year.

On one railroad, the participation in follow-up activities is a part of the written policy statement of the program. One program director proposes that incoming clients and counselors negotiate a contract in which clients agree to participate in follow-up for an agreed upon length of time. All of the specifics of each individual's responsibilities would be included in the contract.

Each of the programs recognizes the importance of follow-up activities although everyone of them confesses to not having the staff resources to do what they consider an adequate job performing this function. Considering the nature of railroad work, especially the dispersion of the work force, it seems unreasonable to expect that counselors could personnally perform this function even if a reasonable number were added to program staffs. As more counselors brought in more clients, the demand for follow-up activities would grow faster than the additional counselors could handle them.

Follow-up is a vital program activity and it should be done well. Client progress should be monitored and impediments to progress assessed, both for the sake of the client and for the sake of future clients who might be referred to the same treatment facility. The new client should be handled sensitively and shown concern until he removes himself from treatment. The older client should be shown that the program and his employer have a continuing interest in his well being. The program should find out if the client is in danger of back sliding.

We suggest that programs do not rely upon their counselors to perform the follow-up activities. We know that it is physically impossible for counselors to perform this function adequately. Counselors are trained specialists who should concentrate on identifying and getting new cases into treatment. Follow-up is a task that can be delegated to trained volunteers, perhaps AA members, and/or former clients, who could accept responsibility for this vital task. Professional materials currently exist that program directors could use to help themselves organize, train, and direct such a volunteer corps. Many of the programs have adopted the rudiments of this method already through their reliance upon AA or treatment agency representatives for follow-up. We merely propose that the methods be systematized and made a formal part of program operation, thus freeing the counselors to take on greater caseloads.

We feel that the idea of performance contract for follow-up is a valuable one. Clients will know from the outset what their responsibilities are and what those of the program are. This should reduce misunderstanding and allow clients and staff to work together better. Also, railroad workers are familiar with the concept of contracts and may accept them willingly. By negotiating with the counselor, the client takes an active role in his own treatment. The counselor, of course, must take the lead role in the contracting process, and there may be individual cases where, in the counselor's professional judgment, contracting is inappropriate. The counselor's right to make individual exceptions must be preserved, and the entire follow-up process, whether or not it involves contracting, should be a part of the program's written policy statements.

Finally, if set-periods of follow-up are established, either as a matter of policy or through individual contracts, provision must be made to revise those periods as the circumstances of individual cases warrant.

6.5.6 Primary Prevention

Primary prevention efforts are aimed at forestalling or reducing the incidence of undesirable alcohol-related events (for example, drinking on the job), hazardous drinking practices (for example, excessive drinking or intoxication) incidental drinking problems (for example, occasional alcohol-related absenteeism) or habitual drinking problems (for example, patterned productivity loses caused by drinking). The principal targets for primary prevention efforts as they are defined here are workers who do not currently have drinking problems. (Efforts at identifying problem drinkers in early stages of their problem to curtail them and hinder their exacerbation are sometimes called prevention or secondary prevention.) There are three basic complementary and sometimes overlapping "prevention models open to alcohol programs. The first is aimed at the drinker and includes attempts to increase knowledge, change attitudes, or directly influencing behavior with regard to drinking.The second model is directed toward modifying the drinker's environment and is directed toward changing the setting in which drinking occurs and the group mores that often govern drinking practices. The third model is aimed at alcoholic beverages themselves and attempts to reduce the content, curtail the availability or distribution or advertise the dangers of alcoholic drinkers.

Like many programs in other industries, railroad employee assistance program have been understandably "doing little or nothing" in the area of primary prevention. Programs have all they can to just meet demand for services on the part of those who already have drinking problems. They have their limited staff and resources concentrated on those needing rehabilitative services. In a word, they have reached out to help those actually victimized rather than to serve those who are only potential victims. It is assumed here however that a real dent in problem drinking rates can be brought about only if programs adopt a two-fold strategy: (1) facilitate the rehabilitation of problem drinkers through assessment and referral services and (2) reduce the incidence of new cases through primary prevention efforts. Although this study did not determine the percentage of new cases of problem drinkers that develop in a given year, it appears from the data on correlates that more than one problem drinker in his twenties or thirties replaces every problem drinker in his forties, fifties, and sixties who are rehabilitated. As programs try to increase demand for services on the part of those now in need, they must also reduce the need for services since the likely available future resources probably will not be sufficient to enable programs to handle all the need were it transformed into demand.

Representative associations of directors should take the lead in developing and encouraging the implementation of primary prevention strategies. Data from this study suggest some possible approaches.

a. Strategies Aimed at Railroad Drinkers

Existing program materials describe the nature and treatability of alcohol-related problems and the way the program works. They could also include information to help problem drinkers decide whether and how to

drink. In 1976-77, the National Center on Alcohol Education (NCAE) identified and tested educational content aimed at educating adults to make more explicit and sensible choices about their drinking practices. Selected information from this source and from sections 3, 4, and 5 of this report should be summarized and tailored to railroad workers and made part of all program educational efforts. These materials could form the content of newly established programs for reported rule violators who are not public drinkers. The establishment of this new program component should be one of the first primary prevention strategies considered by programs. Programs do not now provide assistance to rule violators who are assessed not to be problem drinkers; yet their on-the-job drinking constitutes a clear danger to the company. Various kinds of group sessions should be contemplated so that these workers can come to a realization of what are and are not sensible drinking practices.

b. Strategies Aimed at Drinking Environment of Railroad Workers

Companies probably do not have the power or the prerogative to inject themselves into the off-the-job contexts of workers lives. They do have the capability and right to effect their work-related settings. Many things can be considered in trying to reduce drinking rule violations. The following kinds of changes might contribute to this end: (1) reduction through whatever means are possible in the frequency and duration of layovers, (2) intensification wherever possible in the frequency and length of supervisor contacts, (3) consistency and applicability of drinking rules to all personnel including management. (4) allotment of a portion of supervisory training time to their function as positive role models with regard to drinking rules, (5) inculcation of the idea that on-the-job drinking is not only a matter of safety but not good business for any employee, (6) installation and implementation of work-scheduling processes that ensure the greatest degree of predictability and (7) a policy that allows, even encourages, workers, especially operating personnel to mark off when they are not fit for work.

c. Strategies Aimed at Reducing Availability of Alcoholic Beverages

Although companies prohibit workers from bringing alcoholic beverages on compnay property, they do not forbid workers from having lunch breaks off of company property. As we have seen, many workers do not tend to see drinking off of company property during work hours as a violation of company rules. In fact a good deal of on-duty drinking occurs off company property during lunch or meal breaks. Where it is possible to restrict employees to eating lunch on property without causing an unacceptable level of negative reaction, this policy should be considered.

