M. Smith

August 1983
Technical Summary

DOT HS-806-498

U.S. Department
of Transportation

**National Highway
Traffic Safety
Administration**

Motivation of Employers to Encourage Their Employees To Use Safety Belts (Phase 2)

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Contract No. DTNH22-80-C-07439
Contract Amount: 79,183

"Prepared for the Department of Transportation National Highway Traffic Safety Administration, under Contract No. DOTH-22-80-C-07439. The opinions, findings, and conclusions expressed in this publication are those of the author and not necessarily those of the National Highway Traffic Safety Administration."

NOTICE

Technical Report Documentation Page

1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.
DOT HS-806 498		

4. Title and Subtitle	5. Report Date
Motivation of Employers to Encourage their Employees to Use Safety Belts, Phase 2	August, 1983
	6. Performing Organization Code
	8. Performing Organization Report No.

7. Author(s)	
Ware, Anita; Cook, Royer; and Orme, Ted	

9. Performing Organization Name and Address	10. Work Unit No. (TRAIS)
Pabon, Sims, Smith and Associates, Inc. 734 15th Street, N.W., Suite 401 Washington, D. C. 20005	11. Contract or Grant No. DTNH 22-80-C-07439

12. Sponsoring Agency Name and Address	13. Type of Report and Period Covered
U.S.Department of Transportation National Highway Traffic Safety Administration Washington, D. C. 20590	Final Report 5/82-5/83
	14. Sponsoring Agency Code

15. Supplementary Notes

16. Abstract

An employer manual is developed which offers guidelines for the elements of a successful safety belt program. The guidelines are based upon the model developed as a result of site visits to successful programs and synthesis of expert opinion.

A needs analysis is conducted for the health promotion/wellness worksite programs. The programs are examined as a potential vehicle for safety belt programs for employees.

This report represents Phase 2 of a two-part study. The Phase 1 final report document, DOT HS-806-258, is available through the National Technical Information Service in Springfield, Virginia, 22161. Phase 1 embodies the employer manual, "The Profit in Safety Belts: A View for Employers"; the Phase 2 final report contains the companion manual, "Employer Guide to an Effective Safety Belt Program".

17. Key Words	18. Distribution Statement
safety belt program employee safety health promotion program wellness program risk management	This document is available to the U.S. public through the National Technical Information Service, Springfield, Virginia 22161.

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

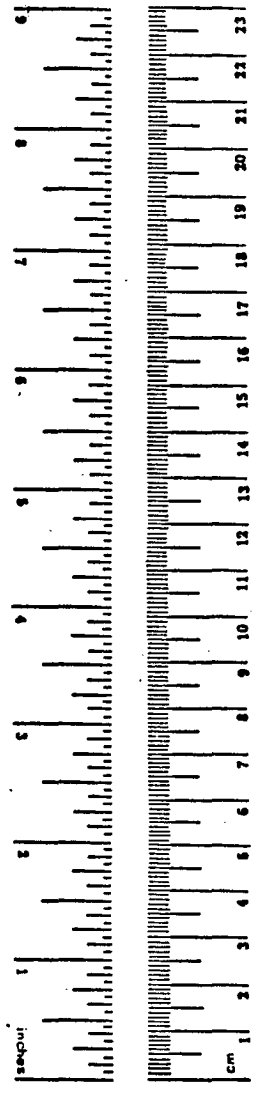
Form DOT F 1700.7 (8-72) Reproduction of form and completed page is authorized

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

*1 in = 2.54 (exactly). For other exact conversions and more detailed tables, see NBS Misc. Publ. 286, Units of Weights and Measures, Price $2.25, SD Catalog No. C13.10:286.



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)		
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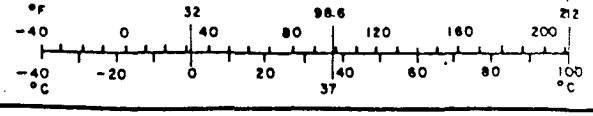

ACKNOWLEDGEMENTS

Pabon, Sims, Smith and Associates, Inc. wishes to thank the corporations whose successful employee safety belt programs made this phase of the project possible. Through their hospitality and spirit of sharing, PSS was able to gain insights on how the successful programs work. The participating companies are as follow:

- Berg Electronics
  Camp Hill & Fishing Creek, Pennsylvania
- General Motors
  Technical Center
  Warren, Michigan
- Illinois Bell
  Chicago, Illinois
- Laughlin Air Force Base
  Del Rio, Texas
- Teletype Corporation
  Little Rock, Arkansas

The site visits which PSS conducted to each of these corporations were facilitated by individuals without whose aid the data could not have been collected. These people made the programs come alive as they took time from busy schedules to set up group discussions, include PSS in incentive audits, delve into accident records and otherwise acquaint us with program activities. Thank you to Ken Spoonhour and Grant Waltz of Berg Electronics; Terry Horne and Tom Terry of General Motors; Arnie Schrank of Illinois Bell; Herman Dean of Laughlin Air Force Base; and Sandy Richardson of Arkansas Highway Safety (Teletype) and Frank Cingolani of Teletype. We appreciate not only your aid to our effort but all that you are doing to promote belt use.

We wish to extend sincere thanks to the experts who devoted their valuable time to responding to issues and ideas through the Delphi process to identify components of successful programs:

Dr. B.J. Campbell
Highway Safety Research Center
University of North Carolina

Herman Dean
Safety Department
Laughlin Air Force Base

Dr. Scott Geller
Department of Psychology
Virginia Polytechnic Institute
and State University

Dr. Christy Hughes/Barbara Richardson
Safety and Health Joint Programs
and Driver Improvement Prog rams
National Safety Council

Mr. Martin Lee
Lee-Gosselin Associates Ltd.

Tom Reel
Michigan Association for Traffic
Safety

Stan Williams
Safety and Fire Protection Division
E.I. du Pont de Nemours
Wilmington, Delaware

Many individuals in the health promotion/wellness area extended themselves to provide PSS with insights about worksite health promotion programs and the needs and perceptions of those programs. PSS is particularly grateful to the following people: Ruth Behrens, Dr. Edward Christopherson, Dr. Jonathan Fielding, Dr. Larry Green, Dr. Murray Naditch, Rebecca Parkinson, Clarence Pearson, Dr. Carol Vermilyea, Dr. Donald Vickery, Dr. Beverly Ware, Mary Longe, and Dr. Curtis Wilbur.

Not in any way least, PSS wishes to express thanks to Dr. Bruce Bigelow and Dr. David Sleet of NHTSA's Office of Driver and Pedestrian Safety for their expert and conscientious monitoring of this effort. Both of these individuals are an inspiration in their level of commitment to the safety belt and health promotion areas in the workplace.

EXECUTIVE SUMMARY

As part of the National Highway Traffic Safety Administration's (NHTSA's) focus on the workplace as a prime setting for transmittal of the safety belt message, the "Motivation of Employers to Encourage their Employees to Use Safety Belts" project was undertaken by Pabon, Sims, Smith and Associates (PSS). The project comprised a two-phase effort. While this summary addresses the second phase only, an understanding of the progression of the total effort is appropriate. The phases were as follows:

Phase 1

- A study of belted and non-belted parallel crashes drawn from industry and their economic impact on employer costs;
- A manual for employers aimed at raising their consciousness of motor vehicle crash-associated costs (and non-belted costs in particular), "The Profit in Safety Belts: A View for Employers"; and
- Notation of preliminary elements of apparently successful programs observed during site visits to participant corporations.

Phase 2

- Identification of components contributing to successful programs as exemplified by the experience of existing successful programs and experts in the area;
- Development of a model employee safety belt program (on and off-the-job) based upon the components and promising approaches identified as a result of site visits and Delphi activities.
- A manual for employers describing the components and promising approaches and providing guidelines for a successful program based upon the model; and
- A needs analysis of the health promotion/wellness area of industry as an important and viable setting for a safety belt program component.

As part of Phase 2, PSS conducted site visits at the following corporations which were selected as representing effective efforts to motivate employees to use occupant restraints on and/or off the job:

Berg Electronics
Camp Hill & Fishing Creek, Pennsylvania

General Motors
Technical Center
Warren, Michigan

Illinois Bell
Chicago, Illinois

Laughlin Air Force Base
Del Rio, Texas

Teletype Corporation
Little Rock, Arkansas

PSS conducted indepth interviews with program administrators/recipients, reviewed program related records, and observed program processes on-site.

Interviews and small group discussions were conducted with experts and administrators in the health promotion/wellness field and a site visit was conducted to Johnson and Johnson's LIVE FOR LIFE program at corporate headquarters in New Brunswick, New Jersey, as part of the needs assessment task.

Safety Belt Programs: Findings/Conclusions

Findings. The major findings for the safety belt program analysis portion of Phase 2 included the following:

- The following major components represent the central focus of a potentially successful program to encourage employee safety belt use:
  - A strong and active commitment on the part of management to the safety belt program.
  - A clearly defined and well enforced policy of mandatory safety belt use on-the-job.
  - Positive incentives for employee safety belt use.
- The following components represent the support components which contribute to the potential success of a safety belt program aimed at increasing use of safety belts among employees:
  - Systematic recordkeeping of motor vehicle accidents that includes the use or non-use of safety belts.
  - A comprehensive safety belt education program.
  - Ongoing program promotion within the company.
  - An outreach effort to spread the safety belt effort beyond the workplace -- especially to the family.
  - An auditing procedure to evaluate the program's effectiveness.
- On-the-job programs work well when a mandated policy is augmented by positive incentives for use. A program which is totally enforcement oriented stands at risk of attaching a negative association to belt use, which may in turn result in lowering usage rates whenever employees perceive that they can break the rule with impunity or when they are off-the-job.
- Off-the-job programs work well when they are based upon positive incentives to use and are complemented by a mandated policy for on-the-job use where appropriate.
- A comprehensive, well-balanced program is most effective. A company should, without straining its resources, develop a program which includes all of the recommended components at a fairly strong level as appropriate.

Conclusions. Major conclusions for the safety belt program analysis included the following recommendations:

- A field-based research and demonstration project should be mounted which would utilize the model developed as part of this project as its vehicle.
- The research component of the recommended model should be aimed at answering key questions in the safety belt program area.
- A data collection and access system should be specifically designed to allow for motor vehicle crash-associated costs, safety belt use, and other pertinent variables to be recorded, accessed and analyzed.
- Technical support in the form of a needs assessment, design and implementation team should be available to firms expressing strong interest in establishing a safety belt program.

Health Promotion Programs: Findings/Conclusions

Findings. Major findings for the health promotion/wellness program needs assessment task included the following points:

- Safety belt use has not been the focus of health promotion/wellness programs as a program component even though the evidence of its impact in reducing premature deaths and injuries is unequivocal and widespread.
- Safety belt use is considered to be a core item in most Health Risk Appraisal instruments. It is one of the risk factors utilized in forming the prospective composite of the appraised age of the employee/respondent. If minimizing risk is the program objective, and movement toward the appraised age corresponds with "health" or more "healthy" behaviors, safety belt use can be considered a health issue for program purposes; yet, it is not.
- Where safety belt use has not been included as part of health promotion/wellness programs, planners have not usually envisioned that it could form a viable component relevant to the comprehensive effort. They have taken a limited view of the possibility and potential results of such a component, mainly due to lack of information on what is already being done in industry and how it is being accomplished.
- Practitioners and experts see the need for more information on cost-effectiveness/cost-benefit of safety belt programs. Further, they would like more information about the risk area of non-belted motor vehicle accidents and how to relate that information to a particular company's population of employees.
- Information on effective programs and examples of employee safety belt programs in industry were viewed as particularly valuable by practitioners and experts. They expressed a need for materials such as those developed in Phases 1 and 2 of this project. Such material should be specifically designed for the health promotion/wellness area.
- One reason that information is not circulated regarding existing successful safety belt programs may be the separation, in both program administration and focus, that exists between the health and safety areas in many companies.

- Companies have very different and individual safety/health area relationships. They run the gamut from a possessive, rather adversarial relationship to a high level of cooperation and blending of purpose and activities. Each company must be viewed individually as to the inter-relationships of factors to be considered in designing a safety belt program component for the health promotion/wellness area.

Conclusions. Major conclusions for the health promotion/wellness area study included the following recommendations:

- A model program should be implemented which will put safety belt use into the framework of other health promotion/wellness program components. The program should be created in such a way that employees will be availed of an opportunity to receive support in changing their safety belt non-use behavior. The program must be appealing, voluntary and should include the following considerations:

  - Selling the intellect on the value of safety belt use;
  - Bringing the employee to a point of decision regarding belt use; and
  - Supporting the employee's positive decision in a way that further sells the program and attracts participants.

- Safety belt program implementation guidelines should be developed that will take into consideration the inter-relations of safety and health promotion and other areas of the company.

- The gatekeepers -- those individuals and experts who talk effectively to industry, to hospitals, to schools -- should be provided with information regarding the need for safety belt use as a health behavior/lifestyle component in health promotion/wellness efforts.

- Materials should be developed which reflect the needs, philosophies, and concerns of health promotion/wellness people. These materials would take into account approaches which fit into the wellness setting and would include information on the following topics:

  - Cost-effectiveness/cost benefit of safety belt use
  - Program effectiveness goals and evaluation
  - Examples of successful programs to motivate safety belt use
  - Model program/program guidelines for the health promotion program setting

The health promotion/wellness area emerges from the needs assessment as a valid program area for a safety belt program component. Motor vehicle accidents kill more persons under 44 years of age than any other cause. Failure to wear safety belts must be placed alongside cancer and heart disease as a major contributor to premature death. Interventions which seek to increase safety belt use should be conducted as a regular part of health promotion programs in industry.

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INTRODUCTION

Background

This report represents Phase 2 of a two-part study, "Motivation of Employers to Encourage their Employees to Use Safety Belts". The Phase 1 final report document, DOT HS-806-258, is available through the National Technical Information Service in Springfield, Virginia, 22161.

The National Highway Traffic Safety Administration (NHTSA) has long recognized the importance of the use of active restraint systems (safety belts) in reducing injury and death to occupants of motor vehicles involved in crashes.

Despite the efforts of the National Highway Traffic Safety Administration, the National Safety Council, and others, only an estimated 13.8 percent of drivers in the U.S. regularly use safety belts (NHTSA, 1983). The result is a cost to society of as high as $57-billion annually (NHTSA-reported societal costs, 1980). One large area of societal cost is born by the private sector -- the employer.

Increased safety belt usage has been the goal of a large number of past and ongoing domestic and foreign programs. The efforts include promotional packages (media programs and printed materials), and educational programs; efforts to obtain legislation mandating safety belt and child safety seat use; speakers' bureaus, networking activity with civic groups and professional organizations and others. NHTSA has recently focused its activities on defining and evaluating programs that communicate to the public the importance of safety belt use.

A program setting which is of current interest to NHTSA is the work place -- a setting where it appears that the promotion of safety belt use might be effected through the employer-employee relationship. Relative to the current NHTSA safety belt focus, Pabon, Sims, Smith and Associates (PSS) was contracted to investigate, document, and chronicle safety belt vs. non-safety belt crashes involving employees from a wide range of employer organizations. During Phase 1 of the project PSS developed a manual to be used by employers in assessing the potential economic benefits of an employee safety belt use program/policy. The manual, "The Profit in Safety Belts: A View for Employers", urges employers to consider implementing an employee safety belt use program/policy and offers general information on program development/implementation. Several examples are cited of existing employer programs and policies which appear to have succeeded in increasing safety belt use.

Problem Statement

In the course of Phase 1 of the "Motivation of Employers to Encourage their Employees to Use Safety Belts" project, PSS visited six employers whose records suggested the operation of an "effective" safety belt program/policy. In a cursory analysis of detailed program information from the companies, a list of general elements which were considered potential contributors to program success were extracted.

Following completion of Phase 1 in which the manual was developed to raise employer awareness of potential cost savings, it was seen as highly desirable for the administration to be able to advise employers on the types of programs which offer the most promise of success. Further, it was seen as highly desirable to provide employers with guidelines for setting up a program based upon the analysis of

components contributing to the success of existing programs. Employers needed a workable plan upon which to base their own safety belt programs for employees.

Scope of Work

The objective of Phase 2 of the "Motivation of Employers to Encourage their Employees to Use Safety Belts" effort was to develop a set of guidelines for an employee safety belt program based upon variables of "effective" programs in current operation. Variables were subjected to a Delphi process; identified factors were rated as contributors to success based upon site visits, employee interviews and expert opinion. Experts with a wide range of safety belt program experience participated in development of guidelines through a reiterative feedback process aimed at identifying and prioritizing key issues/components.

The product for Phase 2, "Employer Guide to an effective Safety Belt Program" (Appendix A), comprises guidelines for a successful employee safety belt program based upon the analysis of existing successful programs. This guide is intended to accompany the employer safety belt manual, "The Profit in Safety Belts: A View for Employers" developed in Phase 1 of this effort.

In order to fulfill an evaluation of materials required by the contract, PSS at the request of the Contract Technical Monitor, channeled the time and resources for this task into a needs assessment of the health promotion/wellness program area in industry. These types of programs were evaluated as potential vehicles for safety belt program components for employees.

The Phase 2 effort was conducted in three stages:

- Stage I: Model Safety Belt Program Research
- Stage II: Model/Manual Development
- Stage III: Needs Assessment/Evaluation -- Health Promotion Programs

Stage I comprised the documentation and analysis of program variables, component identification, Delphi process, and analysis of resulting data. Stage II included translation of findings into a model and employer manual to utilize in designing an employee safety belt program. Stage III involved literature review of the health promotion/wellness program area, interviews and small group discussions with experts, practitioners and administrators within the wellness area, and analysis of needs and applicability regarding safety belt use components within the health promotion/wellness program setting.

In order to accomplish Phase 2 objectives, a series of tasks were undertaken as follows:

Task 1: Planning and organization. Identify and detail processes, procedures, and schedule.

Task 2: Identify successful programs and participating employers. PSS set criteria for "success" and identified participant programs for the study.

Task 3: Obtain, review and document existing successful employer safety belt policies and programs from sample group of employers. PSS conducted site visits and obtained overall impressions of the program and its variables through written information; interviews with program administrators, employees, and supervisors; and on-site experience of program operations.

Task 4: Analyze policies and programs and extract variables. A master list of variables was developed and a preliminary analysis done to extract potential components/factors.

Task 5: Analyze program variables and develop list of factors. From site visit information documentation, components were synthesized. Each component was rated and content-analyzed for each site and a synthesis of across-program information/observation was completed for each component.

Task 6: Conduct experts' rating of factors as they contribute to program sucess. Experts in the safety belt program area rated program components and identified/responded to key issues.

Task 7: Develop master list of promising approaches under each success component. Promising approaches were selected under each program component which exemplified some of the best ideas seen in practice. Illustrative materials are featured in Appendix B of this report.

Task 8: Develop model program guidelines utilizing components of success. Model program guidelines were developed based upon the components which were identified, analyzed and rated in the first seven tasks.

Task 9: Develop the manual, incorporating the employee safety belt program/ policy guidelines, information on program implementation, and examples of promising approaches in existing programs.

Task 10: Conduct needs analysis/evaluation of the health promotion/wellness program area in industry to determine whether it represents a viable setting for employee safety belt components.

Task 11: Conduct contract completion activities.

The manual developed as part of Phase 2, "Employer Guide to an Effective Safety Belt Program", is included as Appendix A of this report.

II. APPROACH

This section represents a general approach utilized by PSS for the research and analysis of Tasks 2-11 of Phase 2 of the "Motivation of Employers to Encourage their Employees to Use Safety Belts" project.

Those Task 1 activities involving orientation and scheduling processes are not included in this section but are outlined in the Introduction.

Task 2: Identify Successful Programs and Participating Employers.

- Activity 1: Identify, contact and solicit cooperation of employers whose programs appear to be successful. PSS contacted a pool of employers who were considered by various sources to have existing programs in place that were effectively motivating employees to use safety belts.

- Activity 2: Determine employer target audience for model program/policy. The criteria used to define the target audience were as follows:

1. The program exists in one of the following industrial classification settings (delimited employer categories identified in Phase 1):

   a. Mining
   b. Construction
   c. Manufacturing
   d. Transportation, communications, electric, gas and sanitary services
   e. Wholesale trade
   f. Finance, insurance, real estate
   g. Services
   h. Public Administration

2. Transportation is a vital part of the employer's operation (on-job programs). The role of transportation must be representative of its role in similar industries.

3. Predominant vehicles utilized by the employer are in the auto, passenger van, and/or pick-up truck categories (on-the-job programs).

4. The employer is not a small business (utilizing the size standards specified by the Small Business Administration for procurement/ loan purposes as a measurement guideline).

- Activity 3: Develop criteria for success/effectiveness based upon information from company records and documents. The following criteria were set for program success/effectiveness:

1. The safety belt program, which may be part of a larger corporate employee safety program, is circumscribed by a set of activities, practices, policies, and/or events aimed at encouraging employees to use their safety belts on and/or off-the-job. The program may have very specific goals and objectives or these may be general (e.g., to obtain as high a wearing rate as possible, etc.).

2. The program must be of a nature such that its major components are adaptable or replicable in other potential settings. In other words, a program of narrow or specialized applicability would be eliminated from consideration in this effort.

3. The program may be considered effective/successful in that a percentage of employees substantially higher than the average are using safety belts (on and/or off-the-job, depending upon program intent). The rate of safety belt use must be attributable to the operation of the program. Where no pre-program measure of belt use is available, the baseline of roughly 11 percent (1981 national estimate) will be used as a basis of comparison (e.g., compared to the average use rate of 11 percent, a program which achieves 50 percent use would be considered to be quite effective). Where pre-program measures are available, percentage difference will be utilized to determine level of success achieved by the program.

   a. Percentage measures of safety belt use are available through unannounced employee sample audit (company records of audits were utilized as measures).

   b. Where audit data are not available (due to physical set-up, etc.) another percentage-of-use measure is available such as a random anonymous survey conducted by the company or the contractor.

   c. Secondary indicators substantiate program effectiveness -- such as individual perceptions, self-report of belt use on accident forms, supervisor reviews, etc. Employees will be asked, where applicable and relevant, about their pre-program safety belt use.

• Activity 4: Delimit to a maximum of 10 the group of employers whose programs are to be included in the study of program variables. The pool of employers was delimited to those which best exemplified current on and off-the job approaches to motivation of employee safety belt use. Employer inclusion criteria included the following:

1. Employer qualifies as a member of the target audience as specified in Activity 2 of Task 2.

2. Employer has in place a program which satisfies program success/effectiveness criteria as specified in Task 2, Activity 3.

3. Employer is fully willing to participate in the project. The employer is willing to have PSS staff visit, review records, and interview employees/line management as appropriate.

PSS sought a mix of employer types as far as industrial classification, setting personnel, and use of transportation. The final selection reflected a mix of program types as well: on-the-job, off-the-job, combinations of on and off-job efforts, and a wide range of motivational approaches. The final employer participants were as follows:

1. Berg Electronics
   Camp Hill and Fishing Creek, Pennsylvania

2. General Motors Corporation
   Technical Research Center
   Warren, Michigan

3. Illinois Bell Telephone
   Chicago, Illinois

4. Laughlin Air Force Base
   Del Rio, Texas

5. Teletype Corporation
   Little Rock, Arkansas

Table 1 identifies key employer and program variables to illustrate the range of companies and program types included in the final selection.

Task 3: Obtain, Review and Document Existing Successful Employer Safety Belt Policies and Programs from Sample Group of Employers

- Activity 1: Obtain detailed program/policy materials and records indicating effectiveness. Site visits were conducted to each company with the purpose of securing program/policy information along with records and other indications of program effectiveness.

Berg Electronics was utilized as a pilot site visit for data collection. Based upon the initial visit to the pilot site, data collection guidelines/format was refined. Appendix C features the data collection guidelines for utilizing the following data sources on-site:

- Corporate safety staff
- Supervisors
- Employees/program recipients
- Records

Guidelines were developed based on Phase 1 general program observations and refined subsequent to the Berg site visit.

- Activity 2: Review and document program/policy materials including effectiveness indicators. Utilizing the data collection guidelines as a framework (adapted to each unique program setting) program data and materials were reviewed and documented -- including indications of success:

  - Interviews with program staff, particularly safety belt program coordinator

  - Supervisor/employee interviews

  - Materials on accident reporting, audits, cost benefit analysis as available

Task 4: Analyze Policies and Programs and Extract Variables

In PSS's cursory analysis of program variables and components encountered in Phase 1 site visits to successful programs, a number of elements emerged which

TABLE 1: MAJOR EMPLOYER PROGRAM CHARACTERISTICS

Employer	Program Characteristics[1]										
	On-job effort	Off-job effort	Mandate for use	Active enforcement	Tangible Indiv Incentives	Tangible Group Incentives	Auditing for Enforcement	Auditing for Incent. Reward	Auditing for Evaluation	Safety Dept. Sponsor	Other Corp Sponsor
Berg Electronics (2 sites)	x	x	x	x	x	x		x	x	x	
General Motors Technical Center		x	x		x[2]	x		x	x		x[3]
Laughlin Air Force Base	x		x	x	x[4]		x	x	x	x	
Illinois Bell Telephone	x		x	x			x		x	x	
Teletype Corporation		x	x		x			x	x	x	

[1] Employer characteristics refers to the interpretation of the variables within the setting visited for this research. Moreover, these data do not necessarily represent the situation at all sites of any given company, only at those sites included in the study.

[2] General Motors gives a tangible incentive for belt use in a secondary sense: employees who pledge to wear safety belts are given a chance in the form of a lottery ticket for the sweepstakes drawing.

[3] General Motors effort at the Technical Center is sponsored by the Environmental Activities area of the company.

[4] At Laughlin Air Force Base an individual is given a chance to win in a monthly drawing for a tangible, individual prize. The "chance" is secondarily tangible in that the individual's name appears on a list for inclusion in the drawing. His name is also posted on bulletin boards as a wearer.

appeared to be potential contributors to program success. Some of the elements were shared by all the "successful" programs. Others were shared by a few. In Task 4 PSS sought to create a variable list which would reflect past data collection, the experience of the current successful programs visited, and the opinions/experience of experts in the area of employee safety belt programs.