6.5.7 Program Evaluation

All of the study programs develop some evaluative data on program performance. All of the programs can make improvements by increasing the possibility of evaluating their programs, working with other directors to foster comparability of evaluation data and by enhancing the credibility of their reported results.

Employee assistance programs strive to do three essential things:

1) Get as many persons who need services as possible into the program. The objective here is to get a selected percentage of problem drinkers to the program. Essential means are promotion/information to increase receptivity

and case finding motivation to actualize receptivity into referrals. The desired result is a high pentration rate.

2) Get as many as possible of those who present themselves to the program and are actually in need of services to sources of help suited to them. Essential means here are assessment/referral (in out view, not treatment), identification selection, and use and monitoring of high quality community resources. The objective is a high rehabilitation rate.

3) Ensure the maintenance treatment gains. The essential means here is follow-up. The objective is to update and ensure rehabilitative process through frequent and effective post-treatment contracts with clients.

Programs should examine all of the required program functions and services against specific criteria. They should also record and document data on the major outcomes described above. To be evaluated, a program requires: a clear picture of what the program's business is (program model), time-framed and measurable objectives to operationalize data collection systems to ascertain the degree to which resources and activities are achieving program goals.

Railroad programs are at a stage when collaborative efforts can pay dividends for individual roads as well as for the state-of-the-art in occupational programming throughout the industry. A joint effort by program directors can isolate approaches that return better results.

Programs should be evaluated at least periodically by independent evaluators. There is a great deal of skepticism among managers on railroads and among researchers in the field on the results that are habitually reported from within the occupational field. Part of this doubt can be traced to the fact that evaluative data is provided only by the programs. Installation of a thorough evaluation system should be an integral part of program initiation. Existing programs should make special efforts to install such a system soon. In the immediate future, all existing programs may choose to use some or all of the instruments used in this study to get ideas about how to improve their services.

6.6 RESULTS OF PROGRAMS

So far in this Section, we have described (1) the context in which employee assistance programs operate, (2) the resources companies put into their programs, and (3) the services and functions programs perform. All that remains is to describe the results they achieve. Several cautions should be kept in mind in weighing the evaluation data that follow. Evaluative criteria examined were derived from our analysis of what are sometimes implicit goals or objectives. Much of the data on which this section is based are provided by the programs themselves and by a limited sample of program participants. Some programs do not maintain very detailed centralized data. Some programs do not keep records of important categories of information. In some instances, we had to develop estimates from information gotten through indirect sources. Sometimes programs keep the same information for employees only and family members separately or for different length of time so that comparisons are difficult to make.

We will point out figures that are estimates and the limitations o f comparisons where necessary. The output and impact rates we present represent clients who are employees only (90 percent caseload) and not members of employee's families. We will consider two kinds of results: outputs, which are observable indicators that show the level at which services are provided and received and effects or measures of impact which are observable indicators that show the degree to which programs achieve their objectives. The principal outputs considered are: awareness (percentage of workers who know about the program); and penetration rates (percentage of problem drinkers as defined by directors who present themselves for services). We attempted to ascertain contact rates (percentage of workers who contacted the program for information and/or help but did not present themselves physically to the program) but programs do not maintain this information. Per client costs and counselor caseloads are the final outputs to be presented.

The principal effects to be presented are rehabilitation rates (percentages of clients rehabilitated who come to the program and who accept services) and reduction in selected company-related problems caused by drinking (for example, absenteeism, performance, etc.)

6.6.1 Awareness Rates

Railroad workers were asked if they were aware their company had an employee assistance program. Table 6-12 shows their responses.

TABLE 6-12. PERCENTAGE OF WORKERS AWARE OF COMPANY PROGRAM

Railroad	Yes	No	Don't Know
A	88	1	11
B	58	10	32
C	63	8	29
D	94	0	6
E	74	6	20
F	72	6	22
G	58	10	32

Across the roads, 75 percent of workers know for sure their company has a program, 6 percent think they do not have a program and 19 percent are not sure one way or the other. The three variables that affect awareness rates most are age of the program, size of the company, and level of promotional effort. The longer programs have existed, the smaller the number to be reached and the greater explicit attention given to promotion, the likelier awareness rates are to be higher. On two pairs of roads of fairly comparable size, and longevity, higher awareness rates appear to be related to higher promotional levels of effort. The two roads with relatively higher awareness rates also use personal letters or flyers in paycheck envelopes.

The two favored communication mechanisms of employers -- in general, the bigger and newer a program, the more promotional resources are needed.

It appears that much lower percentages of workers, like supervisors, are likely to know what programs do than know about their existence. One indicator of this ignorance is exemplified by worker responses to the question: " Does your railroad's employee assistance program help family members?" All of the studied programs do serve family members. Table 6-13 presents workers answers to this question.

TABLE 6-13. RESPONSES TO ASSISTANCE PROGPAM'S AID TO FAMILY MEMBERS

Railroad	Yes	No	Don't Know
A	47	3	50
B	27	5	70
C	25	7	68
D	68	2	30
E	42	3	55
F	22	5	73
G	34	4	62

Only about 40 percent of workers are sure their company's program serve family members. There appear to be several considerations companies should ponder in deciding whether to advertise family services more intensively. First, is the company prepared to provide services for the probable increase in demand for services such promotion would encourage? Can the program handle increased demand from employees and their families or is the company interested in concentrating limited resources on workers only? One advantage of adverising the availability of company services directly to family members is that such promotional efforts might be subtly used to generate family referrals of employees, although this approach is not without its hazards. In any event, if awareness about the availability of family services is a legitimate indicator of employee knowledge on how the program works, many employees need to know more about the program besides its existence.

6.6.2 Penetration Rates

In our sample survey, workers were asked if they ever went to their employee assistance program. Less than 3 percent of the respondents indicated they did at some time or other in their railroad career. Column 1 of Table 6-14 presents estimates of the percentage of problem drinkers as defined by this study on individual roads who presented themselves in the last year for alcohol-related services. Column II presents the percentage of problem drinkers,as defined by the directors, who did so.

TABLE 6-14. PERCENTAGE OF PROBLEM DRINKERS GOING TO EMPLOYEE ASSISTANCE PROGRAM LAST YEAR

Railroad	Study Definition	Director Definition
A	4.6	3.5
B	5.8	5.4
C	9.9	9.9
D	16.6	13.8
E	5.8	4.9
F	2.6	1.9
G	3.1	2.6

There are a few remarkable facts about these estimated penetration rates for a recent one year period. Programs that spend more dollars per new client served did not necessarily serve higher percentages of problem drinkers in their work forces. As a matter of fact, there was a strong inverse relationship between per client cost and penetration rates. Column I of Table 6-15 shows the order of program per client costs and the amount programs spend on each new case.

TABLE 6-15. PER-CLIENT COSTS CONTRASTED WITH PENETRATION RATES

Railroad	Per Client Costs	Penetration Rates
B	$ 325	5.4
A	616	4.6
C	635	9.9
D	771	13.8
E	702	3.5
G	1,488	2.6
F	2,608	1.9

There does not appear to be a single variable or set of variables examined in the study that explain variation in penetration rates. On several roads, it appears that the low ratios of counselors per problem drinker and of counselors per track mile have a bearing on the lower penetration rates scored on these roads. However, one road with a relatively high penetration rate has the worst counselor per employee ratio and the road with the most track miles per counselor has the best penetration rate.

Information from our interviews of program staff suggest that other items may affect penetration rates on individual roads. The items that appear to reduce a program's penetration rate are: (1) Limited referral mechanisms--for example, over-reliance on referrals coming from rule violations or from self-referrals; (2) Inadequate staff size-- programs understandably tend to promote only the demand which they are actually capable of meeting; (3) Part-time or partial program management--program managers who manage on a part-time basis or who share managerial responsibilities with others are at a disadvantage in planning and monitoring program activities that promote referrals; (4) Office location and atmosphere-- highly visible on-property locations do not provide potential clients with

assurances of confidentiality. Small, unattractive and poorly furnished offices do not engender initial client confidence in the competence of program staff. The items that appear to increase a program's penetration rate are: (1) Provision of limited services--program staff who assess and refer have more time to develop referral channels than staff involved in protracted counseling; (2) High level of program promotion and supervisory training--the more receptive workers are to program services through program promotion and the more effective supervisors become at confronting and referring through training, the higher the penetration rate; (3) Delegation of responsibilities--the more staff are able to organize and delegate follow-up responsibilities to very selectively chosen and trained volunteers, the freer staff will be to strengthen company-based referral mechanisms. (4) Curtailment of follow-up activities--a concentration of follow-up activities on recent clients and selected others actually requiring follow-up also frees staff to increase referral rates; (5) Trust of program among workers and labor representatives--the essential ingredient of this trust is the assurance workers have that if they successfully cooperate with the program, they will maintain or be restored to their jobs; (6) Intensity of staff work--not surprisingly, there is a close relationship between staff commitment manifested in time-consuming effort and penetration rates.

We have reported that all seven railroads spent $408,000 last year during grievance procedures to dismiss 384 employees who violated company drinking rules. Railroad companies paid about $1,000 to dismiss each of these rule violators. During that same year, employee assistance programs spent about $970,000 to serve 1,554 clients. Company programs spent about $625 to serve each client. Consequently, companies spent more last year to dismiss a rule violator than they did to serve the average program client.

6.6.3 Service Acceptance Rates

Penetration rates indicate the percentage of those in need of services who actually appear at the program for an interview in a given time period. Service acceptance rates reveal the percentage of those in need of services and the percentage of those who come to the program and are offered services "who accept services in a given period." Directors on all the roads estimate that from 80 to 95 percent of the clients they interview eventually accept recommended services or referrals--an astounding rate for alcohol problems which are often marked by denial. These service acceptance rates indicate that program staff are adept at clinical motivation. Another way of putting this is that once referrals to the program are successfully made, chances that clients with drinking problems will accept help is dramatically increased.

6.6.4 Effects

The first effect examined is rehabilitation. All program directors emphasized that in the case of serious alcohol problems, a client's problem can not be cured. At best, his condition is arrested and he is in a state of remission. All of the directors also agree that from the company's point of view, rehabilitation minimally means restoration to adequate levels of job performance. All directors consider abstinence the ideal if not the goal through which restored job performance can be insured. Several directors consider continued abstinence as the indicator of successful rehabilitation. One director claims some of his problem-drinking employees have been returned to productive work by curtailing their drinking. Another director observed that some abstinent clients did not return to acceptable

work performance. Some directors define rehabilitation in terms of one's entire lifestyle and say that a worker is rehabilitated when he acts responsibly and productively in all areas of his life. Other directors emphasize the job-related results--"getting eight hours work for 8 hours pay" as one director put it--as the primary indication of rehabilitation.

Amid this seemingly wide divergence of views, there is strong consensus on one crucial item that makes it possible to define rehabilitation in a way that is acceptable to all and to make comparisons among rehabilitation rates. All directors agree that the company's primary interest, the major reasons why companies run programs to begin with, is to return problem drinkers to productive work. If a client is functioning and improving in all the aspects of living, or if a client stopped drinking for good but still does not improve his work to acceptable levels, company managers would not consider the workers' treatment a success or the resources expended on him a justifiable company expense. Program directors agree with that position. All of the other differences about defining rehabilitation pale before this fact. Programs should remain free to disagree on the points mentioned above. According to managers describing their expectations of program results, however, restoration to adequate job performance is the principal desired outcome of those who pay for program costs. Whatever differences programs have in defining rehabilitation, none considers a client to be rehabilitated unless his work has returned to acceptable levels.