Experts were identified -- those individuals who had studied the operations of successful safety belt programs, created them or otherwise had a working knowledge of what comprised effective efforts. A Delphi process was initiated as a means of bringing expert knowledge to bear on the task of analyzing the components of successful programs. A Delphi process utilized in the context of this project is an iterative process in which experts are asked to define or respond to major issues and then to the results of their responses.

In the first iteration of the process participants were asked to rate the elements identified in Phase 1 and to comment on the ratings, modify and/or add to the total list according to their knowledge and experience. Appendix D lists the Delphi participants and contains the first and second-round Delphi worksheets.

As a working definition of success for the Delphi participants, PSS asked that they use percent of employees routinely wearing safety belts on or off-the-job (as implied by a range of measuring techniques) as a barometer of success. Where pre-program measures are unavailable, the national average of citizens wearing belts of 11 percent provides a baseline; success then rises with the percentage of employees wearing safety belts on a routine basis.

- Activity 1: Develop and apply criteria for the inclusion of variables in a master list. The criteria for inclusion of variables were as follows:

1. Variable was identified by Phase 1 research at sites of successful programs as being part of the safety belt program (usually indicated by the program coordinator).

2. Variable was cited by the Delphi experts as a possible contributor to program success.

3. Variable was identified in Phase 2 research -- cited by program staff, supervisors/employees, program records, etc. as a viable part of the program and/or as a contributor to program success.

- Activity 2: Develop master list of program/policy variables. The development of the master list of variables proceeded with the presentation of elements identified in Phase 1 to the Delphi group for rating, comments, additions, etc. The initial elements were as follows:

1. A high level of employee "safety consciousness", evidenced by the operation of an overall safety program for employees.

2. Management's commitment to the program and policies.

3. Very specific and highly publicized goals and objectives for the employee safety belt program which often are based upon the past safety record of the company.

4. Responsibility for employee safety rests with line management.

5. Positive incentives for good safety records are given to line management.

6. The company mandates a well publicized safety belt use policy for all employees.

7. Disciplinary procedures are well defined and publicized for non-compliance with the policy.

8. There is an on-going personalized safety education and training effort for all employees.

9. Employees who drive on-the-job are provided with driver training/ defensive driving instruction as part of their job.

10. There are positive incentives for employees to use their safety belts.

11. Employee participation in safety training is promoted.

12. The company conducts systematic accident recordkeeping -- including the recording of safety belt use or non-use.

13. Accident cases on-the-job are subject to a company review procedure.

14. Companies have attempted some form of general safety belt use audit -- dependent upon the company's physical setup and other factors -- to obtain a general measure of employee compliance with the safety belt use policy.

15. Company vehicles are routinely checked to insure that safety belts are in good working order.

16. Special efforts are directed toward the encouragement of off-the-job safety belt use -- including outreach to family members.

The initial list of sixteen variables was augmented and modified based upon the responses of the Delphi group.

- Activity 3: Interpret and augment variable information through informal interviews with program staff and others as appropriate. The site visit information compiled from interviews with program staff, supervisors/employees, and record review were synthesized into case studies. The cases were interpreted for additional variable information which was then added to the Phase 1 and Delphi generated data.

Task 5: Analyze Program/Policy Variables and Develop List of Factors

- Activity 1: Determine commonality of between-company variables through mapping procedures. Case histories were content analyzed across variables for commonality of variables.

- Activity 2: Synthesize variables into program/policy factors. The variables mapping yielded variables falling into distinct categories. The following factors comprised the preliminary list:

1. Strong, active management commitment to the program.

2. Systematic recordkeeping on motor vehicle accidents, including safety belt use.

3. Positive incentives for employee safety belt use.

4. Auditing for evaluation of program effectiveness.

5. Mandated policy which is enforced.

6. Comprehensive safety belt education.

7. Communications within the company regarding the employee safety belt program are on-going and multi-faceted.

8. There is an outreach effort to spread the safety belt message beyond the workplace.

Task 6: Conduct Ranking of Factors as they Contribute to Program/Policy Success

- Activity 1: Delphi weighting of program factors. The group of experts ranked the eight factors identified as contributing to program success in Task 5. Factors were weighted according to their importance in the success of an on-the-job safety belt program for employees.

- Activity 2: Mean weights were used as a measure of the relative importance of the factors. Factors were listed in their order of priority according to this method of ranking.

- Activity 3: Analyze Delphi results. The Delphi weighting/ranking results were analyzed against site visit findings for agreement.

- Activity 4: Write master list of components of success. The following list of components were identified as contributing to program success were written in their rank order:

1. Management commitment

2. Positive incentives for safety belt use.

3. Mandated policy which is enforced

4. Systematic recordkeeping of motor vehicle accidents which includes the use or non-use of safety belts.

5. Comprehensive safety belt education program.

6. Program promotion within the company.

7. Outreach effort to spread safety belt use outside the workplace -- especially to the family.

8. Auditing to evaluate the program's effectiveness.

Task 7: Develop a Master List of Promising Approaches to Each Program Component

- Activity 1: Weight elements of program factors as to their importance to respective factors. Elements which were identified as contributors to program success were subsumed under their respective program factor. Delphi members weighted the elements as contributors to respective factors.

- Activity 2: Analyze and document contribution of component elements. Those elements receiving relatively high mean weights were examined against site visit data. A summation of how elements interact in creating each success component was completed. Examples of Promising Approaches to selected elements are included in Appendix B to this report.

Task 8: Develop Model Program Guidelines

- Activity 1: Develop a framework for creating a successful program. A framework and guidelines for creating a successful program were developed based upon the components and elements of success and promising approaches developed in the research effort.

Task 9: Develop Manual Incorporating Employee Safety Belt Program/Policy Guidelines

- Activity 1: Write draft manual based upon the model program guidelines developed in Task 8. The draft was prepared for the target audience.

- Activity 2: Submit draft manual to contract technical monitor for approval.

- Activity 3: Incorporate contract monitor's comments into draft manual

- Activity 4: Submit second draft for final NHTSA approval.

- Activity 5: Finalize manual product. The final manual product is featured in Appendix A of this report.

Task 10: Conduct Needs Analysis/Evaluation of the Health Promotion/Wellness Program Area in Industry to Determine Whether It Represents a Viable Setting for an Employee Safety Belt Component

- Activity 1: Conduct literature review and information gathering. Based upon current literature and contacts with relevant groups and individuals, a study was made of the major objectives, processes, and philosophies involved in wellness programs as they exist today.

A review of the current literature was conducted by PSS in order to ascertain the state-of-the-art in comprehensive health promotion/wellness programs as they exist in business and industry today. While this review of the literature was not intended to be exhaustive, PSS sought to include major pieces of significance to the field as a whole. It was not the intention of the review to exhaustively research each major risk area, but to get an overview of program philosophy, process, etc. A Bibliography of the literature reviewed in this activity is included at the end of this report.

Major reference sources utilized by PSS identify relevant literature and to obtain background information concerning Health Promotion/Wellness programs in business and industry included:

- American College of Preventive Medicine
- American Hospital Association
- American Public Health Association
- American Association of Fitness Directors in Business and Industry
- George Washington University Medical Library
- National Academy of Sciences, Institute of Medicine
- National Health Information Clearinghouse
- National Institutes of Health, National Heart, Lung, and Blood Institute
- National Library of Medicine
- President's Council on Physical Fitness and Sports
- University of Maryland
- U.S. Department of Labor, OSHA Technical Reference Service
- U.S. Health and Human Services Library
- U.S. Public Health Service, Office of Disease Prevention and Health Promotion
- Washington Business Group on Health

The review of recent literature provided a backdrop for all other activities associated with this portion of the project -- interviews, small group discussions and site visits. It provided the base upon which assessment of health promotion/wellness programs as vehicles for safety belt program components could rest.

• Activity 2: Conduct interviews with relevant sources. Experts in the area of health promotion/wellness were interviewed for the purpose of identifying major perceptions about inclusion of a safety belt program component in the wellness setting. Perceptions were to include needs, perceived drawbacks/problems, relationship of health promotion/wellness programs to the corporate framework, etc.

With the help of the Contracts Technical Monitor and the review of recent literature, the following individuals were identified as experts in the area of health promotion/wellness whose insights would be sought through personal interview:

1. Ruth Behrens
   Senior Advisor of Worksite Health Promotion
   Office of Disease Prevention and Health Promotion
   U.S. Public Health Service

2. Jonathan Fielding, M.D., M.P.H.
   Center for Health Enhancement Education and Research
   University of California, Los Angeles
   Los Angeles, California

3. Lawrence Green, Dr.P.H.
   Center for Health Promotion Research and Development
   University of Texas Health Science Center
   Houston, Texas

4. Clarence Pearson, M.P.H.
   Assistant Vice President
   Health and Safety Education Division
   Metropolitan Life Insurance Company
   New York, New York

   President
   National Center for Health Education
   San Francisco, California

The individuals listed above were called in order to arrange an interview and to explain the nature of the needs assessment task within its context of the Employer Safety Belt project. Background materials on employer safety belt programs and Phase 1 employer manual were provided to the individuals for discussion during the interview. The format of the interview was concerned with the following major points which were covered in a casual, open-ended manner:

- Perceptions of safety belt use as a health issue.
- Perceptions of the need for a safety belt program component in health promotion/wellness programs;
- Willingness/desire on the part of programs to include a safety belt component;
- Conceptualization of the form that a safety belt program component might take to best serve needs within the existing framework and process of wellness programs;
- Perceived advantages and possible drawbacks of including safety belt use as a health promotion program component;
- Perceptions on the interaction/communication between safety departments and wellness programs within industry; and
- Types of written materials that would be most helpful to administrators and practitioners interested in safety belt programs.

As a further step in its attempts to tap the perceptions of key people in health promotion/wellness regarding inclusion of a safety belt module, PSS sent letters to a number of prominent health promotion consultants in industry, along with a copy of the Phase 1 manual. The letter outlined the objectives of the needs assessment task of the project and asked for input concerning the safety belt area. The consultants thus contacted were as follows:

1. Don Ardell, Ph.D.
   Mill Valley, California

2. Rick Carlson, J.D.
   Mill Valley, California

3. Leland Kaiser, Ph.D.
   Associate Professor
   Graduate Program in Health Administration
   University of Colorado at Denver

4. Art Ulene, M.D.
   Cable Health Network
   Los Angeles, California

5. Donald M. Vickery, M.D.
   President
   The Center for Consumer Health Promotion
   Reston, Virginia

• Activity 3: Conduct focus group interview/small group discussions with health promotion program directors/practitioners to get their input on major issues involved in safety belt program component inclusion.

Small discussion groups were scheduled with directors of health promotion/ wellness programs who would be attending the Society for Behavioral Medicine Conference in Baltimore, Maryland. The following individuals were contacted by telephone, sent a follow-up letter with copy of the Phase 1 booklet and interviewed at the March, 1983, conference.

1. Murray P. Naditch, Ph.D.
   Director
   Advanced Programs
   Healthcare Services
   Control Data Corporation
   Minneapolis, Minnesota

2. Rebecca Parkinson, M.S.P.H.
   Staff Manager
   Employee Health Education
   Corporate Medical Division
   American Telephone & Telegraph Company
   New York, New York

3. Carol J. Vermilyea, Ph.D.
   Training and Program Development Coordinator
   Johnson & Johnson LIVE FOR LIFE Program
   New Brunswick, New Jersey

4. Beverly Ware, Dr.P.H.
   Employee Health Services
   Ford Motor Company
   Dearborn, Michigan

5. Curtis S. Wilbur
   Program Director
   Johnson & Johnson LIVE FOR LIFE
   New Brunswick, New Jersey

6. Edward Christopherson, Ph.D.
   Chief of Behavioral Sciences Section
   University of Kansas
   Lawrence, Kansas

Discussants were reviewed on the Employer Safety Belt project that PSS had been conducting for NHTSA. The contents of the booklet, "The Profit in Safety Belts: A View for Employers", was reviewed, along with the identification of factors of success in existing safety belt programs in industry. Questions were then posed to the participants which would lead them into the target areas of concern as enumerated in Activity 2 above. Questions were geared to individual program experience and sharing/brainstorming on the program area in general as it relates to safety belt component inclusion.

As an outgrowth of this activity PSS conducted a site visit to Johnson & Johnson's LIVE FOR LIFE program in New Brunswick, New Jersey in order to gain first-hand impressions of the program and to further interview program staff within their own setting. Appendix F contains a case-study of LIVE FOR LIFE.

In order to gain the most comprehensive insight about the response of health promotion/wellness programs to the safety belt component issue, PSS contacted Mary Longe, Staff Specialist, Center for Health Promotion, American Hospital Association, regarding the upcoming Innovator's Conference of the AHA. Eleven practitioners in hospital-based health promotion programs were identified as potential interviewees at the conference. PSS project staff attended the Innovators Conference and interviewed two individuals at a scheduled breakfast meeting; a number of other attendees were interviewed on a casual basis to capture the tenor of their response to the topic of inclusion of safety belt use as a component of health promotion programs. Individual telephone interviews were conducted with several attendees as a follow-up to the Innovators Conference.

PSS's attendance at the conference also afforded the opportunity to gain insight into the philosophy, goals, processes and needs of hospital-based health promotion/wellness programs based upon the presentations at the conference. Along with innovative programs sharing their experiences, keynote speakers were:

- Charles A. Berry, M.D., M.P.H.
  President
  National Foundation for the Prevention
  of Disease
  Houston, Texas

- Leland Kaiser, Ph.D.
  Associate Professor
  Graduate Program in Health Administration
  University of Colorado at Denver

- Mary Longe
  Staff Specialist
  Center for Health Promotion
  American Hospital Association

• Activity 4: Analyze data and assess needs of the health promotion/wellness program area for safety belt program component and related materials. Interview data were analyzed within the context of PSS's understanding of comprehensive health promotion/wellness programs. Critical viewpoints across key issues were documented and analyzed vis-a-vis safety belt program component inclusion. Recommendations were developed regarding safety belt component and program materials needs.

III. FINDINGS AND ANALYSIS

The research findings and their analyses are generally embodied in the final manual product, "Employer Guide to an Effective Safety Belt Program", for Tasks 2-9 of this effort. Within this document is featured the program model for employers wishing to design an employee safety belt program for on and/or off-job belt use. Under the major sub-section below are discussed the preliminary findings and analysis which contributed to the development of the manual.

The needs assessment within the health promotion/wellness area is also discussed in this section and is featured as a major sub-section.

Model Safety Belt Program Research

Data were collected on effective safety belt program components through two techniques: (1) Site visits to effective programs in order to view program processes, interview program administrators and participants, and to review records which would reflect operations of the program and indications of its effectiveness in getting employees to use safety belts; (2) A Delphi process to gain the benefit of expert experience and opinion on effective safety belt programs. The two types of data collection were completed and results analyzed and synthesized to afford PSS the insight required to develop the model and guidelines for employers wishing to establish programs with a high potential for success.

Employer Site Visits

PSS's initial perceptions of relative program "success" and commonality among elements which appeared to contribute to success served as a starting point for Phase 2 activities. Employers were beginning to seek advice on running successful programs, and NHTSA wanted to provide for them guidelines based upon the experience of companies that were already running successful programs. The site visits represented an in-depth data collection and analysis of five programs which had strong indications of being successful in getting employees to use safety belts. Data were synthesized in a case study approach to each company.

It was not within the scope of this effort to conduct a rigorous assessment of effectiveness across the five companies selected. As PSS did not have the resources to collect original data on program effectiveness, the predominance of available resources were allocated to understanding and describing the program. In identifying successful programs PSS relied mainly on evidence supplied by the company. As companies were contacted (and visited) evidence of effectiveness was requested. Employer cooperation and the quality of evidence were highly considered in the selection of companies. The primary criterion of program effectiveness utilized in this study was the percentage of employees using their safety belts derived from a variety of observational procedures carried out by program personnel.

Additional information on program effectiveness was provided by employees as part of routine interviews and discussions and included (1) employee/recipients, (2) members of middle management/supervisors, and (3) program administrators.

Of central importance to this study is the idea of what, in fact, comprises a "program". PSS utilizes the idea of program to refer to a comprehensive set of components/activities/processes which work together to effect the behavioral change of employee safety belt use. A policy, within this definition, may be part of a comprehensive program, but a policy is not a total program. All of the companies visited have programs currently in effect. They may have begun with a policy or a single activity, but have broadened their effort to encompass a comprehensive approach to safety belt use.

Table 2 shows the effectiveness data on the five companies visited during this phase of the effort.

TABLE 2: PROGRAM EFFECTIVENESS DATA

Employer	Baseline at Program Inception	Baseline at Time of Visit	Percent Change
Berg Electronics (Fishing Cr.)	46	90	44
General Motors Technical Center	36	70	34
Laughlin Air Force Base	40	93	53
Illinois Bell Telephone	40	99	59
Teletype Corporation	15	45	30

Program inception baselines are high in comparison to the national norm with the exception of the Teletype Corporation's baseline of 15 percent. The strength of the other baselines is attributed to intervening variables such as a company's high level of attention to employee safety which is manifested in stringent recordkeeping, rewards for good safety records, etc.; SES factors present in a highly professional, white collar employee population; pre-program existence of a mandate for use in a setting where rules are generally enforced and stringent disciplinary procedures brought to bear on personnel.

Table 3 indicates the type of observation(s) that were conducted by the employer to arrive at the baseline at the time of the site visit. The operation and implications of the evaluation audit variables featured in Table 3 are discussed further in the sub-section of the report entitled "Auditing/evaluation" under "Data Analysis".

TABLE 3: EVALUATION AUDIT INFORMATION

Employer	Evaluation Audit Variables: Separate Audit for Evaluation	Combined with incentive award	Combined with Group incentive audit	Combined with enforcement	"Random Sample"	Obtrusive audit	Unobtrusive audit	At Entrance/Exit Point(s)	Within Company property
Berg Electronics		x	x		x	x		x	
General Motors Technical Center			x		x	x		x	
Laughlin Air Force Base		x		x	x		x		x
Illinois Bell Telephone				x	x		x	x	
Teletype Corporation	x				x	x	x	x	

Audits for the purpose of evaluating success or effectiveness of the program in getting employees to use safety belts were conducted in a variety of ways at program sites. Only one company conducted a separate audit solely for the purpose of observing belt use. All of the other companies combined their evaluation audit with other activities of the program (i.e., giving out individual incentive awards such as coupons, lottery tickets, and prizes; auditing for the purpose of group incentive campaigns; combined with enforcement activities, etc.). Some of the programs combined several functions with the "auditing for evaluation" function -- a practice whose implications will be discussed at a later point in this report.

Randomness in this context is meant to denote an attempt on the part of the employer to select a sample of the target population whereby all employees within the target group have an equal probability of being observed.

Obtrusive audits vs. unobtrusive audits denote the advance notice to employees that their behavior is being observed. In some cases an unobtrusive audit is truly unobtrusive -- the employee does not ever know that he has been observed and/or he does not know for what purpose he has been observed. In obtrusive audits the employee either knows in advance (through a line forming, etc. or seeing what is taking place) that he will be observed.

Observations within company property are those that are conducted for the purpose of auditing drivers as they travel on the company's premises. Although some of the employers observe employees exiting company property, only one employer observes employees as they drive well within the confines of the premises.

Program data were collected according to the guidelines developed in Task 3 (See Appendix C) at each program site, and case studies were written for each program. Berg Electronics served as a pilot for data collection. The Pilot Summary is contained in Appendix E along with revised interview format.

Delphi Process

In the first phase of the Delphi process the participants were presented with the sixteen program variables which PSS had identified as potential contributors to program success during Phase I site visits (See Appendix D). Participants were asked to rate the variables as to their importance to program success and to give rationale or underlying assumptions for the ratings. Further, Delphi members were requested to add any variables they felt represented elements which contributed to program success as dictated by their knowledge and experience.

The first round yielded a breakdown of elements into the following categories, according to mean scores:

- Important+
- Important
- Slightly Important+
- Slightly Important

None of the elements received a mean score in the unimportant or negative categories of rating.

A number of additional elements emerged from the "other suggested elements" portion of the worksheet, although many were actually suggestions of promising approaches rather than more general program elements.

Responses in the top three categories were examined along with the underlying assumptions and additional elements. The following major areas or components were suggested:

- Management commitment
- Systematic recordkeeping
- Positive incentives
- Auditing for evaluation
- Mandated policy which is enforced
- Comprehensive safety belt education
- Communications within the company regarding the program
- Outreach effort beyond the workplace

The second round of the Delphi process asked participants to weight the eight major components to total 100 points that would comprise a total on-the-job employee safety belt program. In addition, the program elements (suggested by Delphi I results) were presented for weighting to a total of 100 points to comprise each component. This procedure was included in order to gain insight about the relative importance of the components to the total program effectiveness and the importance of individual elements to each major component.

It was specifically stated on the worksheet that an on-the-job program was the subject of the iteration. Further, the sheet put forth PSS's understanding of the difference between on and off-job efforts -- mainly in the area of mandate/ discipline/enforcement issues. Delphi members were asked to add any further distinctions between the two types of program focus according to their experience.

In addition to the weighting of components and elements in Round 2, participants were asked to add any component(s) that they felt should also be considered as part of a successful program.

Among the major components of successful employee safety belt programs, the following prioritization occurred as a result of mean weights assigned by the Delphi participants:

1. Incentives ($\bar{X}$ = 20 percent)
2. Mandate/Enforcement ($\bar{X}$ = 20 percent)
3. Management Commitment ($\bar{X}$ = 18.3 percent)
4. Recordkeeping ($\bar{X}$ = 9 percent)
5. Education ($\bar{X}$ = 8.8 percent)
6. Outreach ($\bar{X}$ = 8.8 percent)
7. Communications ($\bar{X}$ = 7.8 percent)
8. Auditing/Evaluation ($\bar{X}$ = 7.2 percent)

The results suggest a program where approximately 60 percent of the weight is nearly evenly given to incentives, mandate/enforcement and management commitment. The remaining components appear to support or form a framework for this trinity. The supporting components are fairly evenly weighted -- the largest mean weight difference is only 1.8 percentage points. Recordkeeping is given fourth highest weight and is considered less than half as important as each of the top three components.

A program based upon the weightings above would have as its major thrust a combination of incentive and mandated policy which is enforced. Management's commitment would be heavily weighted.

Program element ratings provided indications of the relative importance of individual elements to the success of a given component. The mean-weight rankings of elements is included in Appendix D. No additional elements were yielded by Round 2 of the Delphi Process.

The identification and ranking of major components and their most important elements was utilized in analyzing the program case studies.

Data Analysis

The program case studies were analyzed vis-a-vis the major components and their major program elements. The operation of success components was rated by two individual raters in order to insure as much reliability as possible. Within each component the presence and strength of each element was rated for each program.

The sub-sections below feature synthesis of site-visit and Delphi process findings for this effort.

Management commitment. Management commitment appears to be a key element in the development of a successful safety belt program. In the programs observed, this commitment went far beyond mere statements by management in support of a safety belt program. The following are the most salient manifestations of management commitment:

1. Management commits money to the program. This investment is manifested directly through funds to permit the purchase of films and equipment, etc., and indirectly by providing time for employees to attend safety meetings, view films, and participate in other program activities. Without adequate funding the program goals and objectives cannot be met properly.

2. The appointment of an energetic, imaginative, and committed individual to launch and direct the program. Effective programs are not developed by passive people running half-hearted efforts. Management selects a creative person, who is preferably known and respected by employees, then gives him or her the authority to run the program as s/he sees fit.

In addition to these central manifestations of management commitment there are several other elements which characterize the successful program:

- Management at all levels is involved in the program, often in a continuing and visible way, and is held accountable for program performance through a routinized chain of command -- each level accounting to the one above it for safety records, of which safety belt use is a part. Supervisors are highly involved in promoting belt use among their employees.

- Management participates in the program, often in a very visible way, as an endorsement and identification with the effort. Participation in the "flesh" at audits and incentives awards events, involvement at meetings with employees on safety belt use program and other safety issues, letters sent to all employees or to a specific employee regarding the belt use/nonuse signed by top management individuals, etc. are all promising approaches to management participation.

- Management operates the safety belt program as an integral part of an overall safety effort. As a consequence, it is not viewed by the employees as an ad hoc, ephemeral concern of the company, but as a natural part of management's broader attention to corporate safety.

In many cases the program is part of the overall safety effort or was an outgrowth of that safety effort and was created because of perceived need. All of the companies have a mandated on-the-job safety belt use policy, whether their program is aimed at on or off-the-job belt use or both.

In the majority of companies visited, the union was involved either from program inception or at the design stage of the effort.

The majority of companies set very specific goals for level of safety belt use with some specifying time frames within which the rate must be achieved (used

in conjunction with group incentive efforts). The other companies simply sought to achieve as high a rate as possible with their program.

Incentives. The role of incentives in successful safety belt programs varies greatly across companies. Most programs have some form of rewards which serve as an incentive to wear safety belts. The main variations appear to be along the following lines:

1. Individual vs. group-based incentive systems. Some programs offer rewards based on individual safety belt use; others offer rewards contingent on the group performing at a certain level of belt use.

2. Reward based on individual observed use vs. individual self-report of use. Some programs reward individuals based upon the observed use of the safety belts; others, (especially in conjunction with a group incentive program) reward pledged use with a chance to win a larger prize.

3. Size/scope of rewards. Incentive rewards range in size from Hershey kisses to automobiles. Of course, large rewards are given relatively infrequently and, as with the automobiles offered at General Motors, are linked to group belt use.

The small individual-based rewards (pins, flowers, etc.) appear to assist initial belt use behavior. There is reason to believe that reinforcement is stronger when individuals have some reward, no matter how small, and employees do seem to appreciate getting something tangible for safety belt use. It may even serve as their public excuse for compliance. In addition, it seems to aid the development of group pressures for use (e.g., "I've got my pin on, where's yours?"). Moreover, the cost of such rewards is negligible.