Programs report phenomenal success among those to whom services are offered. Of the 1,554 clients served last year, 1,087 were rehabilitated. Company budgets totaled about $970,000 last year. Programs spent less than $900 to rehabilitate a problem drinking worker--less than would have been needed to process his dismissal. Table 6-16 presents program self-reported rehabilitation rates.

TABLE 6-16. ESTIMATED REHABILITATION RATES

Railroad	Percentage
A	81
B	70
C	74
D	70
E	65
F	95
G	80

The average reported success rate for programs in other industries is 70 percent or better. Railroad success rates of the five roads for which we have figures compare favorably with success rates of other programs. Directors report that they experience higher success rates with inpatient, mostly hospital care than they do with outpatient care. Unfortunately, as has been observed in the section on functions, these impressive figures are sometimes taken with some skepticism by others in the alcohol or general health care fields because they are derived from data provided by program operators whose raw files are unavailable because of confidentiality requirements.

6.6.5 Reduction in Company Drinking Problems

We do not know the average amount of money each problem drinker costs his company for all the company incurred costs described in Section 4. As we have seen, it is not possible to develop exact financial losses for items like absenteeism, damage, productivity, etc. related to drinking. We have seen, however, that job-related costs are substantial and ran conservatively at $108 million last year--an average of $3,000 per problem drinker.

In the data collected from program participants, we have evidence that participation in the program resulted in a reduction of job-related drinking problems at least among our limited random sample (n=234). Our response rate from this sample was almost 35 percent. Program participants reported the reductions in alcohol-related problems on and off the job. After participating in the program, they missed work less often because of drinking, came to work drunk or hungover less often and got in trouble with their bosses because of drinking less frequently. They also reported reductions in alcohol-related marital discord, auto accidents, and problems with police. Since the respondents reporting these results are only 35 percent of our sample, their views may not be representative of all the program clients in the sample.

6.6.6 Worker and Client Satisfaction

An average of 57 percent of workers across the roads know of a fellow worker who has gone to the company's employee assistance program. Percentages of workers who know program participants, range from 32 percent on one road to 80 percent on another. These workers were asked how satisfied clients told them they were with the program. Table 6-17 shows that most clients were satisfied with their programs--very few were dissatisfied, a very sizable minority were neutral.

Our participant sample was also asked to rate their programs. They were asked whether or not their drinking problems improved. About 85 percent of the respondents from all job classifications said that their problems did get better and that the program helped them. Then they were asked the degree to which the company's program contributed to this improvement. The vast majority think their program played a crucial part. Table 6-18 presents their responses.

TABLE 6-17. PERCENTAGE OF CLIENTS REPORTING SATISFACTION/ DISSATISFACTION WITH EMPLOYEE ASSISTANCE PROGRAM

Railroad	Satisfied	Neutral	Unsatisfied
A	63	33	4
B	52	42	6
C	77	22	1
D	60	36	4
E	39	45	3
F	49	48	3
G	61	31	1

TABLE 6-18. PERCENTAGE OF CLIENTS ATTRIBUTING IMPROVEMENT IN VARYING DEGREES TO EMPLOYEE ASSISTANCE PROGRAM

Railroad	All	Most	Little or Nothing
A	36	56	18
B	38	47	15
C	52	38	10
D *	100	0	0
E	33	43	24
F	28	57	14
G	29	60	11

* Based on only 2 responses.

Clients overwhelmingly gave program staff high ratings for their competence. Well over 90 percent of the participant sample on all roads felt that program staff really wanted to help them, showed them respect, and were trustworthy. Ninety percent also said that they would recommend the program to a co-worker with a similar problem.

Most clients feel their participation in the program did not worsen their status or position in the company and that it improved their home lives. Less than 10 percent of the participant sample indicated they thought program staff broke their confidentiality. As we have seen before, although labor and management representatives have ideas about improving the program, most, if not all, are favorably disposed to it or at least not opposed to it.

6.7 OVERALL SUCCESS OF PROGRAMS

Different railroad companies maintain their employee assistance programs for various reasons or combinations of reasons. Ultimately, they may want their program to cut costs (for example, reduction in costs caused by alcohol-related absenteeism, lost productivity, accidents, etc.) and/or they may want programs to preserve their workers well-being. Therefore, a wide range of criteria might be selected to evaluate employee assistance programs. Any fair comparison of programs must be done against commonly accepted evaluative criteria. But as we have seen in the beginning of this section, program objectives are often generalized and sometimes implicit.

The first comparison that follows is based on the assumption that a common objective of the seven study roads is to rehabilitate as many problem drinkers in their work force as they can. One important measure of a program's success is the degree to which it is instrumental in rehabilitating problem drinking employees. We call this measure a program's basic success rate--the percentage of all problem drinkers in the work force who have been rehabilitated in a given year. The basic success rate combines program outcomes expressed in two other measures of program effectiveness: (1) the penetration rate--the measure of how well the program is doing in reaching workers in need of services and (2) the rehabilitation rate--the measure of how well the program is doing with clients referred into the program. It is a measure of a program's case finding and assessment/referral or diagnostic/referral services. Reaching large numbers of problem drinkers is not enough if they are not successfully rehabilitated. Rehabilitating program clients is not enough if the clientele is only a small fraction of those in need. Together, however, reaching and rehabilitating large percentages of problem drinkers is one important measure of program effectiveness.

6.7.1 Comparison of Basic Success Rates on Seven Railroads

Table 6-19 presents the penetration rates, the rehabilitation rates and the basic success rates of the seven study railroads. There is a much wider range in the penetration rates than in the rehabilitation rates reported by programs. The highest penetration rate (Railroad D, at 13.8 percent) is more than seven times higher than the lowest penetration rate (Railroad F, at 1.9 percent).

By contrast, the highest rehabilitation rate (Railroad F, at 95 percent) is about one third higher than the lowest reported rehabilitation rate (Railroad E, at 65 percent). Railroad F, with the highest rehabilitation rate had the lowest overall success rate. Railroad E, with the lowest reported rehabilitation rate had the fourth best overall success rate. Railroad D

TABLE 6-19. PENETRATION, REHABILITATION AND BASIC SUCCESS RATES OF THE SEVEN PROGRAMS

Railroad	Penetration Rate	Rehabilitation Rate	Basic Success Rate	
A	3.5	81	2.8	(5)
B	5.4	70	3.9	(3)
C	9.9	74	7.3	(2)
D	13.8	70	9.7	(1)
E	4.9	65	3.2	(4)
F	1.9	95	1.8	(7)
G	2.6	80	2.1	(6)

had the best overall success rate last year; the program there successfully rehabilitated 9.7 percent of all the problem drinkers in the work force. Railroad C was second with a 7.3 percent success rate and was followed in order by Railroad B, E, A, G, and F.

6.7.2 Comparison of Cost-Effectiveness on Seven Railroads

In addition to comparing the service delivery capabilities of programs, one may compare their cost effectiveness. Table 6-20 presents the success rate of each program together with the amount expended by the program to rehabilitate each client.

Railroad A, which ranked fifth in overall success rates, is the most cost-efficient in the dollars it expends to rehabilitate a program client. Railroads F and G, which ranked lowest in overall success, again came in last in rehabilitative cost-effectiveness.

6.7.3 Other Measures of Program Effectiveness

Other measures of program effectiveness are savings which the company realizes as a result of returning problem drinkers to work as nonproblem drinking employees. These measures include reductions in lost time, productivity loss, damage to company property, and other work-related costs. Our initial plan was to compare the work experience of problem drinkers who have successfully completed treatment with those who are still in the work force. The former data was to have been obtained from the survey of program participants; the latter from the responses of individuals identified as problem drinkers in the general survey. Unfortunately, the low 35 percent response rate to our participant survey does not warrant this kind of analysis. Information from the general survey , however, does

TABLE 6-20. PERCENTAGE OF ALL PROBLEM DRINKERS REHABILITATED AND AVERAGE COST PER REHABILITATED CLIENT

Railroad	Percentage Rehabilitated	Average Cost Per Rehabilitated Client
A	2.8	$ 762.71 (2)
B	3.8	473.48 (1)
C	7.3	857.14 (3)
D	9.7	1,080.00 (4)
E	3.2	1,082.00 (5)
F	1.8	2,857.14 (7)
G	2.1	1,865.67 (6)

allow us to estimate reductions in time lost and in the costs of lost productivity brought about by employee assistance programs last year.

6.7.4 Comparison of Reduced Absenteeism Brought About by Seven Programs

Problem drinkers missed an average of 15.3 days last year for reasons other than vacation, while other workers missed an average of only 8.6 days in the same period. Problem drinkers were absent an average of 6.7 days more a year than nonproblem drinkers. Every rehabilitated problem drinker returned to the work force then, represents an annual reduction of 6.7 days that would have otherwise been missed. Table 6-21 presents the number of days of reduced absenteeism brought about by the return of a rehabilitated problem drinker for every day of staff work expended at each of the programs.

For every day worked by program staff on Railroad B last year, there was a reduction of 2.5 days in the absenteeism of problem drinking workers. Railroads C and E reduced this kind of alochol-related absenteeism by slightly more than a day for every program staff day worked. Railroads D, A, and G reduced such absenteeism a little less than a full day for every day of staff work. On Railroad F, program staff worked three days for every day of reduced absenteeism. Across the seven roads, there is slightly more than a full day's reduction in the excessive absenteeism of problem drinkers for every day worked by program staff members.

TABLE 6-21. DAYS OF REDUCED ABSENTEEISM BROUGHT ABOUT BY THE PROGRAM FOR EVERY PROGRAM STAFF DAY WORKED

Railroad	Days of Reduced Absenteeism for Staff Day Worked	
A	0.86	(4)
B	2.50	(1)
C	1.22	(2)
D	0.91	(6)
E	1.10	(3)
F	0.30	(7)
G	0.73	(5)

6.7.5 Comparison of Reductions in Lost Productivity Brought About by Seven Programs

In Section 4, we estimated that the reduced productivity of problem drinkers cost the railroads about $100 million last year--about $3,500 per problem drinker as that term is defined in this study. Every rehabilitated problem drinker returned to work then represents a $3,500 reduction in lost productivity. If this $100 million figure is not overly inflated (see page 75), each program reduced the costs of lost productivity by an amount that exceeded their annual budgets. Even if the cost of lost productivity is too high, the same figures will be used in calculating each program's effectiveness in this area so that comparative program performance will be accurate. Table 6-22 presents the dollar amount of reductions in alcohol-related lost productivity brought about by programs for every dollar spent by programs last year.

TABLE 6-22. DOLLARS IN REDUCED ALCOHOL-RELATED PRODUCTIVITY LOSSES FOR EVERY PROGRAM DOLLAR SPENT

Railroad	Dollars Saved for Every Program Dollar Spent	
A	$4.50	(3)
B	7.91	(1)
C	4.08	(5)
D	4.54	(4)
E	4.83	(2)
F	1.22	(7)
G	1.83	(6)

Railroad B had the best record in reducing alcohol-related productivity losses. It reduced these losses by close to $8 for every program dollar spent. Railroads E, D, A, and C, all did about half as well. Railroads F and G ranked sixth and seventh, respectively.

6.7.6 Comparative Summary of Program Performances

Above we have compared the effectiveness of the seven programs according to their basic success rate, their rehabilitative cost effectiveness and their performance in reducing alcohol-related absenteeism and lost productivity. These criteria were the only ones which our data permitted us to use. Were comparison possible using other criteria, program ranking could well have been different.

Table 6-23 presents a summary of comparative program performance based on a combination of the criteria used above. A program that scored first against any of the four criteria receives seven points (for example, Railroad D had the best basic success rate and will receive seven points). A program that scored second against any of the four criteria receives six points and so forth. Points scored by each of the programs on each of the four criteria will be summed to develop an overall effectiveness rating.