The group process is seen to be very effective in initially boosting rates due to peer pressure and the publicity and discussion generated by group incentive awards -- larger prizes and group effort. The effects of the large, infrequently awarded incentives for group safety belt use rates are less clear. While they appear to have some positive effects, they are susceptible to the "one-shot" mind-set that says, in effect, "let's all wear our safety belts until we reach the rate required for the prize, then we can slack off."

There is reason to believe that both individual and group incentives together are the most effective -- either at the same time or an individual thrust followed up by a group thrust.

Auditing is the method used in all of the incentive programs to ascertain whether or not group goals for incentives are being reached and to reward individuals for their belt use, with the exception of the one pledge program where a signed pledge results in individual reward of a chance at a car drawing. Audits are done for incentive purposes in a variety of ways:

- Personnel stationed at all times at one or another gate checking for safety belt use

- Random surprize audits with lots of fanfare

- Random audits that are done two or three times per week for a small sample of employees each time

- Audits that combine more than one purpose: auditing for individual incentive reward combined with auditing for group wearing rate; individual incentive reward combined with auditing for enforcement of mandate; etc.

It appears that incentive programs are enhanced by the existence of a mandate for on-the-job use, even if the incentive effort is aimed at motivating off-the-job use. The mandate apparently adds credibility to the program and is further indication of management's support of the effort.

Table 4 shows the relationship of the programs visited to incentive variables discussed in the paragraphs above.

TABLE 4: INCENTIVE PROGRAMS

	Incentive Variables									
Employer*	Aimed at on-job use	Aimed at off-job use	Individual incentives	Group incentives	Tangible rewards	Pledges rewarded	Audit for individual reward	Audit for group reward	Belt-use mandate	Audit for enforcement
Berg Electronics		x	x	x	x		x	x	x	
General Motors Technical Center		x	x	x	x	x	x	x	x	
Laughlin Air Force Base	x		x		x		x		x	x
Teletype Corporation		x	x		x		x		x	

Nearly all programs offer incentives to the individual employee for belt use -- generally in the form of a small prize and/or a chance (in the form of a lottery ticket or automatic inclusion of one's name in a drawing) to win a larger prize. Groups are motivated to consistently wear belts (and encourage others to do so) in two of the companies by making the prize drawing dependent upon the group's reaching a pre-determined wearing rate goal (General Motors) and by making the reward of pre-selected prizes for the entire company dependent upon reaching the safety belt goal (Berg Electronics).

All of the rewards can be considered tangible in the companies visited. However, some are more tangible than others. In some cases the individual incentives translate into receiving a primary-tangible reward when belt use is observed

*Illinois Bell Telephone cannot be said to offer tangible incentives to employees. The highest level of incentive would be a letter to one's supervisor stating that the employee wore belts during an enforcement audit.

(e.g., Berg Electronics rewards all who are wearing belts during an audit with prizes such as Hershey kisses, etc.). In other cases the reward is secondarily-tangible -- a chance to win a tangible prize is the individual reward for pledged use at GM, and the chance is in the form of a tangible lottery ticket. Laughlin Air Base rewards belt use with a chance at winning a tangible prize; however, the individual reward is getting one's name on the list for the drawing -- the least tangible immediate reward among the employers visited.

All of the employers audit belt use (with the exception of Illinois Bell) for reward of individual safety belt wearers. General Motors utilizes a secondary approach: they reward pledges who promise to wear belts, then audit actual use and reward based upon group wearing rate; individual reward of burger coupons was an innovation at the time of site visit, presumably for reward of individual use. All of the employers have belt use mandates in effect. Laughlin Airforce Base combines incentive audit with mandate enforcement audit as part of its on-the-job safety belt use program.

Illinois Bell Telephone did not have an incentive component in place at the time of PSS's site visit that could be considered tangible and/or consistent.

Mandate/enforcement. All of the companies visited have a mandated policy for on-the-job use of safety belts. Two of the programs are only slightly influenced by the mandate as so few employees drive on-the-job from these facilities. One program is strictly a mandate/enforcement oriented effort, while the remaining two are combinations of mandate/enforcement and incentives of a tangible and positive nature.

At the sites where the mandate is a viable entity, discipline is prescribed for non-compliance and ranges from an infraction of significant enough impact to be cause for possible dismissal, loss of driving privilege on-site, possible loss of Workers Compensation coverage, referral to a safety course for remediation, etc. It was noted that the more serious consequences are used mainly as threats and are not (or are rarely) enforced.

Non-compliance can be apprehended in several ways: (1) audits, (2) supervisors in the field monitoring employees, (3) special riding safety checks by the supervisor, (4) accident investigation. Of the companies visited, two have a definite auditing component utilized for enforcement of the mandate; one conducts an occasional audit. The mandate-involved companies, including those that conduct audits, also utilize the safety checks, and use supervisors as monitors of safety belt use where possible.

Accident investigation is conducted by the companies that have employees regularly driving on-the-job, and the process is formal and standardized. However, while safety belt use is recorded on accident forms, it does not appear to be a real means of checking for compliance. Almost all employees report belt use in companies where there is a strong mandate for use.

There is evidence that a stiff mandate and enforcement policy without the complement of the type of positive influence afforded by an incentive program runs a risk of encouraging rebellion in employees, especially when they are off-the-job. One company witnessed the dropping of use rates when incentives were removed. Other employers have reported that while their use rate for on-the-job use is high, they are disturbed by a possible back-lash effect in off-the-job death and injury in motor vehicle accidents.

Some of the major areas of concern among the Delphi experts involved an incentives vs. mandate/enforcement stance. A pro-mandate position couches safety belt use in the context of other mandatory safety standards and contends that incentives weaken the standards. However, unlike earplugs, hard hats, and other equipment, many of the programs purport to motivate off-the-job safety belt use. The anti-mandate position regards the mandate/enforcement process to be non-productive and a considerable disincentive to off-the-job use in the long run.

As stated earlier, site visits and interviews yielded some evidence of off-job rebellion of a hard-line mandate/enforcement policy. On the other hand, belt use on-the-job does fall within other safe work practice requirements and as such it may not be appropriate to single it out for an incentive-only approach. Contrary to finding the two approaches in opposition, they can and have been successfully integrated.

Recordkeeping. Most of the organizations included in the site visits maintain a computerized system that records motor vehicle accidents, extent of injuries, and whether or not a safety belt was used. Motor vehicle accidents can be selected out of total accidents, and there is usually some indication of the outlay of money that the injuries have cost the company -- usually only in terms of man-days lost. None of the companies are making estimates that include indirect costs. All of the companies have at least some access to off-the-job employee motor vehicle accident information.

Four companies have very definitely used accident record analysis to determine where their safety problems lie and to assess their safety belt program needs. At least three programs analyze data on a regular basis, hold meetings with upper management to determine program direction, etc. Two programs were created due to perceived need from the review of accident data -- two off-the-job programs were developed due to the high off-job involvement of employees in motor vehicle accidents and high expenses in this area.

The record-keeping function is important to some extent in providing a means for a company to track its progress in injury and cost reduction after implementation of a sfety belt program or new phases/campaigns of an existing one. However, it must always be kept in mind that accidents happen randomly. Further, recorded safety belt use is generally self-report and is, therefore, not considered to be the most reliable measure of program effectiveness, particularly if there is a strong mandate for on-the-job use. Some companies are looking at cases where employees are "saved by the belt" as a means of estimating money saved through safety belt use. The accident is analyzed at a cursory level and an estimate is made of the extent of injury (or possible fatality) that would have resulted if the employee had not worn the safety belt; an estimate is made of what that level of injury or fatality would have cost the company. This estimate is compared to what was actually spent (often nothing) on the belted employee in the way of hospital and doctor bills, days lost, indirect costs, etc. and the difference represents the savings effected by the safety belt use.

The most important facets of an effective recordkeeping system include the following:

1. The system systematically records all motor vehicle accidents. If the system is part of an overall accident record system, the motor vehicle records should be easily separated and retrievable.

2. The recordkeeping system thoroughly describes the accident, including injuries, damages, costs, and whether safety belt was used or not.

3. The system produces easily obtainable summaries of the above information, by quarter if possible.

Education. The education of employees appears to be a central facet of any successful safety belt program. Most educational efforts at the sites visited use multiple techniques, including special courses, films, regular safety meetings, printed materials, and demonstrations. No single approach is relied upon. However, among the many techniques, those which employees point to as most persuasive are the following:

1. Films: Such films as "Room to Live" serve as vivid means of communicating the important facts about safety belt use.

2. State police presentations: Talks by state police carry special significance to most employees; they are seen as "outsiders", not controlled by the company, and have witnessed accidents first-hand. Their oft-used statement is especially effective: "In 10 years as a State Police Officer, I have never unbuckled a dead person." Other small group talks and presentations are also considered useful in communicating the program and its message at a more personal level.

3. The "Convincer": The device which demonstrates the thrust of a crash and the importance of a safety belt is apparently well named.

Other important characteristics of an education program include the following:

- The education program is routinized and integrated into the larger corporate safety program. In this way, the educational messages are retained by employees and are viewed as consistent with the company's larger concern for the employee's well being.

  - The supervisor plays a key role in employee education about safety belt use. New employees are oriented to the safety belt use policy and program; monthly safety meetings are common across sites with supervisors briefing the employees on safety issues, including the safety belt program. In at least one company employees are asked for their input for programs on safety scheduled for the year and actually take part in program presentations.

- Written materials are given to employees on the myths of safety belt use and safety belt effectiveness. Such materials as "Make it Click" campaign literature and 101 Most Critical Days materials from the National Safety Council are typical of the types of materials passed out in education program components.

- Actual employee experience is used as an educational tool. Employee cases or "saves" are used to educate other employees of the value of safety belt use in a way that really hits home. Safety reports and accident investigation results are distributed through the chain of command in some companies so that supervisors, plant managers, etc. can benefit from the experiences and the findings.

Some companies that have a number of employees driving on-the-job offer defensive driving courses to employees. Such courses include safety belt use.

Communications/publicity. The general purpose of the communications component of a safety belt program -- the promotional aspect of the program -- is to maintain the visibility of the program and its central messages. If the function of the education component is to inform and motivate people about safety belt use, the function of the communications/promotion component is to keep the facts and the motivation salient in the mind of the employee. During site visit interviews of employee program recipients, employees frequently cited "reminders" and "it's all around us" as being very important in their change to the safety belt habit. (It should be noted, however, that although a distinction is drawn here between "education" and "communications/publicity", the line is somewhat arbitrary; in practice it is sometimes difficult to decide where the education stops and the communications/publicity component begins).

All of the programs reviewed developed some kind of promotional strategy, although it varied from the mere issuance of a periodic bulletin to employees to a comprehensive campaign involving published testimonials, signs, memos, and informal talks. Companies with strong educational programs tended also to develop more comprehensive and effective communications campaigns. The one company program which is mainly an emphasis on the mandate and enforcement of safety belt use on-the-job is relatively lacking in the communication/publicity component area, possibly due to the "just taking care of regular business" attitude about the mandate and its enforcement. Employees have not been officially informed of the audits at the motor pool garage facility. It is mainly by word-of-mouth that employees know about there being a special effort.

Across the four organizations that have definite communications strategies for their safety belt programs, characteristics of these strategies vary not only in scope, but in terms of the techniques used and messages communicated. The most frequently used technique is the bulletin, printed periodially and posted on bulletin boards and/or distributed to employees. These bulletins are used to communicate the following:

1. Safety belt program events and progress: publication of the latest usage rates, notices of safety meetings, results of contents, etc. One company, General Motors, does this on a daily basis.

2. Reinforcement of educational messages: the most powerful form of this message is the personal testimonial, complete with vivid photographs, of people who have been "saved by the belt". This is often used to reinforce off-the-job use of safety belts.

3. Incentives: Sometimes the names of wearers or non-wearers will be posted to reward or discipline employees.

Other tehniques include the following:

- Signs and posters -- "buckle up" -- at gates and in garages
- Memos circulated to line management stressing the importance of their support.
- A contest to write the best safety belt slogan (and other special contests and campaigns)
- Articles in the company newspaper/newsletter about the contest/campaign and featuring stories of people saved by the belt.

- Other gimmicks to capture attention such as placing a wrecked car in a highly visible location on company property.

Signs, posters, memos and letters to employees are used to remind of the program and to announce new phases or contests. This type of communication/publicity is many times combined with upper management's identification with the program in that memos and letters may be signed by top company officials.

Supervisors play a key role in communicating the safety belt policy, message, and the program to employees -- particularly if safety records impact their own performance records. In several of the companies it is evident that the supervisors, through regular meetings and through casual everyday contact, are playing a vital role in communication and publicity.

The most promising communication/publicity components use several techniques to keep employees informed about and involved in the safety belt program and its progress and to maintain the salience of the importance of safety belt use in the mind of the employee.

Outreach. Most of the companies visited engaged in little systematic outreach activities; i.e., activities designed to carry the message of safety belt use beyond the company to the employees' families and the larger community.

The family is seen as one of the major ways of reaching out, and there is evidence from employee interviews of a "boomerang effect" -- if families, especially children, are involved the parent will hear the message reiterated by the family. One company involved the family's support in their incentive program for off-the-job driving. Some companies give the family an opportunity to come and view films and/or hear lectures.

Some companies have brought local newspapers and televisions into their efforts by preparing news releases or simply calling the station to inform them of an upcoming event.

Networking is another creative way in which some companies are getting free incentive rewards in exchange for publicity to local businesses. This provides another "boomerang" opportunity: the company involves the local business, and the business in turn serves as another reminder to get employees to wear their safety belts.

Some companies are participating in the education of the community on the use of safety belts. Lectures are being given by representatives and films are shown to various civic groups such as Scouts, womens clubs, etc.

Other methods of outreach included the following:

- Prizes awarded at audits are taken home and stimulate thought and discussion about safety belt use, especially those which contain some safety message (e.g., "buckle up" on key rings, etc.)

- Dissemination of information at company picnics and other family gatherings. The "convincer" was brought to one company picnic.

- Opportunities are provided occasionally for family members to see films such as "Room to Live" in the company auditorium after business hours.

Auditing/evaluation. In all of the companies observed, the safety belt program includes procedures for checking employee safety belt use. These "audits" of safety belt use serve three main purposes: (1) to provide an indicator of employee safety belt use, (2) to serve as a means of identifying non-users for enforcement/discipline purposes, and (3) to serve as a means of identifying users for purposes of rewarding them. The audits typically involve observing (sometimes stopping) employees' cars as they enter or leave company premises (in one case, the motor pool garage) and checking to see whether employees have their safety belt(s) fastened

The safety belt audits in these industries varied chiefly on the following dimensions:

1. Purpose of the audit. Some programs had combined purposes for the audit, such as reward and enforcement of mandate combinations. Only one program had a purely evaluation oriented audit, separate from both incentive or enforcement functions.

2. Frequency of the audit: Audits are conducted at rates that vary from several times a day, every day, to as infrequently as once every couple of months.

3. Sampling method: Most of the companies approximated a random sampling procedure.

4. Overt or unobtrusive: This varies somewhat with the purpose of the audit.

5. Persons conducting the audit: The individual or group conducting the audit may be the safety director, other employees (including management), or outside individuals (State Police and State employees in one instance).

The methods used for a successful audit vary according to the type and intention of the audit. The practices that might contribute to a successful individual incentive audit might make for an invalid and unreliable evaluation audit. In an incentive audit the purpose is to get people to buckle up for a reward in order to create a positive association with the behavior and to establish groundwork for a new habit. It is all right in this instance if people see others being rewarded and therefore buckle their belt to get the reward -- if they buckle up, the incentive program has served its primary purpose. However, if employees are kept in tedious lines, the value of the reward may certainly be cancelled out by negative feelings about the process. When employees are aware of an audit taking place and consequently buckle their belts, however, utilizing the audit for purposes of collecting baseline data will result in highly misleading figures in most cases.

Companies are looking at the success and effectiveness of programs in several ways: (1) auditing for increase in safety belt use; (2) looking at "saves" since program inception; (3) looking at the costs of motor vehicle accidents pre and post-program.

It appears that unobtrusive, random audits conducted possibly on a monthly basis along with looking at "saves" (and perhaps an estimate of savings on a "per save" basis) is the most workable means of evaluation that can be considered as part of this effort. A cost benefit analysis is beyond the scope of this project;

Further, due to the random nature of accidents it is a questionable procedure at best to try to track monetary gain in a program's first year or two.

All of the programs visited are using audits in one form or another to collect use data for purposes of evaluating how well their program is working. All of the companies can be said to be using random audits in that the audits do not purposely focus on any special group of employees, leaving others out, and they are not attempting to look at the use of all employees all of the time either. Utilizing the samples, the programs are attempting to ascertain how well their effort is working toward meeting the specific goal or the goal of "as good as possible" that they have set for the effort. Those companies with group incentives campaigns have a much more lively atmosphere about their audits -- employees are also involved as a group force in reaching the prescribed goals of the program.

Promising Approaches

During the site visit phase of data collection as well as through responses of the Delphi group, PSS noted a number of approaches to specific program components which appear to be promising approaches within their program settings. A number of these approaches were cited by employees as having made a difference in their safety belt use habits. The majority of the approaches appear to be potentially transportable to other settings and other groups of employees. Appendix B contains some illustrative materials on promising approaches which may be helpful in transfering the concepts.

Management commitment. Management commitment was demonstrated in a variety of successful ways across the sites visited. Some of the most promising approaches included the following:

1. At several of the effective programs the entire "chain of command" stands behind the safety belt use mandate (and other safety standards). At Laughlin the Base Commander is at the top of the chain, and he will hold squadron commanders accountable for safety, who will in turn hold their people accountable for safety records.

   At Illinois Bell, supervisors participate in the enforcement of all safety standards, including safety belt use. Evidence of this high level of involvement is supported by the following excerpted bulletin published by the District Manager of Corporate Safety and sent to all managers and supervisors:

   > Managers and supervisors with excellent safety records continue to tell us they consistently do the following things:
   >
   > - They clearly communicate established safety standards to all employees.
   >
   > - They make certain that each employee knows how to perform safely and can do so.
   >
   > - They make frequent observations on the job, and of the employees' driving skills.
   >
   > - When they observe employees performing as desired they reinforce this behavior by immediately commending them, and documenting the observation.

- When they observe employees performing in an unsafe manner, they correct them immediately, make sure they know the right way to perform, and record the infraction.

- When their subordinates persist in violating safety practices, progressive discipline is used...

2. Management demonstrates commitment to the program by taking employees "off the line" to view films, attend presentations, etc. Teletype Corporation showed their commitment to belt use (and greatly impressed the employees by their commitment) by having the employees view the film "Dice in a Box" on company time. This represented an expenditure of a sizeable amount of money on the part of the company; however, a number of "saves" reported since the program inception indicate that the initial expense may be readily recouped if "saves" are used as a measure of cost savings. Teletype employees have also seen the film "Room to Live".

   AT&T, at the time of the site visit, had mandated that all employees would see "Room to Live" on company time at Illinois Bell.

3. In several companies management is highly encouraged to set an example of safety belt use to employees. In one company where company officers were observed not wearing belts, they were personally contacted by the Vice President of Personnel.

4. Top management is highly visible at safety belt program functions such as incentive reward events, audits, etc. at Berg Electronics. The Safety Director and other top level management are among the auditing team and are on hand to greet employees as they drive into the main gate on audit days. This approach has been noted at other companies and is cited by employees as being an important aspect of the incentives component.

5. At Laughlin Air Force Base, any person found not wearing safety belts during a safety belt check will receive a personal letter from the Base Commander. The letter encourages individuals to wear belts and points out the benefits of the live-saving device. The Safety Division immediately forwards a letter to squadron commanders when a person is observed not wearing belts in government motor vehicles. Letters to employees from top management -- explaining the program, commending use, cautioning of the consequences of non-use -- have been very effective motivators in several other programs.

Incentives. The incentives components of effective programs used a variety of approaches. Some of the most promising elements included the following:

1. Teletype Corporation gave employees incentive rewards for individual observed belt usage -- and an extra reward for employees who had previously received a reward.

2. The Arkansas Highway Safety Program networked successfully with McDonalds for burger coupons for Teletype employees in exchange for public image value as well as some free marketing information for McDonalds (they were able to track the cashing of coupons by franchaise location). The General Motors Technical Center was able to work out a similar arrangement with Wendy's hamburger chain so that they might provide individual rewards for their employees.

3. Berg and GM successfully used group incentives to raise the wearing rate among their employees. At Berg, peer pressure was successfully utilized by giving individual, visible rewards to wearers (buttons, corsages) so that employees would be able to tell who had contributed to the group goal that day by wearing their safety belt.

4. GM rewarded group attainment of incremental goals with a drawing for a new automobile. The lottery tickets are pledge cards of employees who have promised to wear safety belts. Pledge cards are a means of touching individuals where individual incentive reward is not possible or desirable.

5. At Laughlin Air Force Base individual belt users are not rewarded with a prize, but are rewarded with a chance to have their name drawn for monthly award of two family dinners: one for the officers' club (or $20 for civilian equivalent) and one for the enlisted club. Other rewards include one $10 certificate from the credit union and a pen and pencil set each month.

6. Laughlin Air Force Base utilizes some important intangible rewards for individual belt use. The squadron may give preferential treatment (e.g., front door parking privileges) to users. All of the names of monthly audited belt users and the winners of prize drawings are put up on the base bulletin board and a copy goes to each squadron commander, along with names of nonusers. It is good to be on the users list, but bad to be on the other list! An individual's name is selected frequently to be put up at the front gate on a special sign board, acknowledging that person as a belt user.

7. Berg Electronics involved employees' families in the group incentive campaign to get employees to wear belts off-the-job. A letter was sent to the families along with a catalogue of gifts, one of which the family should elect should the rate required for reward be attained. Gifts were of approximately $15 value -- enough to get families motivated to remind the Berg member of their family to buckle up!

8. Little prizes given for individual use present an opportunity to repeat the belt use message and to send the message home with employees. Key rings, car deodorizers, etc. are used to reiterate the importance of safety belts.

Mandate/enforcement. The programs visited represented a whole range of involvement in the mandate/enforcement component area. All of the companies have mandated safety belt use for on-the-job driving. At a couple of sites the mandate does not impact employees at any significant level, as a minimum number of people drive on-the-job. At one company with a large motor pool, the mandate/enforcement is the hub of the program.

1. At Illinois Bell Telephone the corporate mandate states that not only are people responsible for wearing belts while driving on-the-job, they are additionally responsible for making sure that all passengers are belted as well.

2. At Laughlin Air Force Base the enforcement and incentive programs are combined: random, spot-check audits conducted two or three times per week serve the dual purpose of auditing for enforcement purposes and auditing for incentive purposes.

3. Illinois Bell has a motor pool of approximately 600 vehicles which operate out of the motor pool garage. As people exit the garage they go up a ramp past a guard's shed. The District Safety Manager goes up the ramp and watches drivers enter and exit the facility. If anyone in the company car is not wearing their belt he stops the vehicle and obtains their identification number(s). The non-wearer receives a letter from the Corporate Safety Office and his/her supervisor is advised. The goal at Bell is 100 observations per week. All officers and department heads receive a memo stating the weekly wearing rate.

4. Supervisors at Bell can make positive or negative observations of employee belt wearing behavior as noted in the Management Commitment section above. This process is formally conducted during a once yearly road test as part of the company's accident prevention plan.

5. When non-use of safety belts is observed at Laughlin Air Force Base the name of the non-user is sent to his/her squad commander. The commander will in turn send the non-user a letter of reprimand, order him or her to a driver improvement course, or take away on-base driving privileges, or other disciplinary measure. For a first offense, a written warning is usually the practice. However, a subsequent citation within a six-month period sill result in suspension of on-base driving for 30 days.

Recordkeeping. The vitally important function of recordkeeping is aided by the following promising approaches at effective program sites.

1. At Laughlin Air Force Base a formal statistical analysis is conducted every quarter by the Safety Office. They look at all motor vehicle accidents and other safety-relevant statistics to see where problem areas lie. Each week the safety director shows an "Operational Mishaps" table to the Wing Commander. Each quarter a safety meeting is held to establish policy, goals and objectives. Safety belt use data are collected for both on and off-the-job motor vehicle accidents.

2. At Laughlin a cost assessment is made for every motor vehicle accident where level of injury was of significant enough level to make it a "reportable" mishap.

3. Illinois Bell has in place a computerized recordkeeping system which enables easy assessment of the role of non-belted motor vehicle accidents in company expenditures for on-the-job incidents. Motor vehicle accidents are easily selected out of the pool of cases. Belt use is routinely recorded along with degree and type of bodily injury, lost time, etc. All non-occupational injuries which arise from a single incident and result in death or one or more workdays lost are reported and in the system. Various types of summaries are computed at set time intervals for between-company, between-unit, and other comparisons within the Bell System. Appropriate reports are given to the various levels of accountability.

4. When an on-the-job motor vehicle crash occurs at Bell, the employee's supervisor calls the safety department and makes a verbal accident report by phone to clerks trained in this function. The clerk fills out the appropriate form for subsequent entry into the data system.

5. When an individual is missing work he or she calls the supervisor and explains the absence. Absence figures are recorded along with the reasons for the time off -- injury or illness, type of injury, etc., at Bell Telephone.

6. Teletype Corporation has computerized access to both on and off-the-job accidents with documentation of injuries and their causes. Records are reviewed regularly (at least once per year) to determine major safety problems on and off-the-job so as to best target efforts to alleviate them. The collection of off-the-job belt use data enabled the Safety Director at Teletype to see the high correlation between injury and non-use of safety belts.

7. Berg Electronics conducts an accident investigation on all reportable on-the-job incidents. The accident is verbally recreated, and it is determined whether it was preventable or not. The employee involved in the incident is part of the investigation team. The investigation includes an examination of the role belt-use or non-use has played. Findings are posted so that others can learn from the accident.

Education. Educational approaches that were seen as contributing significantly to program success included the following:

1. The movie, "Room to Live" was shown at a monthly safety meeting to employees at Berg Electronics. The level of interest in the film was so high that employees asked if they might bring their families to view the film after work hours. As the first family showing proved to be so popular, several showings of the movie were necessary. "Room to Live" was cited by many employees at Berg and Teletype as a key element in their decision to use belts.