TABLE 6-23. SCORES OF INDIVIDUAL PROGRAMS ON FOUR SELECTED EVALUATIVE CRITERIA

Railroad	Success Rate	Cost Effectiveness	Absenteeism	Lost Productivity	Overall Effectiveness Rating
A	3	6	3	4	16
B	5	7	7	7	26
C	6	5	6	3	20
D	7	4	4	5	20
E	4	3	5	6	18
F	1	1	1	1	4
G	2	2	2	2	8

The order in which programs ranked against the combined criteria was: Railroad B (first), Railroads C and D (second), Railroad E (third), Railroad A (fourth), Railroad G (fifth), and Railroad F (sixth).

6.8 IDEAL FEATURES OF RAILROAD EMPLOYEE ASSISTANCE PROGRAM

There is no demonstrable causal link between program process variables (context or environment, inputs and services/function) and specific desirable program outcomes like the ones used in the previous sections. Our examination of process variables in the beginning of this section, however, revealed that there appear to be stronger and less effective ways of creating the environment that surrounds a program, of apportioning and allocating resources and of planning and delivering services. In planning their programs, railroad companies have options in selecting the features that will characterize each of these process variables. In what follows below, we recommend options for each variable based on the examination of the contextual, input, and service/function variables reported in the beginning of Section 6.

6.8.1 Ideal Environment for Railroad Employee Assistance Program

Figure 6-3 presents the desirable and undesirable characteristics of key environmental variables which need to be taken into account in setting up and running a railroad employee assistance program.

Environmental Variables	Desirable Characteristics	Undesirable Characteristics
1. Program Initiation	Undertaken with genuine commitment on the basis of perceived benefits to the company and to employees. Organized in accordance with recommended features described below.	Launched by half-convinced managers for other reasons (for example, being au courant.) Organized with little reference to the learning experience of programs both within and outside the railroad industry.
2. Office Locations	Off of company property. Within reasonable distances to concentrations of workers.	On company property, especially in a highly visible or uninviting setting. Remote to many workers.
3. Organizational Position	Wherever program receives assured latitude, visibility, credibility, a strong position of advocacy and steady adequate funding.	Wherever program's importance and support are not ensured.
4. Role of Labor	Involved from the beginning in planning and advising. Provided an ongoing role as members of an advisory council. Given a specific role through a peer intervention program.	Program considered strictly a management affair.
5. Management Role	Involved throughout in providing advice through a formal mechanism.	Program is strictly affair of the department in which it is located.
6. Workforce Attitudes Toward Workers With Alcohol Problems	Basically therapeutic attitudes of workers are embodied in company policy.	Company policy out of tune with workers--punitive.
7. Railroad Departments Related to Program	Plan and coordinate activities re problem drinking and on-the-job drinking with the program.	Little or no collaboration and information sharing.

FIGURE 6-3 . DESIRABLE/UNDESIRABLE ENVIRONMENTAL PROGRAM FEATURES

6.8.2 Ideal Resource Mix for Railroad Employee Assistance Programs

Figure 6-4 summarizes the desirable and undesirable characteristics of resource or input variables for employee assistance programs on railroads.

6.8.3 Ideal Service/Function Variables of Railroad Employee Assistance Programs

Figure 6-5 presents the desirable and undesirable characteristics of key functional variables which ought to be considered in conceptualizing a company's programmatic approach to employee drinking.

Input Variables	Desirable Features	Undesirable Features
1. Company Policy	Understanding of alcoholism as a health problem;	Moralistic or punitive treatment of problem drinkers.
	Intervention on basis of job performance and rule violations;	Cover-up. Toleration. Punishment only.
	Threat of dismissal used as leverage for entering program;	Dismissal used simply to get rid of employees.
	Adequate referral mechanisms including supervisors, local chairmen and medical consultants.	Unactivated, untrained, unmotivated referral agents.
	Competent personnel who assess-refer.	Unqualified counselors. Qualified, motivational counselors who diagnose or treat. Too few counselors
	Assurance of job retention for those who cooperate successfully with program when counselors say they are ready to return.	Disallowing rehabilitated workers from retaining their job. Keeping workers off the job when they are ready to return. Failure to give primacy to counselor certification of readiness.
	Use of qualitative treatment agencies.	Over-reliance on in-patient care or treatment modalities that do not fit in with client's situation or life-style.
	Outpatient/inpatient insurance coverage.	No insurance. Inadequate insurance (e.g., $3 K lifetime benefit). In-patient coverage only.
	Integral role for Labor.	No role. Token role.
	Systematic, on-going credible evaluation.	No evaluation. Sporadic evaluation. Evaluation conducted only by program.
	Confidentiality	
	Streamlined record-keeping to serve evaluation, confidentialy and insurance needs.	Make-shift, personalized, understandardized systems.
	Adequate program promotion mechanisms.	Haphazard conduct of program promotion function.

FIGURE 6- 4. DESIRABLE/UNDESIRABLE FEATURES OF PROGRAM RESOURCES

Input Variables	Desirable Features	Undesirable Features
1. Company Policy (cont)	Strategies aimed at reducing problems.	Exclusive emphasis on reaching workers after problems develop.
2. Program Focus	None of three models (alcohol only, chemical dependency, broadbrush) proven better with alcohol problems. Broad-brush equipped to deal with variety of problems affecting work and with personal problems affecting alcoholics.	Counseling of alcoholics with other drug and personal problems by unqualified staff. Over-reliance on self-referral and downplaying of confrontation in alcohol-related cases. Lenient handling of wayward alcoholics in program.
3. Service Delivery Pattern	Assessment referral (diagnostic referral with qualified staff and where cost effective)	Delivery of protracted treatment services by program staff.
4. Rule Enforcement and the Program	Integrally related so that threat of dismissal is used to pressure client to treatment and rehabilitated worker can return to work after counselor certification.	Unrelated. Program merely "recommends" client return to work.
5. Confidentiality	Active and visible participation of labor in the program. Office location off company property. Circumspect staff.	Widespread perception that program is exclusively a management operation. Off-property office location. Careless staff.
6. Target Population	Expand beyond problem-drinkers to include non-problem drinkers who break drinking rules for the first time.	Discriminate against non-problem drinkers.
7. Criteria for Accepting Referring Clients	Specific criteria for accepting clients and for making different kinds of referrals.	Indiscriminate assessments and referrals.
8. Program Director	Directly supervises program staff.	Shares managerial responsibility with other people.
9. Program Staff	Demonstrably competent alcoholism counselors.	Counselors considered competent solely on the basis of previous personal education or experience.