2. State Police officers giving presentations on belt use at Teletype and Berg have been cited by employees as highly effective in motivating belt use. Employees are very impressed by the experience of the officers, many of whom testify that in their many years on the force, they have "never unbuckled a dead person".

3. Illinois Bell has purchased and installed video equipment and is making eight new films on safety for use in employee safety meetings. At least two of the films feature safety belt use; one is a testimonial for off-the-job use by an employee who was involved in a crash while driving with her children in the car.

4. A Serious Incidents Committee investigates and documents on-the-job motor vehicle (and other) accidents involving employee injury. The resulting findings are posted on bulletin boards and given to supervisors throughout the entire company at DuPont so that all may learn the lessons of the incident. In the case of a motor vehicle accident belt use or non-use would be included.

5. At Laughlin Air Force Base anyone new on base gets a special briefing during their first 10 days. New personnel see the film, "Room to Live", are apprised of the belt use mandate, and sign belt use pledges. Indoctrination is seen as very important in order to establish the belt use behavior.

6. At Teletype Corporation employees attend a monthly safety meeting with their supervisors who advise them of both on and off-the-job safety issues. The topics and materials are given to supervisors by the Corporate Safety Department in the form of "Monthly Safety Huddles" -- packets of materials to be passed out and discussed at the monthly meeting. Some of these packets have contained educational safety belt materials aimed at off-the-job belt use. Laughlin Air Force Base has a similar approach with its Monthly Safety Kits which contain educational safety materials, including safety belt use.

7. Berg's monthly employee safety meetings rely upon employee participation in two senses: employees conduct the presentations and employees vote on the content of the meetings from a pool of options on a yearly basis.

8. Teletype Corporation featured rides on the Safety Belt Convincer, at a company-sponsored picnic for employees and their families. The Convincer is a sled type device which simulates the impact of a low-speed belted crash. Pictures were taken of some of the employees as they rode the Convincer. The resulting photos were impressive in that they showed employees' features distorted by the force of the "impact". These pictures were placed on bulletin boards on-site at Teletype. The picnic was chosen as the proper setting for the Convincer, as it was off of company property and not on company time, thus cancelling any liability on the part of the company in the extremely rare chance that someone might be hurt.

9. Employee testimonials are used by several of the companies for educational purposes to teach employees about safety belt effectiveness at a very personal level. Illinois Bell has begun a "Saved by the Belt" club in which employees report incidents in which they were saved from serious injury or death by using safety belts. The testimonials will be used (as in the example noted above) to make teaching video aids, etc.

10. Wrecked cars have been hauled to the Teletype facility grounds so that employees can see what happens to autos in crashes. They can get some idea of what might (or did) happen to unbelted occupants.

Promotion. A varied promotion program with a wide range of techniques and activities to focus employee attention on belt use appeared to be the most successful approach to promotion. The following approaches appeared to be contributing highly to the promotion aspect of effective programs:

1. Berg got a high level of visibility and attention by kicking off its campaign during the Easter season and having employees greeted by a huge white rabbit for the first belt use audit (the Safety Director played the part). The local media covered the festivities. Subsequent audits held to the colorful theme idea with management taking various roles compatible to the various seasons: a giant turkey was the main attraction at Thanksgiving; the Hulk was on hand around Halloween, etc.

2. A large barometer was used at the plant gate at Berg to show the plant's progress toward the attainment of the group incentive goal for safety belt use.

3. One of the most outstanding features of promotion at Teletype is the close contact and open communication about the program between the program people and the employees. The program coordinator has a on-on-one rapport with many of the employees "on the line", remembers who has been wearing or not wearing belts, and generally promotes belt use in an agreeable and personal way. The State Highway Safety Office's representative who serves as a co-coordinator also knows many of the employees by name and does an excellent job of communicating the intention and value of the program and of buckling up.

4. Laughlin Air Force Base had a contest for the best safety belt slogan as part of a special campaign. Winners were rewarded by the Wing Commander. Names were put in the Boarder Eagle (the base newspaper) along with the results of the contest -- the best safety belt slogans.

5. Bulletin boards and "seatbelt Safety Bulletins" are used at Teletype to spread the safety belt message and to feature real accounts, complete with photographs and photomontages, of employees who were saved by the belt. These communicate at a very personal level the reason behind the program and why employees should use their safety belts.

6. GM posted a specially hired employee at a gate every day to conduct audits. Interestingly, her presence and her auditing function served more of a purpose than the apparent one of tracking baseline data: it kept the program and belt use on the minds of employees on a daily basis, according to employee interviews.

6. At General Motors daily bulletins to employees show the goal, average usage to date, and usage for the last two audits. Memos are sent out to employees at Teletype to tell them of upcoming events in the safety belt program. These memos are signed by the Vice President/ General Manager.

8. In several companies management has involved the union in planning/ implementation activities of the safety belt program. Union involvement and good working relations have served an important promotion function in that union representatives spread the word about the safety belt program to their membership. Union cooperation and endorsement was seen as a vital ingredient in program success.

Outreach. Outreach efforts which were seen as enhancing the total safety belt program at the participant companies included:

1. News releases prepared by several of the companies with effective programs keep the media informed of campaign activities and special events. GM drew a lot of media attention and coverage with its employee auto "sweepstakes". An additional touch of drama was involved in that media representatives were present as the Vice President conducted the drawing for the winner of an automobile in his office. Such media coverage serves also as a secondary, intangible incentive for employees to use their safety belts.

2. Families have been involved in film showings of "Room to Live" and opportunities to ride the Convincer at a company picnic.

3. Community merchants have been involved in Teletype's and GM's incentives efforts by providing rewards (burger coupons) for employee belt use. Such community involvement aids in spreading the effect of the program, decreases program costs, and increases the possibility that local newspapers will feature the safety belt program.

Auditing/evaluation. Some of the more promising approaches to auditing for purposes of evaluation include the following:

1. Audits at Illinois Bell Telephone are unobtrusive in that the auditor cannot be seen in time for an employee to buckle up. Evaluation and enforcement functions are served by the audit.

2. Laughlin Air Force Base conducts short, random audits in any location on base. Auditing of this nature is conducted two or three times per week by one individual from the Safety Office. He places himself in strategic spots where drivers are not likely to have much advance warning of the audit. The short time span insures that word does not get out about the audit and/or traffic does not back up on base. The Laughlin audit serves several functions: evaluation, enforcement, and incentive.

3. Teletype conducts unobtrusive audits apart from their individual incentive audits. In the unobtrusive audit, baseline evaluation data are collected at all four gates of the plant during two shifts at closing time. Motor vehicles are not stopped in the process, but occupants are observed as the vehicle passes the check point. The unobtrusive audits are conducted every three months.

4. Several companies are examining cases where employees lives were saved by the use of the safety belt (or serious injury prevented) since program inception as a means of calculating an estimate of cost-savings attributable to the operation of the program. Figures estimated in this manner are being utilized to convince upper management of the efficacy of the program and to justify further expenditures to motivate employee belt use.

Model/Manual Development

The model developed for this effort represents a synthesis of the programs reviewed, the results of the experts' opinions from the Delphi Process, and PSS's own judgments of what an employee safety belt program should look like. The model is not, however, intended primarily to be used as a guide for companies in establishing safety belt programs -- the manual product for this effort, "Employer Guide to an Effective Safety Belt Program", is oriented toward that important need. Rather, the model is to be used as a blueprint for NHTSA and other relevant groups to chart the future development of employee safety belt program efforts. In particular, it should serve as a vehicle for a field-based research and demonstration project, a recommended next step for NHTSA's employee safety belt program.

The model is based on several assumptions. It assumes the development of an employee safety belt program in an organization that occupies the mainstream of American business and industry -- medium to large corporations and government agencies (i.e., with more than 500 employees) involved in the production or delivery of goods or services. The model is not directly applicable to small businesses, although many of the major elements of the model could be adapted without major modification to small business. The model is presented in a somewhat more chronological, sequential fashion than the manual, beginning with the planning and implementation of a research/demonstration project in a single, fairly representative, site.

As presented, the research component is closely integrated with the program itself, the demonstration component. Finally, contrary to the tone of the manual, the model assumes that several significant questions remain unanswered in the employee safety belt field and that a research/demonstration program offers the most effective (and cost-effective) means of providing that crucial information.

Planning

Operations. At the outset, the company should establish a committee of employees (management and labor) to develop and oversee the employee safety belt program. This committee should: (1) address union concerns; (2) carefully select an imaginative, enthusiastic, and respected director of the program, (3) develop goals and objectives of the program; and (4) outline the major elements to be included in the program, assuming that the program will be comprehensive, i.e., including all the major elements of the employee safety belt program.

Research. The planning process described above should be observed by the research team to provide a description of the process, noting problems and issues that arise and how these are effectively resolved. At the same time, the indicators of employee safety belt usage and attitudes should be collected, through (1) brief surveys of employees, and (2) the conduct of unobtrusive, random-sample audits of safety belt use. Finally, the research team should formulate a list of specific research questions to be answered including the following:

1. What are the most effective components of the program, as judged by employees and by usage data?

2. What educational approaches are most important?

3. What techniques are effective in spreading safety belt use to employees' families and to the community at large?

Implementation

Operations. The program should be kicked off through a series of attention-getting events:

- Letters from management to employees explaining and endorsing the program

- Inclusion of safety belt standards and disciplinary process in the company policy manual and effective communication of the policy

- A lecture/film presentation featuring a talk by State Police

- Dissemination of printed educational materials to employees
- Press releases/media coverage of the kick-off of the new program

Research. The research team will observe and record the effects of these initial events through surveys and audits designed to assess the relative contributions (positive and negative) to employee safety belt use and attitudes.

Program Components

Given that employee safety belt programs appear in the main to be quite effective and worthy of dissemination, the particular shape and direction that such programs should take comes into question. First, in a general sense, the programs observed reflected a varying balance of the major approaches to increasing safety belt use. Although most of them included several elements, they tended to emphasize one or two elements (incentives, enforcement, etc.) while paying less attention to the other facets. The broad result emerged from the Delphi process: the experts tended to view most elements as helpful to an employee safety belt program, while typically favoring one or two components over the others (although there was not clear consensus about which one or two elements were most important). PSS's own view on this matter is that a comprehensive, well balanced program is most effective. A company should, without straining its resources, develop a program which includes virtually all of the program components noted below at a fairly strong level.

It is also very important to program success that programs be continuous efforts and seen by employees as such. One-shot interventions are not considered to be effective over time.

PSS bases its recommendations of safety belt program components upon site visit experience and Delphi process results. Positive Incentives and Mandated Use/Enforcement components were seen as having equal weight in program success by the Delphi group (mean weights). Management Commitment was viewed as third most important. Recordkeeping, education and outreach were seen as nearly equal, with education and outreach receiving identical weight. Communications and auditing/evaluation were also close in their assigned weights.

The opinions/experience of the experts was compared with PSS's experience of the programs visited in industry, and the prioritization of components was changed to to reflect the on-site experience. Management Commitment is seen as at least on a par with Incentives and Mandate/Enforcement because without it neither of the other two components can be effectively carried out. The Delphi panel had given Management Commitment a slightly lower rating than the other two components. PSS has placed Management Commitment as the top component in making a program work effectively.

PSS viewed the Communications (on promotion) component as having a higher weight in program success than the Outreach component. Delphi participants had given Outreach a higher rating -- mean weight 1 percent higher. "Communications" was changed to "Promotion" as the name of the component by PSS as it was seen as better reflecting the total intention of the elements comprising the component.

PSS's final list of program components are listed below:

Major components. Major program components -- those considered to be of the highest level of importance to program success -- include:

- A strong and active commitment on the part of management to the safety belt program.
- A clearly defined and well enforced policy of mandatory safety belt use on-the-job
- Positive incentives for employee safety belt use.

On-the-job programs work well when a mandated policy is augmented by positive incentives for use.

Off-the-job programs work well when they are based upon positive incentives to use and are complemented by a mandated policy for on-the-job use where appropriate.

Management commitment is vital to the success of any safety belt program whether its focus be on- or off-the-job employee safety belt use.

Support components. The components which provide a framework for the central thrust of the program include:

- Systematic recordkeeping of motor vehicle accidents that includes the use or non-use of safety belts.
- A comprehensive safety belt education program.
- Ongoing program promotion within the company.
- An outreach effort to spread the safety belt effort beyond the workplace -- especially to the family.
- An auditing procedure to evaluate the program's effectiveness.

Major Research Issues

Within the demonstration setting, the relative contribution of program components to the success of the whole program would be evaluated through surveys and audits of employee-recipients. Some specific research questions which might be part of the total evaluation research effort include:

1. What programmatic approaches are most effective in maintaining long term use of safety belts? Little is known about the long-term effectiveness of incentive efforts in motivating safety belt use, for example.
2. To what degree is off-the-job use emphasized in the program, and what elements or techniques are the most effective in promoting off-the job use?
3. What outreach approaches are most effective in promoting use beyond the industrial setting -- to the family and the larger community?
4. What aspects of the recordkeeping system prove to be the most useful in terms of program planning and decisionmaking?
5. How might the program most effectively interface with or complement existing related efforts within the company, such as health promotion?

Employer Manual

Based upon the successful program components and promising approaches identified in the research findings documented above, PSS developed a manual which would share the insights on successful programs with employers. The product, "Employer Guide to an Effective Safety Belt Program", is included as Appendix A of this report. Because the manual guidelines are based upon components and approaches which are contributing to successful programs in existence now, an employer who utilized the guide to design and implement a program at the worksite increases the likelihood that the program will yield successful results in increased safety belt wearing rates among employees.

Health Promotion/Wellness Programs Needs Assessment

The objective of this portion of the project was to look at the possibility of health promotion/wellness programs in industry including a safety belt component within the context of existing employee health promotion/wellness program parameters. Safety Department-based programs have been well researched and documented in Phase 1 and in a large part of Phase 2 of the Employer Safety Belt project. Materials and guidelines geared to the safety belt program experience of the safety area have been created.

The goal of this task was to get an idea of whether or not a wellness program is a viable, important, and receptive resource to the establishment of safety belt program modules. In order to do this it was necessary to look at the safety belt module from the viewpoint of health promotion/wellness program decisionmakers and practitioners.

Background/Literature Review

As part of the needs assessment task a review of current literature was conducted and contacts made with relevant groups and individuals for the purpose of studying the major objectives, processes, and philosophies involved in wellness programs as they exist today. The literature review for this task is included in the Bibliography at the end of this report.

This sub-section documents the current philosophies, objectives and processes of health promotion/wellness programs and, in their light, looks at the face validity of including safety belt use as a component.

At the present time there are between twenty and thirty health promotion/wellness programs in operation in industry which can be called "comprehensive" programs -- those offering an array of risk reduction components to employees on an ongoing basis. The health promotion process is generally initiated by administration of a risk assessment instrument and subsequent recommendation to an employee to various program components in order to decrease his or her level of assessed risk. Currently, approximately one-half of one percent of companies with 100 or more employees are utilizing risk assessment of the nature described here.

Tremendous cost to business and industry are associated with chronic disease and accidental injury of employees. The costs are particularly steep in the areas of medical care, lost productivity and absenteeism. The objective of many employers is to save these funds by preventing the reasons that they would ordinarily be spent. Health promotion programs represent a method of chronic disease prevention utilized by an increasing number of employers today. Metropolitan Life Insurance Company surveyed 800 companies and found that 34 percent of them have some form of health promotion/education program in place.

A recent journal article by Ann Kiefhaber of the Washington Business Group on Health cited two major reasons that employers are designing and implementing employee wellness programs: economics and opportunity (Kiefhaber, 1983). The economics factor has to do with the employer outlay on group health insurance premiums of $77-billion in 1981; $12.6 billion paid in Workers Compensation in 1978; and a loss in 1978 of 496 days due to illness and injury. As was amplified in Phase 1 of this project, many employers pay direct costs out of pocket as they are self-insured, and direct costs represent the "tip of the iceberg" vis-a-vis the many times larger impact of indirect costs associated with employee injury and illness.

In the past, most health education/promotion effort in industry was centered around occupational health hazards, first aid, etc. As health care costs have risen steeply over the past several years, however, interest has risen in health promotion in the workplace. Where it was sparcely and somewhat sporadically addressed by a variety of professions and corporate departments, it is now beginning to approach a combination of art and science aimed at systematically and comprehensively addressing risks to employee health.

The expanded health promotion focus in the workplace has been motivated by forces outside of industry as well. In 1978 the President's Committee on Health Education recommended that industry begin implementing and evaluating health promotion efforts for their employees and employee families. The recommendation was based upon the conclusion of the Committee's study of the current status of health education that employees who strive to prevent disease and accidents and are educated about health are an asset to their employers, families, the nation -- not to mention to themselves (Ware, 1982).

Life and health insurance companies began to look at the potential positive impacts of industry-based health promotion programs for employers. The Center for Corporate Public Involvement of the American Council of Life Insurance, Health Insurance Association, formed an Advisory Council for Health which met in June 1978. The purpose of the meeting was to aid the association's Clearinghouse on Corporate Social Responsibility in setting priorities for the insurance industry in health promotion and education. The group was comprised of outstanding leaders and experts in the areas of health education/promotion. Among them were Jonathan Fielding, Art Ulene and Robert Johnson, past President of the National Center for Health Education (Karson, 1982).

The National Center for Health Education has named as its two highest priority items for the decade as (1) health education in educational institutions and (2) health education at the worksite. Clarence Pearson, in a personal communication, outlined the Center's upcoming plans to act as a major resource to small business and industry in the health promotion area. Companies will be able to dial a toll-free number where they can obtain materials, referrals to community resources, and referrals to professionals in the health promotion/wellness areas relevant to their particular needs.

The Office of Disease Prevention and Health Promotion of the Department of Health and Human Services has been highly involved in the development of resources for health promotion in industry. In 1979 ODPHP sponsored a National Conference on Health Promotion Programs in Occupational Settings, a major milestone in the creation of a network of experts in the field (Ware, 1982).

In order to stimulate company executives to implement health promotion programs, the Health Education Committee of the Health Insurance Association of America held an industry-wide conference on health education and health promotion in Atlanta in 1980. One-hundred executives from business and industry attended the meeting.

The National Heart, Lung, and Blood Institute of the National Institutes of Health has actively networked with Blue Cross and Blue Shield Associations and industry across the country to get hypertension detection and follow-up programs into the workplace (Rocella, 1982).

Groups such as the Washington Business Group on Health, the American Hospital Association, the American College of Preventive Medicine and the Society of Prospective Medicine have made vital contributions to the field of health promotion/wellness in industry and serve as ongoing motivators and sources of information, materials and support for programs in the workplace.

Programs of health promotion/wellness in the workplace are being designed and implemented by a variety of sources:

- Individual companies are designing their own programs, either using their own talent or with the aid of consultants in the health promotion field, (e.g, Johnson & Johnson's LIVE FOR LIFE program featured in Appendix F of this report).

- Consulting companies are designing, packaging and marketing health promotion programs; e.g., Human Resources Institute, Morristown, New Jersey.

- Universities such as University of Wisconsin, Stevens Point, are designing and implementing programs for their students, then passing on their experience and materials to industry;

- Hospitals are designing and marketing their own programs -- Lifewise of St. Luke's Hospital in Kansas City, Missouri, is an exemplary program of this type;

- Large corporations are designing programs for their own employees and marketing the successful program to other corporations -- Control Data Corporation's Staywell program is an outstanding example.

- Insurance companies are designing their own programs and then selling them to industry -- the SHAPE program is the SAFECO (insurance company) Health Action Plan for Everyone.

- Insurance companies are creating incentive programs for their clients' employees to adopt healthy lifestyles/behaviors. Employees are paid for staying well by receiving rebates, deferred compensation or other methods. Mendicino County Stay Well Program and Blue Cross of Oregon's Health Chec programs feature insurance incentives (Webber, 1982).

Health promotion and wellness. Promoting health is a new focus in the United States, highlighted with the publication of Healthy People, the Surgeon General's report. In this era of high technology devoted to the curing or ameliorating of disease, most of the infectious diseases that were the primary causes of death at the

turn of the century are well under control. The focus of a growing number of health professionals and other concerned persons is on the chronic diseases which have become our number-one killers -- those diseases which are directly related to daily lifestyle decisions and practices.

The following definition of wellness and health has been formulated by Don Ardell, Ph.D.:

> ...high level wellness is a lifestyle-focused approach which you design for the purpose of pursuing the highest level of health within your capability. A wellness lifestyle is dynamic or ever-changing as you evolve throughout life. It is an integrated lifestyle in that you incorporate some approach or aspect of each wellness dimension (self-responsibility, nutritional awareness, stress management, physical fitness, and environmental sensitivity).
>
> Health is also a dynamic state, and is an outcome of the wellness lifestyle, Health has three components or levels of freedom, as I see it: the physical, the emotional, and the mental. (Ardell, 1982)

These definitions represent a most hopeful, high level of outcome. Most of the programs in industry, while possibly embracing these outcomes as ultimate goals, have as their underlying motivation the prevention or amelioration of disease. They are primarily aiming at cost-savings due to less illness and injury in the work force. As time goes on, however, some companies are finding that they get more than a defense against rising costs as enhanced health/wellness delivers outcomes of the most positive nature: workers who are not only on-the-job more of the time, but are more productive when they are on-the-job, etc.

Rebecca Parkinson, Director of AT&T's corporate health promotion effort, defines health promotion as "a combination of educational, organizational, and environmental activities designed to support behavior conducive to the health of employees and their families" and lists components of successful health promotion programs as follows: (Parkinson, et al., 1982)

- Risk Assessment
- Risk Reduction
- Environmental and Social Support
- Evaluation

In brief, individual areas of health risk are identified and explained to program recipients. Opportunities are offered to the employee to improve his/her level of risk. A wellness-supporting environment -- a healthy corporate culture -- is created as a complement to program components. The results of the program are evaluated.

Risk assessment. The idea of identifying and minimizing health risk is clearly central to the intention of health promotion/wellness programs from a preventive medicine standpoint. In the case of today's biggest killers and cripplers, multiple risk factors come into play. Chronic diseases such as cancer, cardiovascular disease, pulmonary illnesses, and accidents are influenced by many risk factors including cigarette smoking, alcohol use, level of exercise, hypertension, stress, and lack of safety belt use (in the case of motor vehicle accidents). Cigarette smoking is associated with 345,000 deaths per year -- primarily due to cardiovascular disease and lung cancer.

One-pack-a-day cigarette habit is related to 50 percent higher rate of illness, hospitalization and absenteeism. Hypertension is related to greater risk of heart attack, stroke, and kidney disease. Associated direct and indirect costs of hypertension are estimated between $8 and $15.9-billion per year (Thomas, 1981).

There are a number of instruments available which can be called "Health Risk Appraisal" (HRA) or "Health Hazard Appraisal" (HHA) instruments. Most health promotion/wellness programs in industry, especially those of a comprehensive nature, begin their process by administering a HHA/HRA instrument to employees. The objective of HHA/HRA administration is to measure the relative level of risk and to pinpoint the areas of specific risk to the employee's health. The computerized instrument prints results which contain "prescribed" counter-measures for the employee. The purpose of the testing, then, is not so much to diagnose illness (although some appraisals may purport to do this) but to alert individuals to disease risks and help them learn how to avoid or minimize them (DesBarres, 1982).

The HHA/HRA instrument provides an excellent means to collect, analyze, and present health risk information, engage the attention of the employee, and in some cases effect behavior change. Most of the instruments used in industry-based and hospital-based programs today contain a group of core questions -- either alone, as a section of a larger instrument, or interspersed with other questions. The core group contains those questions vital to computing the prospective health profile. Medical screening, endurance, endurance testing, and in some cases disease detection may be included as part of the HHA/HRA process. (Beery, 1981). Depending upon the scope of the existing program, some instruments go a step further and attempt to assess health (i.e., level of positive state of well-being) with such sub-tests as survey of eating habits, purpose-in-life inventory, and other inventories of this nature. (DesBarres, 1982).

Core questions deal with such data as age, sex, height, weight, race, blood pressure, whether a parent died before age 60 of heart disease, and other family history/client health history items, number of miles driven per year and safety belt use, disease detection/prevention practices, arrest record, etc. (Beery, 1981).

The National Health Information Clearinghouse lists 29 health risk appraisal instruments currently available to the public. Some are available through universities, hospitals, medical centers, insurance companies, and private consulting firms.

Risk reduction. After administration and scoring of the HHA/HRA clients are apprised of their health risk level through an appraised age score (which can be compared to their chronological age) and an achievable age. Much of the concept of the achievable age is based upon the premise that an individual's level of health can be maximized by adopting healthy lifestyle behaviors. Such studies as the 1972 Alameda study yielded results which shows strong correlations between level of health and lifestyle behaviors. Achievable age, then, is dependent upon willingness and ability to make the recommended changes or "prescriptions" in the client's life. As chronic disease is so highly associated with chronic mis-behavior, the prescriptions are generally of a behavioral or lifestyle nature.

"Prescriptions" for change fall into categories such as fitness/aerobics recommendations, nutrition, smoking cessation, high blood pressure control, stress management, weight reduction, alcohol use, safety belt use, etc. A

computer print-out of an employee health profile might advise the client that he/she could moderate an area of risk by effecting a particular change. In the safety belt use area, a person reporting low level or no use might receive a print-out message that would essentially advise that safety belts should be worn and provide factual information about the efficacy of safety belt use in motor vehicle accidents. However, in the area of cigarette smoking, a person who smokes would be advised to quit and would be referred to the company Smoking Cessation Program.

Dr. Larry Green in his address to the 1983 Society for Behavioral Medicine Conference in Baltimore listed risk areas in priority of concern for industry as follows:

1. Employee Assistance Issues (alcohol/drug abuse and family problems)

2. Hypertension Detection and Control

3. Smoking Cessation

4. Fitness

He stated that he would have put Seat Belt Education in fourth place but for the popularity of fitness with both industry and employee-recipients. Employers prepare behavior change programs for employees across the major risk areas according to their level of health risk priority; in many cases the popularity of an offering would be highly considered due to the fact that program participation is strictly voluntary in most companies.

Each risk area and its associated behavior change program represents a science and an art in the process of growth and refinement. A separate piece could be written about each area of risk and remediation: smoking cessation, high blood pressure control, stress management, fitness, weight reduction/nutrition, safety. The most comprehensive and highly evolved programs have taken the state of the art in each risk remediation area and packaged it to fit their particular employee population, physical situation, etc. There are a number of program packages on the market which are fairly adaptable to individual company needs; they are available through private consulting firms, hospitals, etc. Johnson & Johnson's LIVE FOR LIFE program represents an original company-designed and implemented program which reflects a high level of the current state of the art. Appendix F features an analysis of LIVE FOR LIFE's process and relates it to the safety belt issue.

Control Data Corporation, which creates and markets the Staywell program has developed behavioral change interventions using an on-line computer software package. PLATO offers courses in the areas of nutrition, fitness, weight control, stress and smoking. PLATO makes it possible for Control Data to tailor programs to fit individual needs. With the PLATO system the employee has a constant "therapist"; program combinations and permutations are possible; and as an employee's program evolves, it becomes more effective. The innovation of software for the health promotion/wellness programs represents perhaps the most sophisticated level of individualized programs available to date. (Sleet, 1983)

Incentives. A number of companies are "paying" employees in a variety of schema for practicing healthy behaviors. A study by the Harvard School of Public Health (Shepard and Pearlman, 1982) obtained information on 25 programs operated by 10 employers directed at smoking cessation, weight loss, exercise

and management of stress. They have cited evidence of the effectiveness and cost-benefit of some of these programs.

- Botsford General Hospital reimburses employees a $5 course fee if they complete the five-week course offered.

- Schwartz Meat Company pays two weeks extra salary to employees and spouse and one week extra salary to children who meet specific exercise aerobic goals weekly for six months.

- Sentry Insurance Company gives T-shirts and other prizes to walkers and joggers for covering 100-4,000 miles and to swimmers for 20-160 kilometers.

- Control Data Corporation gives participants points for limiting calorie intake, exercising, and attending weight loss courses. A group incentive program rewards each person with a cookbook if the group achieves its point goal over the nine weeks of the course.

- Speedcall Corporation pays all employees who refrain from smoking on-the-job a $7 per week bonus.

- Johnson & Johnson's LIVE FOR LIFE program rewards employees for activity points with LIVE FOR LIFE "play money" which is redeemable for LIVE FOR LIVE products: T-shirts, shorts, desk accessories, etc.

Environmental and social support. The workplace forms an individual's sole environment for a major portion of his day; and that environment is physical, social and emotional in nature. A company can be said to have a "culture" of its own. That culture can be such that it embraces, promotes and rewards healthy behaviors for employees -- in direct and subtle ways -- or the opposite. Unfortunately, the corporate culture, not to mention the larger culture, has tended to foster unhealthy practice: television urges people to eat lots of sugared products; billboards urge drinking of alcohol and smoking, etc. When a corporation turns its mind to becoming a health-promoting culture, it is a powerful force for positive change in its employees.

Some companies have begun to look at their environment to analyze health messages that they are giving to employees and, as a result, are changing menues in the cafeterias -- and going even a step further and noting calories of the entrees, etc. Vending machine selections are being changed from "junk" to nutritious food selections. Smoking is becoming "socially unacceptable" in the workplace in healthy corporations, and policies are being made which designate smoking and non-smoking areas. Companies are shaping and forming a "healthy company" image by promoting fun-runs; publicizing top management engaged in healthy behaviors such as exercise; and giving top billing to their health promotion/wellness program through special emblems, exercise clothes, etc.

Within companies which have implemented comprehensive programs of health promotion/ wellness there are emergeing sub-cultures of support groups in weight reduction, smoking cessation, exercise and stress management. Control Data's Staywell program features an on-line "support group" in its "Notes File" function, a kind of on-going graffiti whereby employees can exchange information and share their experiences. These support groups give employees a new sense of belonging and, therefore, a new motivation to embrace healthy activities and lifestyles.

"Healthy corporation is a comprehensive attitude about life at the worksetting and about the lives that worksetting influences", according to Willis Goldbeck and Ann Kiefhaber of the Washington Business Group on Health (Goldbeck and Kiefhaber, 1981).

Evaluation. Dr. Richard Morrison of North American Rockwell Corporation is quoted as having made the following statement about health promotion programs in industry:

> A healthier employee is a more effective employee. He contributes more when he is on the job, and because he's healthier he spends less time off the job. And to the extent the program reduces the occasions for replacing executives, it pays its way and nets incalculable dividends in moral and human hope. (Jacobs, 1981)

There have not been many studies on the cost-effectiveness of health promotion/wellness programs to date. Existing data point to programs to ameliorate the risks of smoking, high blood pressure and alcohol abuse as offering the best return on a company's money (Thomas, 1981). Charles Berry, M.D., cites figures such that a company will save $200 when one person stops smoking, $260 when one person controls his/her blood pressure, and when one reduces cholesterol by 20 percent, a $60 savings. He cautions that these figures are quite conservative (they are also approximately five years old) (Berry, 1981).

It appears to be generally agreed in the recent literature that there is great potential savings for employers in health promotion programs, but the benefits are hard to measure. It is quite well documented that smoking is highly related to cancer, emphysema, and bronchitis and that stopping smoking reduces the level of risk in these areas as well as days off from work and medical costs. Health promotion programs have been linked with increased employee morale and productivity but these are difficult items to quantify.

Most comprehensive programs are equipped very adequately to monitor individual behavioral change and results of program participation over time. However, due to the expense involved, few employers are devoting money/time to doing a true "bottom-line" look at economic benefits of their health promotion programs. They are measuring number of participants, changes in absenteeism and health insurance expenditures (Brennan, 1982). It is important to note that the data on chronic disease, its correlates to behavior and lifestyle are being more and more incorporated into the cultural belief system. It appears to be a "given" to a growing number of employers that "fitness pays". (Fielding,1979;1982)

> Admittedly, health promotion programs are not a panacea for rising health care costs. However, studies currently being conducted at major corporations such as Bordens, New York Telephone Company, Campbell Soup Company, Control Data, Johnson and Johnson, and Metropolitan Life demonstrate that a positive cost-effective relationship probably exists between worksite health promotion and critical factors such as absenteeism, productivity, disability claims, medical utilization patterns and overall morbidity and mortality experience. In other words, money put into health promotion programs is money well spent. (Brennan, 1982)

The Chrysler Corporation claimed to have saved $11,400 in one year from their voluntary hypertension program -- in direct medical costs. New York Telephone reported savings of roughly $215,000 during one year from their hypertension program (Thomas, 1981).

Relevant Concerns of Health Promotion Experts/Consultants: Interview Results

As part of the needs assessment of the health promotion/wellness program area, PSS sought the insights and perceptions of experts and consultants who not only represent research at the highest state of the art but also serve as gate-keepers to industry. Their views shape the state-of-the art as it is practiced in industry and otherwise.

Individual interviews with those persons who are considered experts in the area of health promotion/wellness, along with written and verbal comments from several expert consultants to the field, yielded a number of key points. The discussion below capsulizes the content of interviews and contacts and identifies major areas of concern regarding inclusion of a safety belt component in the health promotion/wellness program setting.

Belt-use as a health issue. All of the interviewees agreed that safety belt use is a relevant concern to health promotion/wellness programs. One respondent noted that it would fit in well with the concept of the "healthy corporation" which is gaining popularity. A belt-use program or policy would aid in creating an environment that supports and encourages healthy behaviors.

Another health promotion expert stated that safety belt use would be placed at #4 priority for business and industry regarding the health of employees -- except, he stated, for the high level of enthusiasm surrounding fitness.

It was also mentioned that safety belt use may be a good "foot in the door" for wellness programs in companies that might otherwise not consider health promotion efforts for their employees.

Awareness of belt use programs/efforts. There appeared to be a definite lack of information and awareness among the experts on what is currently being done in industry to promote safety belt use. The materials mailed as part of this activity in many cases represent the major contact these people have had with safety belt use as a program area in industry. Most programs have been directed by the Safety Departments of companies and, though experts agree that belt use is a health-related issue, it somehow represents an empty cell in their conceptualizing and planning for program components. This may directly relate to the communication and relationship between safety and health promotion/wellness in general, which in turn may relate to the seeming lack of knowledge on the part of experts of the existence of effective programs in industry.

Belt-use image. According to the comments of interviewees, belt use has a rather low key image, to say the least. The topic of "image" can be divided into several sub-categories for the purpose of discussion: image (in general); as it might be viewed by wellness program people; as potentially viewed by program recipients.

Concerning general image, it was remarked by several individuals that belt use *is not* "sexy", competitive, or medical; there is no industry associated with it -- nothing in the way of products -- it is not seen as merchandisable and self-contained such as nutrition. On a more negative note, one individual said belt-use has a dull/boring image with nothing sexy or heroic about it.

As it might be viewed by program people, it was noted that belt use has somewhat of a "it's no use; do-gooder/bound to fail image" (as, it was mentioned, smoking cessation once had). Relating to the program image as well as to awareness issues above, was the comment that program people's resistance to the area is not to the conceptual fit, but health promotion and wellness people have not seen how they can do something worthwhile with safety belts other than the repetition of reminders to use the device. A further comment in this area voiced the concern that companies may not have thought of safety belt use as a program component due to its very simplicity and that sophisticated program specialists may have a problem relating to safety belt use as area because of its apparent simplicity.

One expert said that he felt that the reason belt use had not been included in health promotion/wellness programs was due to the fact that it was regarded as a safety item. However, he felt belt use was an excellent area for wellness programs to address because "safety" has been neglected by these programs in his opinion.

Under potential-recipient image of the safety belt program area, several people touched on the voluntary aspects of health promotion/wellness programs. One person noted that the basis of communication and enrollment is attraction and hinted that people might not be attracted to a safety belt program component. This suggests a notion that most safety belt programs would have to be coercive and that there is no easy way to attract people to participate.

Program effectiveness and the "bottom-line". Effective programs, programs that work, etc. appear to be a natural concern for most of the experts. Several interviewees said directly that if decisionmakers in health promotion/wellness programs knew that safety belt programs would be effective, they would be willing to implement them. It is obvious that most people do not know that there are currently a number of companies that have effectively motivated behavioral change at a significant level in the belt-wearing rates of their employees. One interviewee stated directly that health promotion/wellness practitioners do not know about the existence of effective safety belt programs in industry.

A number of interviewees echoed concerns over having hard data on the impact of belt use programs. They maintain that economics is the bottom-line concern of program decisionmakers and corporate officers regarding the components of their programs. Companies want to know what cost-benefit they can accrue from a safety belt program. A need was expressed for information about the experience in industry with safety belt programs from a cost-effectiveness and cost-benefit standpoint.

Epidemiology/needs assessment. It was specifically mentioned by several experts that more of an epidemiological approach to motor vehicle accident injuries is needed along with more cost information. Employers, they said, would like to be able to look at their work force and determine potential impact of a safety belt program. For example, an employer has access to actuarial data that will tell him how many of 10,000 employees are alcoholics, diabetics, etc. Employers need the same type of information for motor vehicle accidents: "If you have x employees owning vehicles and x number of them drive to work..". A formula is needed to enable an industry to determine the probability (given a number of variables) that employees have a calculated percentage chance of sustaining injury at various levels of severity within specified timeframe(s).

It was incidentally noted that fitness does not seem to require such extensive data because there is automatic feedback on effectiveness in how the person feels and looks. Further, fitness has entered the cultural consciousness as having value and into the consciousness of many employers as saving them money.

Program concepts. One respondent noted that safety belt use components could fit in well with a comprehensive health promotion/wellness program and that there would be a synergistic effect among safety belt use and the other program components. Belt use could be tied in with other elements such as fitness -- safety belt use could feature an incentive effort based out of the fitness setting where people come twice or more per week. Since 80 percent of employees seem to want fitness programs, belt use would do well if tied in with fitness. The same respondent also noted that safety belt use could be paired up with alcohol use programs and even stress-reduction efforts.

Another interviewee felt that one-on-one post-health-risk-appraisal sessions could be a good opportunity to impact the behavior of employees in the safety belt area.

One respondent observed that fitness programs have a built-in reinforcement of better physical appearance, higher energy level, etc. and that this fact contributes to their program success. Safety belt programs need some type of reinforcement(s) for the employee, possibly in the form of incentives since there is no know natural reinforcement for wearing them (other than, perhaps, if one survives an accident or suffers less severe injury due to wearing them).

A rather provocative idea was suggested by one expert: that safety belt use may reduce stress levels in wearers.

Corporate sponsorship. It was mentioned that a number of related areas comprise distinctly separate entities in a number of companies: medical, employee assistance (personnel), fitness, safety, corporate communications, public affairs -- each has its own personality and structure. In many companies, however, there is little or no communication among the separate departments. As a result, many opportunities are missed to complement the activities of an existing effort or, more seriously, safety belt use is left, as one expert put it, "dangling without a home". It was advised by experts that a new program or new component should be discussed first with the Chief Executive Officer of the company, or with one who has a broad view of what is going on in the company regarding belt use efforts, etc.

Some respondents saw the relationship (or lack thereof) between various corporate divisions as a potential problem area in establishing a safety belt component. One expert said that turfism could be a problem between safety and health promotion areas but that belt use would be a viable component for health promotion/wellness, if the program promised a high potential for effectiveness. Others mentioned turfism as a possible obstacle, but it was also stressed that, as every company is different, a number of variables would have to be considered.

Relevant Concerns of Program Administrators/Practioners: Interview Results

Many of the major issues that came out of interviews/correspondence with experts and consultants were reflected by the administrators/practitioners interviewed in small discussion groups at the Society for Behavioral Medicine Conference. The paragraphs below cover, in summary, the key points yielded by the group interviews:

Many of the respondents displayed a lack of knowledge about effective safety belt programs existing now in industry and/or a lack of knowledge of the scope and impact of NHTSA's safety belt effort to date. A number of interviewees expressed reservations about really considering a safety belt use program as a component because they are not convinced that any effective approaches to motivating belt use exist at the present time. They express doubt that effective programs can be designed for their settings. Given their lack of knowledge of existing successful programs, it is possible that the participants have very little grasp of what might comprise a "program".

The participants did indicate in a number of ways that if a program component existed that demonstrated strong evidence of effectiveness when applied to their setting, then they would seriously consider it as an addition to their program. There was much concern voiced about the long-term effectiveness of safety belt behavior change.

Cost-benefit information appeared to be the "bottom-line" in many of the discussions with administrators/practitioners. Respondents were concerned about the epidemiology of unrestrained occupants involved in motor vehicle accidents. They wanted to know about levels of risk in their companies based upon a formula that could project the cost of motor vehicle related injuries over a given time span, what portion of this amount could be saved through application of an effective program, and what a program of this nature might cost.

Interaction between health and safety divisions in a given company was considered by participants to be a highly individual and important issue. Respondents gave a total range of responses in this area: their companies were described at one end of the scale, as having total cooperation and complement between safety and health and, at the other end, as having an atmosphere of conflict over "turf" issues between the two divisions. One individual reported that there was no problem in this area in his company due to the fact that both health promotion and safety ultimately report to the same person in upper management, perhaps a consideration in other companies. Even subsidiaries of the same company seem to reflect considerable variance in the relationship between health promotion and safety divisions.

In one respect the "turfism" issue got back to effectiveness issues. One respondent expressed great skepticism over the effectiveness of the company's safety-implemented program and commented that if safety wished to admit defeat, then the health promotion people might be interested in safety belts. Otherwise, they took the position that "we don't want to be associated with an unsuccessful program, thanks". This led to more discussion among participants of whether or not effective programs do, or can, exist.

Image and the appeal of the safety belt program area was another important issue for the program administrators/practitioners. It was generally agreed that safety belts are not viewed as appealing, "sexy", etc. Comments indicated that packaging would be very important; concern was expressed over the fact that participation in health promotion/wellness programs is strictly voluntary.

That which was not said is also an indicator of the thinking of the program people regarding inclusion of safety belt use: no one voiced the opinion that use is not a health issue. It was not indicated in any way that motor vehicle accident related injuries are not a costly problem for employers. It was more or less the consensus that respondents want to know more about the "bottom-line", more about what an effective program would look like in their setting -- along with some guarantee

implied by some concrete examples that a safety belt component can be effective and cost-beneficial within their program setting.

One program practitioner expressed interest in conducting a cost-benefit analysis on the effects of Health Risk Appraisal instrument alone. Data collected by his company through HRA administration indicated a 1982 baseline wearing rate of 23.8 percent of employees wearing belts 75 percent or more of the time. After no other apparent intervention than the HRA administration itself, 1983 HRA data showed 40 percent wearing belts 75 percent or more of the time. It was noted by the practitioner that belt use is one behavior that people can immediately change, if they so choose, thus experiencing immediate positive change on their HRA scores.

American Hospital Association Innovator's Conference

The purpose of the Innovator's Conference was to offer participants an opportunity to learn and experience innovative approaches to health promotion now utilized by hospitals throughout the country. Hospitals typically develop programs for their own employees and, based upon their experience, market packaged adaptations of their own efforts to the workplace/community. Many of the programs are packaged programs that the hospitals have purchased and adapted for their own special needs; e.g., the "Lifewise" program being marketed by St. Luke's Hospital of Kansas City is an adaptation of the SHAPE, Inc. package.

Hospital programs have the unique advantage of having been implemented, evaluated and refined by the hospitals for their own employee population. Therefore, these resulting marketable products conceivably represent for the client in business and industry a higher probability of success in an employee population. It was stressed by a number of individuals during this conference that they are typically asked by potential clients "How has the program worked for you?"

Attendees at the Innovator's Conference were individuals responsible for health promotion programs, educators, public relations personnel, planners, social workers, marketers and nurses. The major opportunity afforded by the conference for this research was to capture the tenor of the general response to the topic area of safety belt program components for hospital-based programs: level of interest, familiarity with programs currently existing in industry, and response to the area as an appropriate program component for inclusion in their efforts.

Based upon interviews with individual attendees at the conference and follow-up telephone conversations, along with more casual conversations with a variety of attendeed, it appeared that the majority of participants have not thought about safety belts as a potential part of their program. There was not a high level of interest demonstrated during discussions of the topic area. Many of the attendees interviewed were just getting programs implemented, are still in planning stages, etc. While this would be the time for them to consider appropriate risk areas for purposes of program design, it did not appear that safety belt use had entered the minds of these health promoters. Upon further discussion, a number of interviewees remarked that inclusion of safety belt use as a healthy behavior and as part of the comprehensive program is a valid consideration and a "good idea". Several people expressed interest in having materials concerning a safety belt component which would directly relate to the hospital-based program setting and explain the cost benefits potentials of such a program component.

One of the keynote speakers at the conference was Charles Berry, M.D., founder and president of the National Foundation for the Prevention of Disease. When asked specific questions regarding safety belt use and cost benefit at the conference, Dr. Berry did not demonstrate much familiarity with the topic nor interest in it as a part of health promotion/wellness programs. His brochure entitled "Risks to Your Good Health and What you Can do about Them" contains an excellent example of the line of reasoning of some health promotion professionals. In the section entitled, "What's a Risk Factor?", Berry defines a risk factor as "anything that could lead to a serious disease or disability -- a bad health habit, for example, or a physical condition, such as high blood pressure". He names a number of risk factors and then cites today's top three killers as being heart disease, cancer and accidents. In his section "A Word about Accidents", he puts forth his view of safety belts: "An accident risk factor -- such as not using seat belts -- is controllable but has little to do with health habits.

LIVE FOR LIFE Program Site Visit

A case study of Johnson & Johnson's LIVE FOR LIFE program is included in this report as Appendix F. The visit was conducted by PSS staff in order to gain first-hand knowledge of a health promotion/wellness program in operation and to interview program staff within their everyday setting.

LIVE FOR LIFE at Ortho Pharmaceutical, one of Johnson & Johnson's companies, has already instituted a safety belt component as part of its incentive oriented approach to other healthy behavior components. The LIVE FOR LIFE case study in Appendix F strongly supports the appropriateness of the safety belt component as part of health promotion/wellness programs in industry and offers an example of a program component which holds promise of success. The LIVE FOR LIFE safety belt component at Ortho also serves as an example of a complementary and cooperative effort between the Safety and Health Promotion areas of a company.

IV. CONCLUSIONS AND RECOMMENDATIONS

PSS has drawn the following conclusions and recommendations as a result of the research on existing successful programs; the development of the employer manual, "Employer Guide to an Effective Safety Belt Program"; and the needs assessment of the health promotion/wellness programs in industry.

Existing Successful Programs: Conclusions

1. The following major components represent the central focus of a potentially successful program to encourage employee safety belt use.

   - A strong and active commitment on the part of management to the safety belt program.
   - A clearly defined and well enforced policy of mandatory safety belt use on-the-job.
   - Positive incentives for employee safety belt use.

2. The following components represent the support components which contribute to the potential success of a safety belt program aimed at increasing use of safety belts among employees:

   - Systematic recordkeeping of motor vehicle accidents that includes the use or non-use of safety belts.
   - A comprehensive safety belt education program.
   - Ongoing program promotion within the company.
   - An outreach effort to spread the safety belt effort beyond the workplace -- especially to the family.
   - An auditing procedure to evaluate the program's effectiveness.

3. On-the-job programs work well when a mandated policy is augmented by positive incentives for use. A program which is totally enforcement oriented stands at risk of attaching a negative association to belt use, which may in turn result in lowering usage rates whenever employees perceive that they can break the rule with impunity or when they are off-the-job.

4. Off-the-job programs work well when they are based upon positive incentives to use and are complemented by a mandated policy for on-the-job use where appropriate.

5. A comprehensive, well-balanced program is most effective. A company should, without straining its resources, develop a program which includes all of the recommended components at a fairly strong level as appropriate.

6. Each employer represents a unique set of variables which will translate to a customized approach to safety belt program design. No one approach will work for all employers; the components will have to be tailored to fit special needs and conditions.

When the specific elements of an employee safety belt program are scrutinized, other issues emerge:

7. Management commitment to the program appears important to its success but also appears to be linked to the overall pre-existing corporate climate and, in particular, the extent to which the company has consistently embraced a commitment to employee safety. In corporations where these conditions are lacking, special efforts may be required to develop the desired level of management commitment to, and support of, the program.

8. Two issues are apparent in regard to incentive approaches: (1) avoiding the philosophical resistance to material enticements for "proper" behavior in the case of on-the-job efforts particularly, and (2) determining the size and frequency of rewards.

   - The philosophical/moral resistance to incentives can perhaps be best overcome by addressing the matter squarely, attempting to point out that the incentive is simply an initial motivational device. This viewpoint is probably most convincing where incentives are (as suggested above) only one facet of the broader program. Moreover, inclusion of incentives will likely be eased if the issue of motivation is discussed in the planning stages and the incentives approach emerges from the planning sessions as a potential technique for motivating employees.

   - Rewards for belt use should be fairly frequent (at least initially) and at least of a value (e.g., worth not more, perhaps, than $15 to $20) that provides incentive but does not by itself drive the program.

9. Most of the audits appeared to be compentently performed; i.e., they were conducted unobtrusively (at the majority of sites) at periodic intervals in a fashion that approached random sampling. Unless the audits are performed in this manner, they are unlikely to provide the accurate, objective indicator of usage that is sought.

10. Educational approaches (including films, lectures by authoritative sources, and printed materials) are obviously key elements of an effective program. Moreover, they were cited by numerous employees as most impacting their belt use behavior and motivating positive behavior change. However, educational approaches alone (without incentive components and/or mandate/enforcement, etc.) have shown unimpressive results, whereas incentive and mandate-oriented approaches with little emphasis on education were seen to efficiently produce significant increases in belt use.

11. It appears that education may serve a dual purpose within the context of the total program: it may serve not only to provide vital information upon which the belt use decisions may be based; it may provide an acceptable rationale for one's decision to wear belts. People appear reluctant to see themselves or present themselves as being "at effect" of motivational techniques such as incentives approaches.

12. Among the particular elements of the programs reviewed, the outreach component appeared to be the most under-utilized.

Existing Successful Programs: Recommendations

The major recommendations resulting from the research and development of the effective safety belt components are as follows:

1. A field-based research and demonstration project should be mounted which will utilize the model developed as part of this project as its vehicle.

2. The research component of the recommended model, which is closely integrated with the demonstration component, should be aimed at answering several significant questions in the safety belt program area:

   - What are the most effective components of the program, as judged by employees and by usage data?
   - How can the program best interface with efforts such as Health Promotion?
   - What educational approaches are most important?
   - How does an adequate recordkeeping system interact with decision making processes?
   - What techniques are effective in spreading safety belt use to employees' families and to the community at large?

3. A data collection and access system should be specifically designed so as to allow for motor vehicle crash-associated costs (direct and indirect; on and off-the-job), safety belt use, and other pertinent variables to be recorded, accessed and analyzed. The system should be utilized as the recordkeeping component in the research/demonstration project recommended above.

4. Technical support in the form of a needs assessment, design and implementation team should be available to firms expressing strong interest in establishing a safety belt program. Such a team might offer on-site consultation to employers or might aid groups of employers (perhaps on a regional basis) to examine their specific needs, design considerations and implementation process across the success components and promising approaches recommended by this research.

Health Promotion/Wellness Programs: Conclusions

1. Safety belt use has not been the focus of health promotion/wellness programs as a program component even though the evidence of its impact in reducing premature deaths and injuries is unequivocal and widespread.

2. Motor vehicle accidents kill more persons under 44 years of age than any other cause; however, failure to wear safety belts is not placed alongside the other contributing causes of chronic diseases (smoking, obesity, sedentary lifestyle, poor nutrition, and substance abuse) as a program intervention.