FIGYRE 6-4 . DESIRABLE/UNDERSIRABLE FEATURES OF PROGRAM RESOURCES (continued)

Input Variables	Desirable Features	Undesirable Features
10. Program Budgets	Budget set in terms of desired penetration rate (A 10 percent penetration rate requires one counselor for every 50 new clients anticipated).	Budget totals coincide with arbitrarily set "available funds."
11. Program Objectives	Measurable, time-framed, specific and explicit. Substantive about basic success rate and selected company goals (for example, reductions in grievance costs for alcohol-related cases).	No objectives. No articulated objectives. No measurable objectives. Measurable objectives measuring poor indicators of program effectiveness.
12. Health Insurance	NIAAA model package (DHEW, 1978).	Low lifetime benefit. Restrictions to in-patient or hospital care.

FIGURE 6-4. DESIRABLE/UNDESIRABLE FEATURES OF PROGRAM RESOURCES (continued)

Functional Variables	Desirable Features	Undesirable Features
1. Program Promotion	Concentration on high pay-off channels, that is, personally addressed communications. Other channels budgeted in accordance with their demonstrated effectiveness.	Little or no program promotion Program promotion through relatively ineffective channels.
2. Case-Finding Motivation	Concentration on company based referral capacity; supervisors, co-workers, local chairmen and medical consultants.	Over-reliance on self-referrals. Failure to encourage Rule 6 referrals.
3. Evaluation of Client Problems	Assessment only (with rare exception).	Diagnoses by staff who are unqualified or whose qualifications are not recognized.
4. Follow-up	Done by volunteers.	Not done at all. Not done adequately. Done on old stable cases. Done on those who need follow-up by staff.
5. Primary Prevention	Initiation of prevention strategies aimed at reducing problem drinking and on-the-job drinking through designation of a line item on program budgets for prevention. Budget should be increased by one quarter for prevention efforts alone.	No prevention starts. Unsystematic prevention starts. Prevention starts without additional designated resources.

FIGURE 6-5 . DESIRABLE/UNDESIRABLE FUNCTIONAL FEATURES OF PROGRAMS

6.8.4 Most Important Elements for Planning Railroad Programs

Although all of the previously described "desirable features" are part of an idealized employee assistance program, not all of them are equally necessary for a reasonably effective program. Some features are. They include the 13 items listed above under company policy. They are essential ingredients for occupational programming in the railroad industry. These 13 items constitute the "basic" of a good program. Programs in the railroad industry could be improved by a careful application of these 13 items to current program functioning.

a. Understanding of alcoholism as a health problem.

The implications of this understanding are not now adequately applied to the disposition of problem drinking rule violators or to the way in which medical consultants work with the employee assistance programs.

b. Intervention on the basis of job performance and rule violations.

The evidence is clear that the work performance of problem drinkers is often less than adequate, that they account for higher percentages of rule violations than their numbers warrant, that they are seen doing less than their job requires and breaking rules and that often nothing is done.

c. Threat of dismissal used as leverage for entering a program.

In virtually every industry, this program feature is the difference between having a program and not having one. In the railroad industry, this practice is not in force.

d. Adequate referral mechanisms.

Supervisory capacity needs strengthening. The referral roles of local chairmen, co-workers, and consultant physicians must be promulgated and taught.

e. Competent personnel to assess and refer.

Recruitment and training policies need to be devised and implemented.

f. Assurance of job retention for successfully rehabilitated problem drinkers.

There is little sense in having an employee assistance program if those who avail themselves of its services are treated on a par with those who do not. A guarantee of job retention for cooperative employees is an essential element in the policy of an employee assistance program.

g. Use of qualitative treatment agencies.

Programs generally refer clients to five treatment agencies. Programs need to promote coverage for and refer clients to outpatient facilities at least when other alternatives are unduly difficult for certain clients to use.

h. Insurance coverage.

Current alcohol-related coverage is often not adequate because of the low life-time benefit and exclusion of coverage for out-patient care.

i. Integral role for labor.

Active, ongoing, and specific labor collaboration is necessary to promote trust and use of the program.

j. Systematic ongoing evaluation.

To survive and thrive, programs need not only to do a good job, but also demonstrate convincingly that they are being effective. At the present time, even the most effective programs are not adequately demonstrating their success.

k. Confidentiality.

Programs need to continue their generally good record in confidentiality.

l. Streamlined record-keeping to serve evaluation, confidentiality, and insurance needs.

Programs are now at a stage when a comparison and standardization of record-keeping systems is in order.

m. Adequate program promotion efforts.

A receptive work force is essential to increasing referral rates. Program promotion must be thought of as more than an ancillary activity.

n. Reducing the incidence of drinking problems.

Most program plans are geared toward supplying services to people with drinking problems. No program dollars are now earmarked for preventive strategies to reduce the need for services.

6.8.5 Procedure for Continuous Program Evaluation

Three steps are required to develop data about program effectiveness on an ongoing basis: (1) the establishment of an evaluation system that specifies objectives, evaluative criteria, measures, and standards, as well as data collection procedures, instruments, and guidelines; (2) the collection and documentation of the information required by the evaluation design; and, (3) the corroboration, analyses, and interpretation of the collected data.

The establishment of an evaluation system will require resources of specialized expertise and funds not likely to be found in the studied programs. We suggest that the FRA offer to provide the resources necessary to help programs set up a practical and discerning evaluation system. Program staff can be assisted in developing and using the data collection tools called for by the evaluation design. The original designers can provide technical assistance on an as needed basis and perform the analyses and interpretation of data at the end of designated evaluation periods.