3. Safety belt use is considered to be a core item in most Health Risk Appraisal instruments. It is one of the risk factors utilized in forming the prospective composite of the appraised age of the employee/respondent. If minimizing risk is the program objective, and movement toward the appraised age corresponds with "health" or more "healthy" behavior, safety belt use can be considered a health issue for program purposes; yet, it is not.

4. Safety belt use has no known cumulative effect, nor is it known to improve the human organism biophysically. However, since the goals of most health

promotion programs encompass self-responsibility for one's life and health, safety belt use certainly appears to have face validity for inclusion as a program component. Yet programs that include it as a consideration (usually as part of the HRA administration) treat it, not as a behavior-change area in which people need ongoing support, but as a prescriptive note: "...and always wear your seatbelt". An exercise or smoking-cessation program differs distinctly from the treatment of safety belt use in that participants can avail themselves of a variety of supportive environments which will enable them to accomplish their behavioral objectives.

5. Although safety belt use is clearly a public health issue, it is placed by most companies rather solidly into the "safety" area along with other regulatory issues. Where safety belt education has been included in health promotion/wellness efforts, it has been as a tangential part of other program components such as defensive driving or substance abuse. Safety belt use does not comprise a distinct program component with its own goals and activities in health promotion programs (with a few possible exceptions such as Ortho Pharmaceutical).

6. Where safety belt use has not been included as part of health promotion/ wellness programs, planners have not usually envisioned that it could form a viable component relevant to the comprehensive effort. They have taken a limited view of the possibility and potential results of such a component mainly due to lack of information on what is already being done in industry and how it is being accomplished.

7. One reason that information is not circulated regarding existing successful safety belt programs may be the separation, in both program administration and focus, that exists between the health and safety areas of industry. The mental and real "turfism" that exists in some cases has possibly hindered health promotion programs from receiving input on the safety belt area. While intellectually they acknowledge belt use as being part of their concern, in practice the programs manifest a distinct gap in addressing the seriousness of the problem or its solution in a truly adequate manner.

8. Practitioners and experts see the need for more information on cost-effectiveness/cost-benefit of safety belt programs. Further, they would like more information about the risk area of non-belted motor vehicle accidents and how to relate that information to a particular company's population of employees.

9. Information on effective programs and examples of employee safety belt programs in industry were viewed as particularly valuable by practitioners and experts. They expressed a need for materials such as those developed in Phase 1 and 2 of this project. Such materials should be specifically designed for the health promotion/wellness area.

10. The concept of a healthy corporation which supports positive health behaviors is highly compatible with a safety belt use policy and efforts to motivate employees to buckle up on and off-the-job.

11. Companies have very different and individual safety/health area relationships. They run the gamut from a possessive, rather adversarial relationship to a high level of cooperation and blending of purpose and activities. Each company must be viewed individually as to the inter-relationships of factors to be considered in designing a safety belt program component for

the health promotion/wellness area. Some of the factors to be considered might include:

- Current level of safety belt program effort and current sponsorship:

  - Will the effort under consideration supplement a current effort?
  - Will the effort under consideration represent a first-time effort?
  - Will the effort under consideration replace an effort currently underway or formerly in effect?

- Current level of effectiveness of the current safety belt effort.

- Relationship between health and safety areas:

  - Do they comprise one division of the corporation?
  - Do they report to one corporate executive?
  - Are communications open and frequent?
  - Are the areas in competition?
  - Are they cooperative in a real operational sense?

- Perceptions of the safety belt program, if it already exists:

  - By upper management
  - By safety area
  - By health promotion/wellness area
  - By program recipients

- If complementary efforts are to be mounted, how will they be coordinated and by whom?

12. As strongly noted in Phase 1 of this project, many companies do not appear to have access or ease of access to data that would allow decisionmakers to assess the cost of non-belted motor vehicle accidents to employees on-the-job -- not to mention off-the-job crashes involving employees and/or family members. This situation definitely prevents them from obtaining a firm grasp on what level of problem (or potential level of savings) are involved in their company. A vicious cycle exists in that employers are saying, "show us the problem and how much we will save by correcting it" -- yet they do not have in place the type of data system which makes it possible to examine this type of data or draw the types of conclusions they desire.

Health Promotion/Wellness Programs: Recommendations

1. A model program should be implemented which will put safety belt use into the framework of other health promotion/wellness program components. The program should be created in such a way that employees will be availed of an opportunity to receive support in changing their safety belt non-use behavior. The program must be appealing, voluntary and should include the following considerations:

   - Selling the intellect on the value of safety belt use

     - Health Risk Appraisal interpretation and feedback
     - Information on safety belt myths, risks from driving, and mortality/morbidity data
     - Films, pamphlets and persuasive material

- Bringing the employee to a point of decision regarding belt use

  - Post-HRA interview offers a decision-point

- Supporting the employee's positive decision in a way that further sells the program and attracts participants

  - incentives
  - contests
  - synergy with other program components
  - environmental support
  - management commitment/participation in promoting increased use

2. Safety belt program implementation guidelines should be developed that will take into consideration the inter-relations of safety and health promotion and other areas of the company.

3. Gatekeepers -- those individuals and experts who talk effectively to industry, to hospitals, to schools -- should be provided with information regarding the need for safety belt use as a healthy behavior/lifestyle component in health promotion/wellness efforts. They should be given information on existing successful programs and potential cost savings which reflect the current knowledge of the topic area.

   - A national conference should be convened in which experts in health promotion, wellness, injury control, traffic medicine and public health lend their knowledge and experience to the topic of promoting health through occupant protection; specifically, how to increase voluntary safety belt use in workplace settings.

4. Materials should be developed which reflect the needs, philosophies and concerns of health promotion/wellness people. These materials would take into account approaches which fit into the wellness setting and would include information on the following topics:

   - Cost-effectiveness/cost-benefit of safety belt use
   - Program effectiveness goals and evaluation
   - Examples of successful programs to motivate safety belt use
   - Model program/program guidelines for the health promotion program setting

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The Bibliography is organized by sections A and B. Section A lists the sources of information in the safety belt programs/issues area. Section B represents the results of the literature review which was part of the Needs Assessment task for the health promotion/wellness area of industry.

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APPENDIX A: EMPLOYER MANUAL

"Employer Guide to an Effective Safety Belt Program"

Introduction

Motor vehicle accidents are the number one cause of on-the-job fatalities and lost work time in American industry. In addition to the tragic and incalculable loss of a valued worker, each employee fatality is estimated to cost the employer $120,000 in direct payments which include fringe benefits, medical care, and property damage. Not included in that figure is the disruption, loss of productivity and many indirect costs associated with temporarily or permanently replacing an employee. These costs are paid whether the crash occurred on or off-the-job, and they can run several times the amount of direct costs.

The most effective means of reducing these human and economic losses is through the full-time use of vehicle safety belts. Studies have shown conclusively that safety belts cut motor vehicle fatalities and serious injuries by 60 to 70 percent. With these facts in hand, a growing number of companies have undertaken comprehensive programs to encourage employee use of safety belts both on and off-the-job.

Changing attitudes and behavior toward safety is not easy. A simple "paper policy" recommending safety belts, or a few scattered posters, or a one-shot promotion is unlikely to achieve improved or lasting safety belt use among employees. Successful programs require careful planning and coordination, backed by long-term management commitment. But the benefits from such a program more than offset the effort or cost to employers.

Though safety belt programs and policies differ from company to company, certain common elements exist in successful programs. In a study of companies of various size and type conducted for the National Highway Traffic Safety Administration the following factors were evident as contributing to the success of employer safety belt programs:

MAJOR FACTORS

- A strong and active commitment on the part of mangement to the safety belt program,
- A clearly defined and well enforced policy of mandatory safety belt use on-the-job,
- Positive incentives for employee safety belt use.

On-the-job programs work best when a mandated policy is augmented by positive incentives for use.

Off-the-job programs work best when they are based upon positive incentives to use and are complemented by a mandated policy for on-the-job use where possible.

Management commitment is vital to the success of any safety-belt program whether its focus be on or off-the-job employee safety belt use.

SUPPORT FACTORS

- Systematic recordkeeping of motor vehicle accidents that includes the use or non-use of safety belts.
- A comprehensive safety belt education program.
- Ongoing program promotion within the company.
- An outreach effort to spread the safety belt effort beyond the workplace -- especially to the family.
- An auditing procedure to evaluate the program's effectiveness.

Each component is covered separately in this booklet as a guide to employers planning to design and implement safety belt programs of their own. The first three are vital considerations in the success of the program. The support components help to reinforce and ensure that success. In combined use, these components were found to consistently reward companies with higher safety belt use among employees. This, in turn, holds the larger potential for reduced accident/bodily injury rates, significant financial savings, improved productivity and management/worker relationships and, in many cases, an enhanced public image. In the last section of the booklet, "Putting it All Together", we show how that is done.

Management Commitment

Management commitment is the cornerstone of every successful employee safety belt program. This commitment must be clearly evident at all levels of management and not just a convenient buzz word. It means establishing a firm policy for on-the-job safety belt use, publicizing program goals and objectives, and then following through on them. To be effective, management commitment should include:

- Adequate commitment of time, funding, manpower and other resources. Safety belt programs need time to work -- at least three months for incentive programs and permanent commitment for ongoing efforts. Funds are required for materials and incentive rewards to support and promote these programs. And manpower must be allotted to auditing and evaluation activities, recordkeeping and outreach, and to the inspection and maintenance of safety belt equipment in company vehicles. Management must also be willing to have employees called "off the line" to participate in safety training and education programs, and be ready to provide facilities for such activities. Caution should be taken, however, not to commit these resources at the expense of other workplace safety programs.
- A clearly identified individual or group should be assigned lead responsibility for the safety belt program. Ideally, this person or group is highly motivated, energetic and visible to all employees, and is given sufficient authority by upper management to carry out the mission.
- Active participation by all levels of management in safety belt programs is important if the work force is to be convinced that management is serious about the program. "In the flesh" participation in kick-off ceremonies, safety meetings and award presentations is a good way to show this. Supervisors should be prime promoters

of belt use, and when a significant safety milestone is achieved, they should be quick to acknowledge it. A letter from the boss concerning use or non-use of safety belts is also a good means of showing commitment.

- A safety belt program should be viewed by employees as an integral part of the existing overall employee safety effort. Line management is held accountable for employee safety performance and recordkeeping, of which safety belt use is a part.
- Effective coordination of a safety belt program will rely on the acceptance and support of employee unions. Therefore, union leadership should be brought in during the planning stage and enlisted to help in the promotion and enforcement of safety belt use.
- Finally, management must demonstrate their commitment by example, and wear their safety belts at all times.

Mandatory Safety Belt Use

A well publicized, mandatory on-the-job safety belt use policy for all employees, backed up by well defined disciplinary procedures for noncompliance, can be a highly effective means of increasing safety belt use on-the-job. In most cases, such a policy is included in "regulation safety practices", like the mandatory wearing of hard hats and other on-the-job safety equipment. Unlike hard hats, however, safety belt use is encouraged both on and off-the-job, and a mandatory use policy is most effective when balanced with positive incentives for compliance. A stringent, mandatory policy alone can create resentment and "backlash" among employees who may refuse to wear safety belts off the job.

An effective mandatory safety belt use policy should include the following:

- Requirement that all employees -- management as well as workers -- wear safety belts for all on-the-job driving;
- Clearly prescribed disciplinary measures for noncompliance which are consistent with the overall safety policy, and which apply to all employees equally;
- Regular checks or audits for safety belt compliance and safe driving practices;
- Involvement of supervisors in the enforcement/disciplinary process as part of their regular job responsibility; and
- Equal effort and emphasis on positive incentives.

Some companies rely on investigations of on-the-job accidents as a means to judge an employee's driving performance and safety belt use. But this is not a reliable measure of safety belt use because, in the face of a tough penalty, few employees are likely to report non-use. As one company officer put it, "People half-conscious would reach over and buckle up to keep from reporting non-use."

The difficult task of enforcing a mandatory safety belt policy is more effectively achieved through the constant vigilance of field supervisors, whose own job performance is judged, in part, by the safety performance of employees under them. Regular safety performance checks, which include safety belt use, and random, unannounced audits of belt use in areas frequented by drivers, such as entering or leaving the motor pool garage, are good ways of reinforcing this requirement and gauging safety belt use.

The use or non-use of safety belts observed through these methods should be entered in the employee's performance record and rewarded or disciplined accordingly. Management can support this enforcement effort through a letter to the employee commending use or warning of the consequences of non-use of safety belts.

Positive Incentives

Because the direct rewards from safety belt use only appear in the case of an accident or hazardous driving situation, special motivational techniques are often required to convert employee apathy or even hostility towards safety belts to habitual use. One of the most effective means of encouraging regular use of safety belts is with positive incentives.

Companies who have used positive incentives in their employee safety belt campaigns have frequently seen dramatic improvements in usage rates in a short period of time. One company studied, for example, doubled its audited usage rate in three months by regularly giving small prizes to employees observed wearing their safety belts. The company achieved a goal of 90 percent usage within six months by offering larger prizes selected from a gift catalogue.

Some observations on positive incentive programs and rewards:

- Ideally, employees should be rewarded based directly upon observed safety belt use through unannounced audits. Reward can also be based upon self-report or "pledge" of safety belt use, though this is less direct and less reliable.
- Employees should be rewarded for individual safety belt use; however, peer pressure to achieve group or company-wide usage rate goals is also a powerful motivator. The best results may be achieved by a combination of both individual and group incentives.
- Employees should be given tangible rewards -- prizes, cash, lottery coupons, etc. However, awards, special privileges and recognition for outstanding performance can also have a role in motivating safety belt use.
- Programs or contests involving positive incentives should be of sufficient duration -- at least three months -- to bring about the beginning of a regular safety belt use habit, both on and off-the-job. This, after all, is the primary goal.

- Family involvement in a positive incentive program can also lead to higher safety belt use by employees. In the case above, the company sent gift catalogues to each employee's home, which created additional pressure from the family for the employee to win a prize.

Incentive programs can be used as the major motivator of employee safety belt use -- especially in work settings where there is no real justification of a mandatory policy and enforcement for on-the-job driving -- or along with a mandatory policy and enforcement. Mandated policy/enforcement programs, however, need to be balanced with positive incentive motivation in order to prevent employee resistance to using safety belts -- especially off-the-job. Possible disciplinary action for non-use of safety belts is a powerful negative incentive (or "disincentive"), but it can leave a negative feeling about the very behavior that it is intended to motivate.

Recordkeeping

The best diagnostic device and on-going barometer for a company's safety belt program is the company's recordkeeping system. Standard systems can be modified to reflect on and off-the job motor vehicle accidents and the resultant injury, illness, lost time and medical costs. With these statistics in hand, a company can tailor its safety belt campaign to suit individual needs and, at the same time, graphically illustrate for its employees the life and death difference safety belt use can make.

In addition to meeting Federal safety recordkeeping requirements an effective recordkeeping system should:

- Provide an overall analysis of the types of accidents and injuries occurring and a cost analysis of their effect.
- Indicate the seriousness of the company's accident problems and pinpoint the areas where prevention efforts are needed.
- Give a continuing reading of the effectiveness of specific prevention efforts.

One of the first steps should be the creation of a standard reporting form for all on and off-the-job motor vehicle accidents. This may require some coordination with a company's health insurance carrier if accident reports are not initiated by the company. Clerks should be trained in the process of filling out these forms so that responses will be standardized. At a minimum, the form should include:

- Dynamics of the accident
- Type of crash
- Level of injury sustained
- Belt use and type of restraint system used
- Days lost and associated costs of absence/injury

When including this information in the safety record system some thought should be given to retrieval. The system should also be designed so that certain

statistics are easily selected for review:

- Motor vehicle accident cases should be easily selected out of the total accident statistics
- Off-the-job motor vehicle accidents and injury records should be easily available for review
- Costs, injury and cause of injury should be retrievable for a specific incident and documented in detail.
- The safety belt use factor should be examined as part of the cost analysis

Records should be reviewed regularly to determine the role that safety belt use is playing in reducing the cost and level of injury in both on and off-the-job motor vehilcle accidents. Since accidents occur on a random basis, the impact of safety belt use or non-use must be estimated. But certain trends should be clear. If, for example, six months after a special incentive program has ended, motor vehicle injuries and costs are on the rise, it may be time to reinforce your safety belt effort. Conversely, if injury rates and costs plummet during a safety belt campaign, you can be assured that the effort and cost of the campaign have been worth it.

Promotion

In order to be persuaded to wear a safety belt, employees must be fully aware and frequently reminded of the benefits. They must also have a clear understanding of the company's policy toward safety belt use, including enforcement practices and penalities for non-use, and, in the case of a safety belt campaign, they should not be allowed to forget what the goals and objectives are and what rewards are being offered.

In this respect, a broad publicity and communication effort goes hand-in-hand with educational programs to get the safety belt message across and keep it there. The best way to accomplish this is to: (1) begin early -- well before the announced date of a campaign kick-off; (2) update and repeat the message frequently; and (3) use a variety of means to get the message across including:

- Brochures, flyers and handouts stuffed in pay envelopes and distributed freely at the kick-off ceremony, safety meetings or any other time or place that seems appropriate;
- Posters and buckle-up signs in all prominent locations, particularly where drivers enter and leave their vehicles;
- Company bulletin boards, and newsletters to announce the program, report on its progress, and add credibility to it with personal accounts by employees and others "saved by the belt".

Supervisors and managers can play a key role in this effort by serving as spokespersons for the safety belt program, repeatedly encouraging employees to use safety belts and constantly making them aware of the program's objectives.

But the employees themselves are perhaps the best promoters of safety belt use, and anything that stimulates talk among employees about safety belt programs and campaigns helps reinforce the message. Incentive programs which

stimulate peer pressure to achieve the company's goals are particularly valuable, as well as accounts about employee use of belts or involvement in promoting them. One company, for example, completed a film about its employee safety belt program which features an interview with an employee who told how she and her children escaped serious injury in a bad crash by wearing their safety belts.

Employees are especially fond of seeing themselves or their company featured on local television or in the newspapers, so it is important to keep the local media informed of special events in your safety belt program -- awards, contests, clever promotions and any real-life "saved by the belt" testimonials. News of your safety belt campaign not only boosts employee interest, but it can do wonders for your public image.

The point is that safety belt campaigns offer a fine opportunity for creative promotions. All that is needed is imagination. Some examples are:

- A large barometer placed outside the main gate graphically recorded the progress toward the safety belt usage rate goal and prompted employees to reach the goal and win a prize.
- Professionally done photomontages of crash vehicles and their employee drivers who were "saved by the belt" were prominently displayed on the plant's bulletin boards.
- One company gained a great deal of employee and media attention by offering chances to win a new automobile as an incentive in its safety belt campaign.
- The top executive of another company helped promote its safety belt campaign by sending a personal letter to each employee explaining the intent of the program and asking them for their cooperation.
- A slogan contest using the letters S-A-F-E-T-Y-B-E-L-T-S with a substantial prize for the winner sparked high interest in a company's safety belt campaign.

Education

People need to know the facts about safety belts before they can be induced to wear them. Indeed, many employees cite education as a key factor in their decision to use belts. But the facts alone are not enough. Education is most effective when used to reinforce and give credence to a comprehensive safety belt program. As one component of such a program, safety belt education should follow these guidelines:

- It should be integrated into other workplace safety programs and offered at regular intervals to all employees. New employees should be given introductory safety belt education, including information on any existing company policy, along with all other routine safety information.
- It should employ a variety of learning aids such as films, lectures by safety experts and small group discussion, as well as written materials dispelling myths and emphasizing the benefits of safety belts. Films such as Room to Live and Dice in a Box and dramatic testimonials by police officers and emergency room personnel have been found to be strong motivators.
- Employees should be involved in preparing and presenting educational programs. This can include suggestions on the direction of the program or actual participation in it. Personal testimonials by employees "saved by the belt" offer strong reinforcement of educational messages. Where appropriate, responsibility for safety belt education can be given to a committee of employees.
- All levels of management should be involved in safety belt education.
- Where possible, driver education and defensive driving training can be included.

Outreach

Spreading the safety belt message beyond plant boundaries often helps encourage and reinforce safety belt use by employees. Convincing parents, for example, of the life saving value of safety belts and child safety seats for their children is often the first step in getting them to buckle up. Utilizing local merchants and media in the campaign brings the message into the everyday life of the workers.

In order to involve the family in the company safety belt program, literature can be sent home, movies can be shown at family functions sponsored by the company, and families can be included in the incentive programs used to promote safety belt use. As noted earlier, one company extended its incentive program by sending home a catalogue of prizes which would be awarded if safety belt goals were met. Not only did the families apply additional pressure to meet those goals, but they were also made aware of the value of safety belts for everyone.

Tips to successful outreach programs include:

- Use a variety of outreach means -- films, literature, contests, demonstrations, lectures, etc.
- Local merchants can improve their image, and business, by donating products and services to be used by the company as incentives to safety belt use.
- Keep local media informed of special happenings within your safety belt campaign -- novel kick-off ceremonies, awards, contests, clever promotions and any real-life "saved by the belt" stories.

Some companies extend their safety belt educational programs to the community, lecturing or showing films to civic groups. This benefits both the community and the company.

Auditing and Evaluation

In order to tell whether or not a safety belt program is working, there must be some means of evaluation. The most effective method of evaluation is by unannounced audit before and during a safety belt campaign or contest and periodically thereafter. Comparison of the data gathered from these audits will offer a reliable gauge of the effectiveness of your program and will offer an indication of whether additional steps are necessary.

Because observation of employee safety belt use is difficult, if not impossible, in the field or off-the-job, the most reliable data are usually obtained through discreet observations in settings where there are distinct entrances and exit points used by most employees -- front gates, motor-pool garages and, in the case of large facilities, a major intersection with a traffic light or stop sign. The audits must be well planned and executed so that employees do not know they are being observed, or they do not know it until it's "too late".

Obviously, an audit of all employees during all work shifts is the most reliable. But this requires a large commitment of time and personnel which most companies cannot make. Many companies have had good results, however, with "sample" audits -- checking every "xth" car, for instance, or checking several times per week for 30 minutes each time. In addition to being less costly, these sample checks have the advantage of allowing the auditor more time to make a thorough observation. They also allow a company to spread its resources to audit late night shifts or less frequently visited locations.

There are some firms, of course, where unannounced driver checks would be neither ideal nor possible. In these cases other means of evaluation must be applied, such as:

- Anonymous, self-report questionnaires can be administered before and after a safety belt campaign to measure a change in attitude and reported behavior.

- Random checks of belt use can be made by supervisors in the field.
- Spot audits in a setting where groups of drivers may congregate, even temporarily, provide an opportunity for measuring effectiveness. A meeting of sales personnel, for example, might be a good spot-audit occasion.
- Yearly review of employee motor vehicle accidents and associated cost, utilizing accident forms which have been adjusted to include safety belt use provide some indication of program success. Though there are many variables affecting this method of audit which reduce its reliability, it can offer a reasonable comparison between years in which a safety belt program was instituted and years where there was none.

Some companies have combined the auditing of employee safety belt use with a positive incentive program. For example, one company periodically gave out prizes for every employee observed wearing their safety belt when they entered the front gate. But while this was a great way to reinforce positive behavior and a highly visible means of letting all employees know of the safety belt campaign, it was a poor means of audit for evaluation purposes. As employees backed up in a long line trying to get in the gate, the word soon passed as to what was going on and many employees quickly buckled up to get a prize.

To truly measure the effects of the program, employees must not know that they are being audited, or at least should not have any advance notice of it.

As a tool for evaluating progress of your safety belt program and to determine which methods work best for the effort spent, audits should be conducted at regular intervals. During an initial campaign or contest, audits may be taken weekly. Some companies issue weekly or monthly reports during this period to encourage employees to meet established goals. Once the campaign has been phased out, continuing audits -- at least once every several months -- are

necessary to determine the extent that further efforts are needed to maintain usage rates.

Putting it all Together

Because of the many differences between employers, no one approach to or set of techniques for setting up an effective safety belt program is appropriate for all. The components discussed in this booklet have been found to be common among most successful programs studied and are offered as a guide to other companies interested in designing and implementing a safety belt program of their own. But it is up to you to tailor these findings to fit the needs and resources of your company.

The following steps can make that task easier:

1. Determine if you have a problem. Review your records, if possible, to see what your accident/injury rates are and conduct an audit of employees to determine your actual safety belt usage rate. If your company has no safety belt policy or program, or if it is loosely enforced, there is a high likelihood that your usage rate is poor (the national average is only 10.9 percent) and is costing you needless lives and expense.
2. Commitment. Once you have determined that it is necessary to raise the safety belt usage rates in your company, you must decide how much effort and resources you want to commit to the program. Keep in mind, however, the more comprehensive the program and the longer the duration, the greater the payback in reduced death, injury and cost for companies of all types and sizes.
3. Set goals and objectives. What do you want to achieve with your safety belt program. Do you want a 50 percent improvement, a 100 percent gain, more? You should decide during the planning stage, announce when the program is launched, and follow through. Be realistic, but not conservative, in setting objectives for the overall program and for each component of it.

4. Mandatory policy and positive incentives. When you begin to look at ways to implement your safety belt program, these two measures should be considered first. As we have explained, both are highly effective but work best in combination. If a mandatory safety belt policy is employed, enforcement procedures and disciplinary measures must be determined and clearly stated. Considerations for positive incentives should include what type, how many and how they will be awarded. If both measures are decided on, they should be coordinated.

5. Support factors. Not every method outlined in this booklet is applicable or necessary for every company. But it should be noted that each is interrelated and, to a certain extent, interdependent on the others -- education and promotion go hand-in-hand, as do positive incentives and promotion, promotion and outreach, outreach and positive incentives, and so on. Whatever methods are selected, each should be coordinated with and supportive of other components, and each should contribute to the overall goals and objectives of the program. Remember, the whole is only as good as its parts.

6. Appoint a coordinator. It will be the responsibility of this individual or group to make sure the program stays on course across All its various components. Select carefully. This person or group can make or break the program.

7. Evaluation. The only way to gauge the success of your program is to develop some means of evaluation, and the most effective means is by unannounced driver audits. If your program is comprehensive, well planned and coordinated, your evaluation will, over a period of years, show a reduction in costs from motor vehicle crashes that will more than offset the cost of your efforts.

APPENDIX B : PROMISING APPROACHES

This appendix contains a collection of illustrative materials on approaches to various program components utilized by participating employers and found to be contributors to program success. PSS refers to these ideas as "Promising Approaches" and further describes a range of such approaches in the Findings section of the final report.

The materials herein are not by any means exhaustive. One company is not necessarily chosen over another where duplicate approaches exist, but materials are meant to be examplary of a particular type of approach.

SAVED-BY-THE-BELT ARTICLE IN EMPLOYEE NEWSPAPER
GENERAL MOTORS TECHNICAL CENTER

Seat Belts Convinced Szydlowski

by Chris Dyhdalo

Larry J. Szydlowski, Senior Project Engineer, Worldwide Truck and Bus Group, admits that he usually didn't wear seat belts. But since he signed a pledge card for the Seat Belt Sweepstakes, he was wearing one during an accident two weeks ago.

"If it wasn't for this program, I certainly wouldn't have been wearing one," he said. "It made a believer out of me."

Previous to the introduction of the contest, Szydlowski said he had some very good reasons for not wearing a seat belt. One of the main reasons was the fact that he didn't want to be trapped in the car. "It was my own personal belief," he said.

Today, Szydlowski makes sure that he and his family always put seat belts on. It's an attitude that anyone, with just a little effort, can adopt. After all, nothing can make you feel more secure in a car than the satisfying click of the seat belt lock.

When the contest first started, Szydlowski didn't turn his pledge card in immediately. "I was one of those guys (who said) I have been driving for 27 years, never had an accident." He thought, "well, it can't happen to me...I can always get out of the way or I'm always driving defensively."

One day, a friend who drove with him to work reminded him of the sweepstakes. Szydlowski

Larry J. Szydlowski

decided if he was going to sign the pledge, he was going to wear his seat belts all the time. After a van ran into his 1979 Chevette at the M-59 and Dequindre Road intersection, Szydlowski said, "I wouldn't want to go through that again without one."

SAVED-BY-THE-BELT SAFETY BULLETIN
TELETYPE CORPORATION
July 26 1982

Seat Belt Safety Bulletin Issue 2

KEYSWITCH EMPLOYEE INSISTS "BUCKLE UP" SAVES 4 LIVES

awaiting approval for return to work

Bonnie P. Bright in Medical

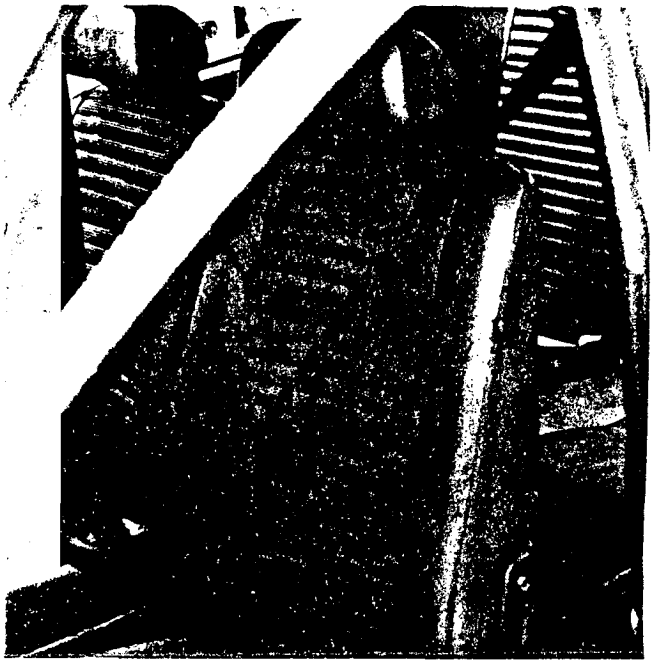
Dodge COLT "totalled"

July 12, 1982 started out as just another day of vacation for Bonnie P. Bright (4273-1), her two sons, and her husband's aunt, but in just a few hours her good judgement would save her life and the lives of her three passengers.

"Buckle up", Bonnie told her boys as they left home on an errand. She had been impressed by the five mph "crash" demonstration on the Company parking lot and was trying to develop the seat belt habit.

"Oh Mom, do we all have to wear seat belts?" Bonnie's adult passenger quickly set a good example for the boys by buckling up.

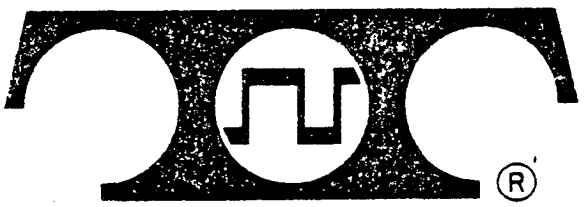
Moments later a driver on the access road allegedly failed to yield as Bonnie turned onto Interstate #30. The collision damaged the auto exterior like a cannon ball at close range, but inside, where Bonnie's passengers were strapped in, there was room to live, and no one sustained major injuries. The investigating officer credited the use of seat belts for their lives.



Interior —Room To Live

Exterior — Demolished

Bonnie was not a regular seat belt user before the Teletype Corporation campaign, but she is now and always will be. Will you join her in a crusade for life?



TELETYPE CORPORATION
8000 Interstate #30
Little Rock, Arkansas 72209

TELETYPE'S INDIVIDUAL BELT USE REWARD

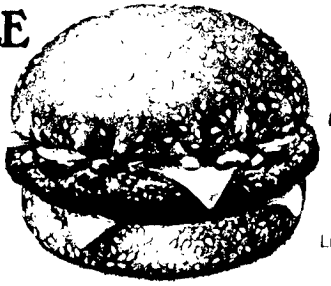
WE CARE ABOUT OUR CUSTOMERS . . .

THANKS FOR "BUCKLING UP"!

Buy one Quarter Pounder® with Cheese Sandwich GET ONE FREE

Cash value 1/20 of 1 cent

Just present this coupon when you buy a Quarter Pounder* with cheese sandwich and you'll get another one free. Limit one coupon per customer, per visit. Please present coupon when ordering.



You deserve a break today®

McDonald's

Good only at Little Rock, North Little Rock, Conway and Pine Bluff, AR

Valid until Sept. 30, 1982

*U.S.D.A. Inspected 100% Beef. Weight before cooking 4 oz. (113.4 gms.)

SAVED BY THE SEATBELT CLUB
ILLINOIS BELL TELEPHONE

Illinois Bell

SAVED BY THE SEATBELT CLUB

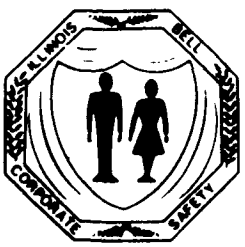
_____

IS ENROLLED AS A MEMBER OF THE

Saved By the Seatbelt Club

AND IS ACCLAIMED FOR USING SEATBELTS DURING AN ACCIDENT SITUATION
WHICH HAD THE POTENTIAL OF CAUSING SERIOUS INJURY OR POSSIBLY DEATH.

[redacted]



_____

CORPORATE SAFETY DIRECTOR

_____

DATE NO.

SAVED BY THE SEAT BELT CLUB

APPLICATION FOR MEMBERSHIP

Date_____

Name_____ Members of Immediate Family

Address_____ _____

_____ _____

Accident date_____ Location_____

Details_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Supervisor_____ Department_____

Address_____ Telephone Number_____

District Level_____ Address_____

APPPROVED:

_____

CORPORATE SAFETY DIRECTOR

B-11

(See reverse side for instructions)

INSTRUCTIONS

WHO IS ELIGIBLE

Illinois Bell employees and members of their immediate families who have been SAVED BY THE SEATBELT.

HOW TO JOIN

Submit in writing the story of how wearing an automobile seatbelt saved you, or a member of your immediate family, from serious injury or death.

PURPOSE

To encourage the wearing of seatbelts and prevent serious injury.

AWARD

Membership certificate, key chain -- and maybe your life.

ENROLLMENT PROCEDURE

Submit a SAVED BY THE SEATBELT CLUB application for membership form to:

CORPORATE SAFETY DIRECTOR
225 West Randolph Street - HQ 14C
Chicago, Illinois 60606

Membership certificate and key chain will be mailed to the Division Manager for consideration for presentation to the employee.

Division Manager_____

Address_____

_____

For use by Corporate Safety District:

Membership Number_____

Date Mailed_____

3/81

SAFETY BELT SWEEPSTAKES
GENERAL MOTORS TECHNICAL CENTER

SEAT BELT SWEEPSTAKES PRIZE DRAWING PROCEDURE

1. Names of all people who have returned signed pledge cards have been arranged in numerical order by social security number (this is to check for duplicates). Therefore, they are not arranged alphabetically, by Staff, by Department, etc.

2. A number has been sequentially assigned to each social security number.

3. The computer will randomly generate 50 numbers between 0 and 5000 (the number of cards that have been returned) which will correspond to 50 social security numbers.

4. The sepcific pledge cards will be "pulled" from the file and the current eligibility (employment status) of these individuals will be verified to determine if they were housed at the Tech Center during the time that the "Seat Belt Sweepstakes" was running and that they are still employed by GM.

5. Any assigned company car drivers among these 50 people will be identified.

6. The pledge cards belonging to the non-company car drivers among the 50 people will be put into a drug and mixed up.

7. One card will be drawn to identify the winner of the car.

8. After the winner of the car has been determined, all of the remaining cards (including those belonging to assigned company car drivers) will be put into the drum and mixed up.

9. Cards will be drawn to determine who will win the other 34 prizes. The first ten cards will signify winners of wristwatches, the second ten will signify winners of travel alarm clocks, the third ten will signify winners of penwatches, and the last four will signify winners of model "F" cars.

10. The winners will be notified as soon as possible and instructed as to how they may obtain their prize.

Soc. Sec. No.	Name	Dept.	Unit

SEAT BELT SWEEPSTAKES ENTRY

I PLEDGE TO WEAR MY SEAT BELTS ON AND OFF THE GM TECH CENTER SITE FOR A PERIOD OF AT LEAST TWELVE (12) MONTHS.

_____ _____

Signature Date

(DO NOT FOLD OR STAPLE)

PRIZE DRAWING RESULTS
LAUGHLIN AIR FORCE BASE

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 47TH FLYING TRAINING WING (ATC)
LAUGHLIN AIR FORCE BASE, TEXAS 78840

REPLY TO ATTN OF: 47 FTW/SE

SUBJECT: Seat Belt Program

TO: 47 ABG/CC 47 FTW/RM 47 FTW/SG
47 FTW/MA 47 FTW/DO

1. The following names are forwarded IAW LAFB Special Seat Belt Program (Atch 1). Those individuals found not wearing seat belts should be issued a written warning as outlined in Atch 1 of the Seat Belt Program Letter.

2. The following seat belt users for the month of _____ were selected to receive an award:

a. _____ Officers Club Dinner

b. _____ Thunderbird Inn Dinner

c. _____ $10.00 Gift Certificate (Border Credit Union)

d. _____ Pen and Pencil Set

3. Surveys were conducted at West Gate, Main Gate, and at random locations on base.

4. Names of Users/Non-Users:

PRESS RELEASES AND OTHER OUTREACH

NEWS RELEASE

BERG ELECTRONICS GETS FAST START ON SEAT BELT PROGRAM

DuPont Company's Berg Electronics Division took off like a bunny in Gov. Thornberg's 'Snap It Up' Seat Belt program. Two eight-foot rabbits greeted workers as they arrived at the Fishing Creek site this pre-Easter morning. It's all part of a seat belt check. Ladies who used their seat belt received an orchid...men received a carnation. The local connector manufacturer is one of many firms working with the Governor's Traffic Safety Council in a campaign to improve seat belt usage in Cumberland, York, Lancaster and Dauphin counties. Subsequent, unannounced seatbelt audits will be made on seat belt usage at Berg in an effort to encourage safety practices and save lives.

A company spokesman stated that though it may appear that we're handling this lightly...we, as a division of DuPont, are deeply committed to worker safety. We're tieing-in the Governor's campaign with our own Seat Belt Contest here at Berg, in which everyone at this site, will receive a prize if 90% or more seat belt usage is realized. We're happy to join Governor's Snap-It-Up Seat Belt program...and to be one of the first to take positive action.

NEWS RELEASE

TELETYPE CORPORATION

8000 INTERSTATE 30 LITTLE ROCK, ARKANSAS 72209
PHONE (501) 562-4411 TWX NO. 910-722-7490

NEWS RELEASE
For release:
August 16, 1982

For more information:
Jim Crotty
569-4439

TELETYPE CORPORATION PROMOTES SEAT BELT SAFETY

On Monday, August 16, 1982, officials of Teletype Corporation - Little Rock and representatives of IBEW, Local 2022, made the second unannounced safety survey as employees were leaving the parking lot, and awarded coupons for "Seat Belt Burgers" to every employee observed to be safely wearing a restraint system -- chest belt, lap belt, or both.

The coupons, underwritten by McDonald's®, are popular with employees and offer a free Quarter Pounder® with Cheese when an identical burger is purchased. The coupons read, "We care about our customers...THANKS FOR 'BUCKLING UP'!"

Teletype Corporation, in cooperation with the Arkansas Highway Safety Program, has been promoting the use of auto seat belts through a program of movies, photo-posters of accident survivors who used seat belts, demonstrations of simulated five mph "crashes" on a "Convincer" sled and special hand bills reporting auto accidents of employees.

Experts estimate that auto fatalities could be reduced by 60% through the use of seat belts. The Teletype Corporation promotion, though primarily humanitarian, reflects the thoughts of Vice President and General Manager, J. L. O'Marra, who in a letter to all employees stated, "After all, YOU are the most valuable asset of the Teletype Corporation."

The Teletype Corporation, a Western Electric Company subsidiary, is located at 8000 Interstate #30 and is a high-technology market leader in the design and manufacture of data products and systems.

# # #

PUBLIC SERVICE ANNOUNCEMENT

April 16, 1982

General Motors Radio - Seatbelts: Driver as Authority

If you ever drive a car, this message is meant for you.

Did you know that when you're the driver, the other passengers see you as the authority figure? Sort of like the captain of a ship-

That means if you urge the others to wear their seatbelts, they'll probably do it -- and that may very well help save their lives in case of an accident.

So next time you're the driver, use your influence. Fasten your seatbelts and ask everyone in the car to do the same.

ANNOUNCER:

This message has been brought to you by General Motors.

PROMOTIONAL CONTEST

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 47TH FLYING TRAINING WING (ATC)
LAUGHLIN AIR FORCE BASE, TX [redacted] 78843

REPLY TO
ATTN OF: 47FTW/SE

1 July 1982

SUBJECT: Seat Belt Contest

TO: All Staff Agencies, Divisions, Squadrons and Tenant Units

1. Seat Belt wear is an on-going program with which everyone needs to be concerned. The necessity for keeping this as an active, not passive portion of our daily lives is the key. To enhance our level of consciousness, we have initiated several actions base-wide, one of which is the "Make It Click" Campaign.

2. To further our awareness of seat belt usage, we are sponsoring a contest to highlight the word "SEAT BELT". Everyone in the 47th Flying Training Wing is eligible to participate by submitting a slogan using each letter of the word Seat Belt. The slogan should relate to the safety benefits of wearing your seat belt. Example:

S eat Belts_____

E xplain_____

A _____

T _____

B _____

E _____

L _____

T _____

S _____

Participants will use whatever catchy phrase they think will be appropriate.

3. This contest will be publicized at the Wing Staff and Ground Safety Meetings, as well as in the Border Eagle. Kick off of the contest will be the final 31 days of the "Make It Click" Campaign and "101 Most Critical Days", 1-31 Aug 82.

4. Participants may send their slogans to the Ground Safety Office. Initial screening of slogans submitted will be by the Chief of Safety and Wing Ground Safety Manager who will select the top ten slogans. They, in turn, will be submitted to the Wing Commander for awards to be given for first, second and third place winners. The winning entries will also appear in the Base Bulletin or Border Eagle.

Donald S. Jones

DONALD S. JONES, Lt Colonel, USAF
Chief, Safety Division

BULLETINS, MEMORANDA, NEWSLETTERS

September, 1982

To All District Managers and Marketing Managers:

Seat Belt Usage is Mandatory No. 6

Company safety standards require all employees to use seat belts and shoulder restraints (if available) whenever they operate a vehicle on company business. Standards also provide that the driver is responsible for seeing that all passengers in front or rear seats are "buckled up".

Further, state law demands that drivers and passengers in certain large delivery and construction vehicles (weighing 12,000 pounds or more) must use these restraints. Failure to do so is considered a moving violation by local and state police.

Observations at the Headquarters motor pool, the Management Development Center (Hinsdale) and at random locations throughout the state continue to show many employees violating the company standard and state law.

To insure compliance, reduce injuries, and save lives, we urge you to take the following steps:

1. Communicate our company standard and the state law to all your employees.
2. Show the film "Room to Live" to employees if you've not already done so. It is available through the Company film library (312) 727-2463 or the Corporate Safety Staff (312) 727-3777.
3. Enforce seat belt usage on company business and encourage it in personal vehicles.
4. Practice what we preach, and commend those who comply with this standard.

District Manager-
Corporate Safety
(312) 727-3777

seatbelt sweepstakes I

What: **1982 GM Tech Center Seat Belt Use Incentive Program.**

Why: **GM is concerned about the health and welfare of its employes. Seat belts save lives and reduce serious injuries and not enough GM employes wear them.**

Who: **All regular GM employes, GM per diem employes and college co-op students, housed at the Tech Center, who formally pledge to wear their seat belts are eligible for the sweepstakes.**

How: **Prize drawings will be held if certain overall seat belt usage rates are achieved at the Tech Center.**

Sweepstakes I Details

- Beginning in May, 1982 seat belt use will be monitored anywhere on the GM Tech Center site, including the five entrances/exits to the Tech Center (i.e. tunnel, 12 Mile Rd., Mound Rd. North and South, and Chicago Rd.). Usage may be monitored at anytime during the day.
- A drawing will be held at the end of May if an average seat belt usage rate greater than 50% is achieved.
- The names of all regular GM employes (including RETA employes), GM per diem employes, and college co-op employes, who are housed at the Tech Center (between the railroad tracks and Mound Rd.) during the seat belt use monitoring period and who have completed and returned a signed seat belt use pledge card, will be submitted for the prize drawings.
- Each employe shall sign only one pledge card. Pledge cards for new employes or employes who decide to sign a pledge at a later date must be signed and returned before the drawing to be eligible.
- The top prize for the first drawing will be a new "T" car, ordered with the winner's choice of options. Other assorted prizes (such as wristwatches, travel alarm clocks, etc.) donated by the GM Men's Club will be awarded in addition to the car.
- Assigned company car drivers will not be eligible to win a car, but they will be eligible for the other prizes.
- The following contact persons have been appointed and questions regarding the program may be directed to them.

Research Labs.	**Clay Snyder**	**(5-2790)**
Service Section	**Charles Hall**	**(5-0188)**
Engineering Staff	**Joe Fazio**	**(5-1413)**
Manufacturing Dev.	**Ronal Travis**	**(5-0693)**
Design Staff	**Patrick DeWaele**	**(5-2261)**
World Truck	**Mary Ann Massey**	**(5-8290)**
Environ. Act. Staff	**Terry Horne**	**(2-1080)**
MTO	**Jean Rosinski**	**(2-0830)**

seatbelt sweepstakes III

Seat Belt Use Goal:

70%

Drawing On 10-15-82 If Goal Is Met

Top Prize:

Choice Of
"A"
"F"
"J"
"X"
or "T" Car

Contact These People If You Have Questions:

Research Labs.	Clay Snyder	(5-2790)	Design Staff	Patrick DeWaele	(5-2261)
Service Section	Charles Hall	(5-0188)	World Truck	Mary Ann Massey	(5-8290)
Engineering Staff	Joe Fazio	(5-1413)	Environ. Act. Staff	Terry Horne	(2-1080)
Manufacturing Dev.	Ronal Travis	(5-0693)	MTO	Jean Rosinski	(2-0830)

Daily Report

Environmental Activities Staff • Technical Services

September 20, 1982

EARLY CALLBACK AT GMC... Nearly 700 hourly employes are being called back early to prepare for a previously announced second shift at the S-truck assembly plant in Pontiac, Mich., said John D. Rock, manager of sales and service for the Worldwide Truck and Bus Group. Rock's announcement came Friday morning at the Milford Proving Ground where the news media previewed the 1983 GMC models. Don Douglas, president of Local 594, also spoke to reporters.

According to the announcement, training sessions started early last week for the initial group of 200 second shift employes. They will be joined today by another 500.

Rock said the new S-trucks will be available with four-wheel-drive, and in two new models, an Extended-Cab Club Coupe and a dramatically downsized Jimmy. Rock pointed out that the current S models — from both Chevrolet and GMC — have captured 30% of the growing compact pickup market with 149,000 deliveries from January through August. Last year, all compact trucks built in the U.S. accounted for only eight percent of the market, said Rock.

RAIL TALKS RESUME, STRIKE TO QUICKLY AFFECT GM... More than 26,000 locomotive engineers went on strike Sunday morning, and new contract talks are scheduled to resume today. Both sides met separately Sunday with federal mediators.

GM says the strike will have serious impact on its manufacturing and assembly operations, with a large number of North American plants being forced to shut down within 48 hours.

UAW GIRDS FOR TIGHT VOTE ON CHRYSLER PACT... The UAW will distribute to Chrysler locals videotapes of President Douglas A. Fraser's speech this weekend to Chrysler Council members in favor of the tentative pact the union has with the automaker, says the Wall Street Journal. Distributing videotapes of such speeches is something the union has never done before. In addition, officials haven't set a deadline for completion of the ratification process, though it is understood the UAW wants to get approval in the first week of October, says the Journal.

HERE & THERE...UAW members in Canada are voting about 80% in favor of the new contract with GM, according to news reports...Toyota says it is raising prices on some larger 1983 models by as much as 10.8%, and American Honda is increasing new-car stickers an average 1.6%.

SSPP... The August 31, 1982 valuations of the various SSPP options were:

	GM	Diversified Gov't Securities	Income Fund	Equity Index Fund
August 31, 1982	$ 44.31	$239.07	$153.77	$171.75
Chg. from 7/31/82	$ 5.31	$ 7.73	$ 1.69	$ 19.03
Percent of Chg.	12.3%	3.3%	1.1%	12.5%
Chg. from 12/31/81	$ 9.75	$ 27.71	$ 10.82	$ 2.34
Percent of Chg.	25.3%	13.2%	7.6%	1.4%

-Over-

GOAL IS 70%

The average usage to date is **69.2%**

Usage Friday night at Chicago Road was **73.6%**

Usage this morning at Mound Road South was **70.4%**

THE DOW JONES INDUSTRIAL AVERAGE was down 10.86 Friday, closing at 916.94. GM stock closed at 48 and 1/2, down 1/4.

1982 EAS LEAGUE CHAMPIONSHIP TOURNAMENT

KINGSVILLE - SEPTEMBER 25, 1982

GROUPS AND HANDICAPS

WHITE NINE / GOLD NINE

9:00

Mil Bennett	16
Dave Martin	(Callaway)*
Dick Davis	20
De Landwehr	24

9:07

Jim Keller	20*
Phil Gerwert	16
Tony Yanik	34! SANDBAGGER!!
Joe Ottoy	18

9:14

Ken Stack	12*
Tom Brinkman	18
Henry Johnson	11*
Gary Trenchard	20*

9:21

Norm Cukras	18*
Len Radtke	18*
Dave Phillips	38*
Gene Pezon	26

9:28

Jon Ercole	22*
Rod Schontz	22*
Chuck Elder	20

9:35

Andre Noroyan	24*
Jerry Seaton	24*
Joe Calhoun	18

9:42

Don Van Zile	28
Ken Zorn	18
Jim Polich	28*
Harry Cameron	50*

9:49

Warren Underwood	18*
Bob Gunderson	16*
Mike Gunderson	8*

* Guest Flight

MEMORANDUM TO ALL EMPLOYEES FROM TELETYPE'S VICE PRESIDENT AND GENERAL MANAGER

May 27, 1982

TO ALL EMPLOYEES:

Your Company wants to help you save your most precious assets -- your life and the lives of your loved ones. Statistics indicate the alarming possibility that each of us could be injured in an automobile accident in the next ten years. You and your family can significantly reduce the probability of injury by the use of seat and shoulder belts.

In the forthcoming months we will be joining in the efforts of Federal and State agencies and the Western Electric Company in spreading the auto and seat belt safety message. Planned activities include courtesy auto inspections, demonstrations, films, and distribution of related safety information.

The first of such activities will be courtesy auto safety inspections conducted by the Arkansas State Police beginning Tuesday, June 1, 1982. The inspections will be available for four consecutive days between the hours of 2:00 p.m. and 5:00 p.m. and will cover critical items such as lights, brakes and tires. No citations or inspection stickers will be issued. This is an excellent opportunity to avoid a possible accident or future citation with a quick stop before or after work.

To emphasize the importance of seat belt usage, a "shock sled" demonstration is planned in conjunction with the Teletype Club annual Family Fun Day on Sunday, June 13, 1982, at War Memorial Park. This demonstration, through the cooperation of the Arkansas Highway Safety Program, will enable you and your family to see the effects of a five mile per hour impact. Additional demonstrations will be scheduled at the plant for all employees.

The use of seat and shoulder safety belts has been shown to reduce the auto accident death-rate by more than one half. Our concern for your safety is completely humanitarian, but it is also good business. After all, YOU are the most valuable asset of the Teletype Corporation.

J. L. O'MARRA - 40

Take your life in your hands-- Buckle Up!

"You are the most valuable asset of the Teletype Corporation."

With that statement in a letter to all employees, Jack O'Marra, vice president and general manager, established the spirit of our seat belt and road safety drive. Special posters, courtesy on-premises auto inspections by State police, demonstrations with a five mph impact "convincer" during Family Fun Day and in the parking lot, and an observation of seat belt usage have been completed in coordination with the Arkansas Highway Safety Program. More activities in the near future will target the urgent need for all of us to use our seat belts.