6.9 CONCLUSION: PROCEDURES FOR ENCOURAGING AND IMPROVING PROGRAMS IN RAILROAD INDUSTRY

The railroad industry, rail labor, and the Federal Railroad Administration have a joint interest in facilitating the initiation and improvement of

employee assistance programs. These three parties are now completing the first of three phases in a cycle of activities aimed at promoting effective voluntary company approaches to solving the problems caused by employee drinking. Phase I of this collaborative effort was a research phase whose purpose was to define the problem and suggest solutions. This study represents the completion of Phase I. Phase II involves the experimental implementation of the findings, conclusions, and recommendations of the research phase. Phase III will consist of evaluating the results of the implementation phase against the baseline data of the research phase and in reformulating revised approaches for the future.

We are now entering Phase II, the implementation phase. The goal of this phase will be to assist the study railroads and other railroads with programs to put the study results into practice and to encourage and assist railroads without programs to start programs. We suggest that the FRA first sponsor a technical assistance effort to the railroad programs which participated in this study. As this effort gets underway, the FRA can approach railroads with programs and other railroads interested in starting programs to see if they are interested in receiving technical assistance based on the REAP study.

In addition to improving the delivery of services by the dissemination of this study's results through a highly individualized and confidential technical assistance, the FRA might consider other activities aimed at improving programs. Among them are: (1) the development of training packages to train supervisors, to set up a labor peer intervention program, and to train local chairmen; (2) the delivery of training to program directors on program and staff evaluation and on volunteer utilization and the delivery of training to program staff on assessment referral and basic communication skills.

Planning for Phase III should begin simultaneously with the implementation of the study results. The purpose of this phase will be to determine the degree to which voluntary company efforts are controlling employee drinking problems and to identify future directions for handling these problems. The FRA has supported and promoted voluntary company efforts to deal with the problems caused by employee drinking. The end result of Phase III will be the determination of whether these voluntary efforts on the part of companies are an adequate response to the problem or whether alternative actions are required.

In the last analysis, changes initiated and implemented by the industry itself will probably make the most immediate and long-lasting impact on railroad employee assistance programming. Individual directors and their representative organizations, therefore, will be vital in this process. A first step, therefore, might well be the joint analysis by directors and a selection and implementation of selected action.

APPENDIX A--SAMPLING ERROR

Whenever samples are drawn from a population, the prevalence statistics which are calculated represent the observed frequency of phenomena in the sample. Thus, if we find that 200 out of 1,000 respondents report a particular behavior, we calculate that 20 percent of the sample display that behavior. These are the percentages reported in the tables of this report.

Often, however, a reader is interested in what percentage of the population from which the sample is drawn displays the behaviors. Our best guess is simply that the percentage is the same as that observed in the sample (provided that the sample is proportionately drawn and/or appropriately weighted as was Project REAP's). Still, because the reader is making guesses about percentages in a group based only upon information gathered from a subgroup of its members, the guess will probably not be exact. This phenomenon is spoken of as "sampling error."

Fortunately, although this error will always exist whenever a sample survey is conducted, mathematical methods have been developed which allow one to determine the extent of the error. Such sampling error is usually expressed in terms of "confidence intervals." These intervals provide a range, centered on the sample value, within which the true population value is reasonably certain to lie.

Table A-1 provides a handy reference for determing the confidence intervals for the statistics reported in this paper. An appreciation of Project REAP's major findings is not dependent upon the understanding or use of this table, but the interested reader may find it useful.

There are six columns in the table. The first of these is headed "Reported Percentage." The seven entries in this column are the percentages which may be reported in tables of this paper. If one wants to develop the confidence interval for a particular table entry, first find the closest percentage to that entry in Table A-1.

The remaining five columns of Table A-1 refer to different groups which the percentages may refer to. Group sizes are the average for each type of group. Average group sizes are used to protect anonymity of the railroads. Confidence intervals for proportions are only approximations (Hayes, 1973), and only a very small percentage of the confidence intervals calculated by this table will vary even as much as 1 percent from the values which would be obtained were the reader to calculate each confidence interval based upon actual sample sizes.

The entries in the body of the table are the deviations on either side of the sample percentage which define the population confidence interval.*

For example, suppose the prevalence of a particular behavior on Railroad A is 22 percent, and we want to know prevalence of that behavior in the entire work force of Railroad A. Referring to Table A-1, we see that in Row 4 of the table, 20 is the closest percentage to our observed

percentage of 22. Looking in the column headed "Railroad," where it intersects the row "20 or 80", we find the entry "3". This means that the populations prevalence is 22 percent ±3 percent, or in the range 19-25 percent.

Statistical significance of any difference can be determined by calculating the confidence intervals for any two table entries. If the confidence intervals do not overlap, the difference is "significant at the .05 level."

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*Table values were calculated using the following formula from Cochran (1977).

$$C.I. = p \pm \left[t \sqrt{1 - f} \sqrt{pq/(n-1)} + \frac{1}{2n} \right], \text{ where}$$

C.I. = confidence interval

p = proportion

t = standard normal deviate

f = sampling fraction

q = 1 - p

n = sample size

TABLE A-1. SAMPLING ERROR IN PERCENTAGE BY GROUP REPORTED

Reported Percentage	Overall (N =5704)	Railroad (N = 815)	Non-Ops (N = 419)	Ops (N = 219)	Exempt (N = 144)
50	1	3	5	7	8
40 or 60	1	3	5	6	7
30 or 70	1	3	4	6	7
20 or 80	1	3	4	5	7
10 or 90	1	2	3	4	5
5 or 95	1	1	2	3	4
1 or 99	<1	1	1	1	2

Note: The chances are 95 in 100 that the value being estimated lies within a range equal to the reported percentage plus or minus the number of percentage points shown above.

APPENDIX B--REPORT OF NEW TECHNOLOGY

No subject inventions were achieved during the performance of work under this contract.

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