Teletopics

BERG
ELECTRONICS

E. I. du Pont de Nemours & Company
INCORPORATED
New Cumberland Pennsylvania 17070 Telephone (717) 938-6711

March, 1980

TO: ALL EMPLOYEES

This is to announce that starting April 1, 1980 through September 31, 1980, your 1980 Off-The-Job Safety Committee will be conducting a seatbelt contest entitled, "Snap It Up."

This contest is being held in conjunction with the Governor's Traffic Safety Council's Campaign to improve seatbelt usage in the four county areas of Cumberland, York, Lancaster and Dauphin. The successful results of our campaign here at Berg will be issued to the Safety Council.

All employees in the North Plant, South Plant and Distribution Center will be one safety team.

To win one of the prizes listed in the attached brochure, we must have two months at 90% plus wearing seatbelts. To determine this percentage, unannounced audits will be conducted.

We will need an individual effort by all of us to achieve this difficult, but worthwhile goal.

So, let's all "Snap It Up" so we can pick a prize.

YOUR 1980 OFF-THE-JOB SAFETY COMMITTEE

SAFETY BELT AUDIT FOR ENFORCEMENT
ILLINOIS BELL TELEPHONE

A Company vehicle, signed out to _____

RC_____

was observed entering/leaving the HQ Motor Pool on_____.

The Driver was:

☐ Using available restraint devices. We appreciate this safe behavior.

☐ Not using available restraint devices. Please remind the employee of the Company standard regarding their use.

_____ Passenger(s) were in the vehicle. They were:

☐ Using restraint devices

☐ Not using restraint devices.

District Manager-
Corporate Safety

EMPLOYEE SAFETY BELT EDUCATION

E.I. DUPONT

CARL DE MARTINO"S COMMENTS ABOUT THE USE OF SEAT BELTS

(Employee Relations Department's Wilmington Offices Safety Meeting, January 9, 1981)

When we're hired by Du Pont we accept certain obligations. I'll just give you two examples. One is our commitment to give a fair day's work for a fair day's pay. Another one, and a most important obligation, is to protect ourselves from injury, to "Put Safety First." In these and in most of the other obligations we accept with our job, we do quite well, except in one area--and that is in wearing seat belts. I would rate our performance, corporately, as quite poor. Here are a few statistics on seat belt use.

Nationally, surveys show about 85 percent of car drivers and passengers are not buckled-in. Based on surveys at some Du Pont plants, more than 60 percent of the Du Ponters are not buckled-in. At other company locations, it is believed nonuse may be as high as 75 percent to 80 percent. Compared to our adherence to other safety practices, this is distressing.

Here are a few accident statistics. Delaware's highways claimed 156 lives in 1980. The police said only four were apparently wearing seat belts; 152 obviously were not.

Of the 44 Du Ponters who were fatally injured off-the-job, worldwide, during 1980, 32 (or 72%) died from car accidents. Only two were wearing seat belts.

In our own department, our records since 1953 show 26 employees experienced time-losing off-the-job injuries from car accidents. Two were killed, and as far as we know they were not wearing seat belts. The driver in one crash was struck almost head-on. He reported that seat belts saved his and his wife's lives.

About an hour ago, Ned Walters called and said, "I've got a pretty dramatic case for you to use in your talk today. Beth Lochonic in the Safety and Fire Protection Division received word her parents' car was struck by a tractor-trailer truck this morning when the truck swerved and crossed a median strip to avoid hitting a car that entered the highway from a side road. Their small car was totaled. Both of her parents were wearing seat belts. Her mother is injury-free and her father has a sprained wrist." I don't think we could have arranged a much more dramatic example than this.

It's pretty clear that unsafe drivers ought to wear belts. I hope we don't have any unsafe drivers here, so let's assume we are all safe drivers. Let me give you another statistic. Seventy percent of all U.S. drivers involved in fatal accidents were driving within the law, observing safe driving practices, and had no serious driving violations on their records. In other words, they were safe drivers at the time of their accident. So when you come back to the question "Who needs seat belts?" it's pretty clear that safe drivers need them also.

For reasons these statistics and experiences support, we are having a corporate push on seat belt safety. Seat belts do save lives. You can't argue with that. The statistics are just overwhelming. It has been proven in just too many ways.

In closing, let me leave you with these thoughts. We care about you; we care about each other. We don't want you or anyone else to be injured. So, obviously, we want you to protect yourself with seat belts. Let me urge you to use this protection that perhaps will save your life. Finally, let me ask you to comply with Montague's thought, "The idea is to die young, as late as possible."

Thank you.

(Released February, 1981, by the Safety and Fire Protection Division, Wilmington.)

APPENDIX C : SITE-VISIT INTERVIEW GUIDELINES
(Pre-Pilot Site Visit)

CORPORATE SAFETY

1. Does management have a strong commitment to employee safety belt use and to the program/policy?

   a. How does management at each level "commit" to the program?

   b. How does corporate safety and line management interact in regard to the program/policy?

   c. Does top management attend safety meetings in the company?

   d. Are any meetings concerning safety belt use chaired by top management?

   e. Does top management receive reports regarding employee safety belt use?

   f. Is top management personally involved in the actual conduct of safety belt audits?

   g. Is top management personally involved in accident investigation?

   h. What rank does the safety officer hold within the corporate structure?

2. What are the specific program goals and objectives?

   a. What measurement technique is used in assessing success/effectiveness of the program?

   b. Are there pre-program measures of employee safety belt use or consequence of level of use available?

3. How are goals and objectives decided upon?

   a. If goals are not written, are there more subtly specified goals and objectives? How are they specified?

   b. How visible to employees are the goals and objectives, and how are they publicized?

4. Is there a mandated safety belt use policy?

   a. What is the history behind the policy/program?

   b. How is the policy publicized?

      -written form
      -verbally (specify settings for transmittal)

5. What positive incentives exist for employees to use safety belts?

   a. Special campaigns/contests

   b. Exact nature of "reward" process

   c. Are there intangible or unobtrusive incentives?

6. What positive incentives exist for line management?

   a. Reward type and schedule

7. What negative incentives exist for line management?

8. Disciplinary procedures -- negative incentives for employees?

   a. Range of discipline for non-compliance

   b. Is discipline actually carried out?

   c. How are non-users identified?

   d. How are employees made aware:

      -that there is a discipline system
      -that people have been disciplined

   e. Attitudes of potential recipients/enforcers toward discipline. Is counseling part of disciplinary process?

9. Accident Review

   a. Is there a motor vehicle accident review process? What is it?

   b. Who is involved in the investigation/review of motor vehicle accidents? What is the highest level of management represented?

   c. Is safety belt use an issue in the review? Is self-reported use ever contested?

   d. How does the review fit into the total program -- incentives, discipline, education, evaluation, etc.

10. Auditing

   a. Is there regular auditing of safety belt use? What is the auditing process?

   b. Who is involved in the auditing process?

   c. How does auditing fit into the total program?

   d. How frequently is auditing done?

   e. Have there been pre/post audits of special campaigns?

11. Educational effort

   a. Does an overall safety education effort exist?

   b. Does a safety belt use education effort exist?

   c. Is education personalized/specialized by employee function or otherwise?

   d. How does safety belt use fit into new employee training, on-the-job

training, and supervisor-manager training?

e. Are employees given driver training such as defensive driving, skid school, etc.? Which employees?

f. Educational materials used

-format and source
-names of films, titles of booklets, etc.

g. Exposure to education

-format of exposure
-frequency of exposure
-sources of exposure

h. Special educational efforts (e.g., seatbelt convincer)

12. Implementation of program/policy

a. Who is ultimately responsible for implementing the program?

b. What are the specifics of the delineation of responsibility?

c. What are the specifics on <u>how</u> that responsibility is carried out?

13. Communication/information (internal)

a. Communications plan and focus

b. Media utilized

c. Supporters, etc.

14. Communication/information (external)

a. Communications plan and focus

b. Media utilized

c. Supporters, etc.

15. Program effectiveness

a. How does employer measure whether or not the program works?

b. What percentage of employees are using safety belts on or off-the-job (depending upon program focus)?

c. What were wearing rates prior to the program's inception? (pre-program audit statistics or self-report on pre-program belt use behavior)

d. Counting "saves" since program inception and/or other level-of-injury impact information.

e. Cost-savings analysis

f. Recordkeeping and analysis

16. Program background and implementation history

    a. Why was the program implemented?

    b. Who (individuals, positions, etc.) were the people instrumental in conceiving and implementing the program (or special campaign if relevant)?

17. Employer information data (Phase 1 data collection sheet)

18. Site characteristics

19. Vehicle maintenance

20. Other

    a. Intervening variables such as a strong community-based program in operation, etc.

    b. Program outreach; community involvement, etc.

SUPERVISORS

1. How do supervisors see management's commitment to employee safety belt use and to the program/policy?

2. How do the supervisors see the role of corporate safety in making the program work?

3. How do they view their own role in encouraging employee to wear safety belts?

4. What are the specific program goals and objectives?

   a. How are they set -- by whom (supervisor involvement)?

   b. How do goals and objectives affect an individual supervisor?

   c. How are supervisors made aware of goals and objectives? Do they in turn relay the information to employees?

5. What do supervisors have to do with the mandated safety belt policy?

6. Are supervisors involved in the creation and/or delivery of positive reinforcement to employees for wearing safety belts? How does this work? Negative?

7. Are their positive incentives for supervisors for their employees to wear safety belts? How does this work? Negative?

8. How are supervisors involved in the employee education effort having to do with safety belts? What are the functions of a supervisor in this regard?

9. Who is ultimately responsible for making the program work? How is this accomplished?

10. How does a supervisor communicate with his employees about safety belt use issues?

11. How do supervisors see the role of internal and external communications media in making the program work?

12. How do supervisors know if their efforts to encourage employees to wear safety belts are working?

13. What do supervisors feel are the most important aspects of the policy/program in making it effective?

14. Do they see any problems with the current functioning of the program -- what would remedy these difficulties?

15. What part do supervisors play in the accident review process? How important do they feel this process is to the total program?

16. How are supervisors involved in safety belt audits?

EMPLOYEES

1. How do employees see management's commitment to employee safety belt use and to the program/policy?

   a. How do employees measure the level of commitment?

2. To what extent do employees perceive supervisors as channels for the program/policy?

3. How do employees perceive the following:

   a. Goals and objectives

   b. Mandated policy

   c. Positive incentives

      -including special campaigns/contests

   d. Negative incentives/discipline

4. Do employees feel the safety belt education efforts are relevant and effective?

   a. Do employees have input?

   b. How does safety belt education fit into the overall safety program (if applicable)?

   c. Which component(s) of the safety belt education effort do employees see as most effective and why? (e.g., new employee orientation, on-job safety training, skid-school, etc.)

5. How do employees perceive the communications network(s) regarding employee safety/safety belt use?

   a. Are they adequately informed regarding policy/program-relevant issues?

   b. Do they get feedback on how the program is working?

   c. Do they see results of positive/negative incentives?

   d. Do they benefit from the review of accidents? How?

6. How do employees perceive the practice of auditing safety belt use?

7. What is the most important influence that their employer is providing in encouraging them to wear safety belts?

   a. Second most important?

   b. Third most important?

8. Do they wear belts on and off-the-job?

   a. When did they begin and to what do they attribute initiation of the practice of safety belt use? (media campaign, employer program, friends, accident, etc.)

9. What do employees think of employers involving their families in the safety belt program? Is this effective in promoting use?

10. Are there any problems with the current safety belt program/policy?

RECORDS

- Program goals and objectives and available reports on their status.
- Mandated policy and disciplinary protocols
- Incentive program materials, along with specifications of awards, etc.
- Accident review procedures and reviewing committee
- Corporate structure vis-a-vis safety issues (including safety belt program) including functioning of committees if applicable.
- Auditing procedures and results (pre-program statistics if available) and other measures of effectiveness
- Educational materials, plans, and policies
- Internal communications involved with safety belt use program (safety/accident reports, newsletters, employee testimonials, etc.)
- External communications involved with safety belt use program (press releases, etc.)
- Program background and implementation history
- Site and employer information
- Community/family outreach materials
- Examples of relevant recordkeeping

APPENDIX D: DELPHI WORKSHEETS AND PROGRAM ELEMENT WEIGHTINGS

Delphi Participants

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   University of North Carolina
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3. Dr. Scott Geller
   Department of Psychology
   Virginia Polytechnic Institute and
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   Blacksburg, Virginia

4. Dr. Christy Hughes
   Director
   Safety and Health Joint Programs
   and Driver Improvement Programs
   National Safety Council
   Chicago, Illinois

5. Mr. Herman Dean
   Safety Director
   Laughlin Air Force Base
   Del Rio, Texas

6. Mr. Stan Williams
   Safety and Fire Protection Division
   E.I. Dupont
   Wilmington, Delaware

7. Mr. Martin Lee
   Lee-Gosselin Associates Ltd.
   Quebec, Canada

delphi worksheet

We appreciate the time you are taking to participate in this project as a member of the Delphi group. Your assistance will be invaluable in developing a model employee safety belt program for employers across the U.S.

This worksheet was developed to help structure the review of program elements which may contribute to the success of existing safety belt programs and to identify additional elements for consideration. The worksheet is comprised of three parts. We request that you complete all items on the worksheet and return it to PSS in the enclosed envelope no later than July 15, so that we may keep to our schedule.

Thank you again. We look forward to receiving your comments and suggestions.

A. Here are the elements that PSS has seen in operation at employer sites where there is strong evidence of the existence of a successful employee safety belt program. Please review the list for its completeness in presenting program elements, and add to the list if you feel that additional elements of success should be included. If you wish to alter an existing element, please write it in the space provided on Page 3 as if it were a new element. No particular order of presentation is reflected in the following list of program elements:

1. A high level of employee "safety consciousness", evidenced by the operation of an overall safety program for employees.

2. Management's commitment to the program and policies.

3. Very specific and highly publicized goals and objectives for the employee safety belt program which often are based upon the past safety record of the company.

4. Responsibility for employee safety rests with line management.

5. Positive incentives for good safety records are given to line management.

6. The company mandates a well-publicized safety belt use policy for all employees.

7. Disciplinary procedures are well defined and publicized for non-compliance with the policy.

8. There is an on-going personalized safety education and training effort for all employees.

9. Employees who drive on-the-job are provided with driver training/ defensive driving instruction as part of their job.

10. There are positive incentives for employees to use their safety belts.

11. Employee participation in safety training is promoted.

12. The company conducts systematic accident recordkeeping -- including the recording of safety belt use or non-use.

13. Accident cases on-the-job are subject to a company review procedure.

14. Companies have attempted some form of general safety belt use audit -- dependent upon the company's physical setup and other factors -- to obtain a general measure of employee compliance with the safety belt use policy.

15. Company vehicles are routinely checked to insure that safety belts are in good working order.

16. Special efforts are directed toward the encouragement of off-the-job safety belt use -- including outreach to family members.

Add other program elements which you feel contribute to program success. Please include a brief note about your rationale for including each element. If extra space is needed, please use additional sheets of paper.

B. For each program element listed below, please indicate your position, along with a brief note on your rationale or underlying assumption. The rating descriptors are defined as follows:

Very Important: First order of necessity in making a safety belt program successful.

Important: Contributes substantially to the success of an employee safety belt program.

PROGRAM ELEMENTS
1. A high level of employee "safety consciousness", evidenced by the operation of an averall safety program for employees.
2. Management's commitment to the program and policies.
3. Very specific and highly publicized goals and objectives for the employee safety belt program which often are based upon the past safety record of the company.
4. Responsibility for employee safety rests with line management.
5. Positive incentives for good safety records are given to line management.
6. The company mandates a well-publicized safety belt use policy for all employees.
7. Disciplinary procedures are well defined and publicized for non-compliance with the policy.

Slightly Important: Contributes to success to a low degree -- serves more as "icing on the cake".

Unimportant: Does not contribute to program success to any significant extent. Should not be included as a success factor for purposes of model program development.

Negative: Detracts from the success of an employee safety belt program.

NOTE: PLEASE USE THE TABLE BELOW AND ON THE FOLLOWING TWO PAGES. IF ADDITIONAL SPACE IS NEEDED, PLEASE ATTACH SHEETS AS NECESSARY.

Very Imp.	Impt.	Sl. Impt.	Unimpt.	Negative	RATIONALE/UNDERLYING ASSUMPTION

B. (Cont'd.) Continue with the rating of program elements, using the same descriptors as in pages 4 and 5:

Very Important: First order of necessity in making a safety belt program successful.

Important: Contributes substantially to the success of an employee safety belt program.

PROGRAM ELEMENTS

8. There is an on-going personalized safety education and training effort for all employees.

9. Employees who drive on-the-job are provided with driver training/ defensive driving instruction as part of their job.

10. There are positive incentives for employees to use their safety belts.

11. Employee participation in safety training is promoted.

12. The company conducts systematic accident recordkeeping -- including the recording of safety belt use or non-use.

13. Accident cases on-the-job are subject to a company review procedure.

14. Companies have attempted some form of general safety belt use audit -- dependent upon the company's physical setup and other factors -- to obtain a general measure of employee compliance with the safety belt use policy.

15. Company vehicles are routinely checked to insure that safety belts are in good working order.

16. Special efforts are directed toward the encouragement of off-the-job safety belt use -- including outreach to family members.

Slightly Important: Contributes to success to a low degree -- serves more as "icing on the cake".

Unimportant: Does not contribute to program success to any significant extent. Should not be included as a success factor for purposes of model program development.

Negative: Detracts from the success of an employee safety belt program.

Very Imp.	Impt.	Sl. Impt.	Unimpt.	Negative	RATIONALE/UNDERLYING ASSUMPTION

C. PSS would like your suggestions regarding programs which you consider to be highly successful in motivating employees to wear safety belts. Please list such companies along with a brief note on the major indications of program success for each one. This item will not be part of the second Delphi iteration. We simply want to consider your suggestions in selecting companies for detailed program analysis.

DELPHI WORKSHEET INSTRUCTIONS
(Delphi #2)

The following eight program components have been selected as the most important for program success according to the analysis of the first Delphi worksheet.

We would now like to look at the relative nature of these components and at the importance of various elements which might contribute to each component within a successful safety belt program.

Please assign a weight between 0 and 100 to each of the eight major components so that the weights add up to a total of 100 points for a total program. After assigning weights to each of the eight components, look at each major component and for each one assign a weight between 0 and 100 points to the elements that comprise the component. Feel free to assign weights as you feel most appropriate -- you might wish to weight components and/or elements evenly, or your experience may indicate that one component receive the majority of weight and the others get a weight of near "0" -- any combination of weights to reach a total of 100 points is permissible.

As you complete this worksheet, please envision a program primarily aimed at motivating employees to wear belts on-the-job. Although we did receive one worksheet which indicated otherwise, PSS regards on and off-the-job program considerations to be fairly similar except in the area of mandate/discipline/enforcement. We have provided a space at the end of the worksheet for you to comment on other differences you might believe exist between the two types of program focus.

Note: No negative weights should be assigned to components or their elements; "0" is the lowest weight allowed.

A. PROGRAM COMPONENTS AND ELEMENTS

WEIGHT

1. THERE IS A STRONG AND ACTIVE MANAGEMENT COMMITMENT TO THE SAFETY BELT PROGRAM. _____

1.1 Management's commitment and participation is evident at all levels of management.
weight

1.2 Top officials are personally involved and visible in safety belt program activities.
weight

1.3 There is strong evidence of a general commitment to safety on the part of management.
weight

1.4 Management is willing to work with existing union officials to create a program that is amenable to the union.
weight

1.5 Management sets goals and objectives for the safety belt program.
weight

1.6 Management is willing to expend the funds necessary to have a successful safety belt program (e.g., they are willing to have people stop their work for the viewing of films, educational sessions, etc.)
weight

1.7 There is a person (or people) assigned specifically to coordinate the safety belt program.
weight

1.8 Management supports the regular checking of motor vehicles for safety belt function, along with other routine maintenance and safety inspections.
weight

1.9 Management publishes a policy regarding safety belt use by employees.
weight

WEIGHT

2. THE COMPANY KEEPS SYSTEMATIC RECORDS OF MOTOR VEHICLE ACCIDENTS, INCLUDING INFORMATION ABOUT SAFETY BELT USE. _____

2.1 Cost analysis of injuries and accidents are conducted. _____ weight

2.2 The safety belt use factor is examined as part of cost analysis. _____ weight

2.3 Records are reviewed on a regular basis vis-a-vis relevant goals and objectives. _____ weight

2.4 Injury due to motor vehicle accidents is documented in detail. _____ weight

2.5 Costs, injury, and cause of injury are quickly and easily accessible for any given incident. _____ weight

2.6 Motor vehicle accident cases can easily be selected out of total accident cases. _____ weight

2.7 Off-job motor vehicle accident and injury records are available for study. _____ weight

3. THERE ARE POSITIVE INCENTIVES FOR EMPLOYEE SAFETY BELT USE. _____

3.1 Positive incentives are given for individual's belt use. _____ weight

3.2 There are positive incentives for group or company-wide belt use. _____ weight

3.3 The incentives are of a tangible nature. _____ weight

3.4 Incentive award is based upon belt use observation (e.g., an incentive audit). _____ weight

3.5 Incentive award is based upon self-report or "pledge" of safety belt use. _____ weight

3.6 Line management is given incentives based upon the safety belt use of employees supervised. _____ weight

3.7 Individuals are recognized for wearing safety belts (e.g., names may be posted and/or supervisors notified that the employee wore the belt when audited. _____ weight

3.8 Incentives are awarded on a competition basis -- shifts, work groups, divisions competing for the best wearing rates, etc. _____ weight

3.9 Incentives are geared toward the socio-economic status of the target employees -- different incentives may be used for blue collar workers than for white collar. _____ weight

WEIGHT

4. THE COMPANY USES A SAFETY BELT AUDITING PROCEDURE TO EVALUATE THE PROGRAM'S EFFECTIVENESS IN MOTIVATING EMPLOYEES TO USE THEIR SAFETY BELTS. _____

4.1 Audits are conducted at frequent intervals of the program to determine how well the effort is succeeding in its intent. _____ weight

4.2 Audits are conducted using a random sample of employees. _____ weight

4.3 Audits are conducted unobtrusively. _____ weight

4.4 Audits are tied to positive incentive award. _____ weight

4.5 Audits are tied to negative incentives and/or disciplinary procedures (e.g., those found not wearing during an audit may be negatively reinforced in some way). _____ weight

5. THERE IS A MANDATED POLICY WHICH IS ENFORCED. _____

5.1 The company mandate states that safety belt use is required. _____ weight

5.2 The mandate prescribes disciplinary measures in the event of non-compliance. _____ weight

5.3 Accidents are investigated through a standardized process and safety belt use is examined as part of the normal investigation. _____ weight

5.4 Audits are used as a means of enforcing the mandated use of belts. _____ weight

5.5 Accident review/investigation is tied to the enforcement/discipline process. _____ weight

5.6 Supervisors are involved in the enforcement/disciplinary process. _____ weight

5.7 Senior management is involved in the enforcement/disciplinary process (e.g., in one employment setting, an employee noted to have not worn the safety belt during an audit receives a letter from the Plant Manager). _____ weight

5.8 Employees who drive on-the-job are checked on a regular basis for safe driving practices, including safety belt use. _____ weight

6. THE COMPANY HAS A COMPREHENSIVE SAFETY BELT EDUCATION PROGRAM. _____

6.1 New employees are given introductory safety education which includes safety belt use education. _____ weight

6.2 The company uses various learning aids such as films, lectures by company officials, visiting speakers who discuss different aspects of safety belt use, etc. _____ weight

6.3 Upper management takes part in the education effort (e.g., the President of the company may address a safety meeting about employee use of safety belts, the company seat belt policy, etc.) _____ weight

WEIGHT

6. (cont'd.)

6.4 Employees receive education about safety belt use from their supervisors.

weight

6.5 Employees are given driver education/defensive driving training.

weight

6.6 There is a safety committee or similar group whose responsibility it is to plan safety education efforts, including safety belt use education.

weight

6.7 Employees are provided written materials regarding such topics as the value of safety belt use, safety belt effectiveness, common "myths" about safety belt use, etc.

weight

6.8 Employees are involved in the presentation of safety belt education program -- by suggesting programs/approaches and/or actually participating in the presentation.

weight

7. COMMUNICATIONS WITHIN THE COMPANY REGARDING THE EMPLOYEE SAFETY BELT PROGRAM ARE ONGOING AND MULTI-FACETED. _____

7.1 The mandate for safety belt use is well publicized, along with associated disciplinary procedures.

weight

7.2 Safety belt program goals and objectives are well publicized.

weight

7.3 The status of the program vis-a-vis goals and objectives, audit results, incentive awards, etc. are well publicized.

weight

7.4 Employees are involved in the setting of goals and objectives for the employee safety belt program.

weight

7.5 Employees are involved in the design of the program (even if filling out a questionnaire is the only involvement).

weight

7.6 The safety belt program and its impact are kept highly visible through various media within the company: bulletin boards, newsletters, company newspapers carrying such items as testimonials of employees "saved by the belt", etc.

weight

7.7 Supervisors and workers have close contact and open communication about safety belt use (and other safety issues) as well as regular job related matters.

weight

8. THERE IS AN OUTREACH EFFORT TO SPREAD THE SAFETY BELT MESSAGE BEYOND THE WORKPLACE. _____

8.1 The employee's family is touched by the safety belt program through various program elements -- brochures to take home, films shown on the weekend, child restraint device education efforts, etc.

weight

8.2 The company makes an effort to reach the community at large with the safety belt message (e.g., sending speakers to civic groups, etc.)

weight

8. (cont'd.)

8.3 There is an effort to involve the community in the company safety belt program (e.g., making a "deal" with local merchants to provide some of the incentive awards, etc.)

weight

8.4 The local media are kept informed of special safety belt campaigns, and goals achieved.

weight

PLEASE CHECK ITEMS 1-8 TO BE SURE THAT THE WEIGHTS YOU HAVE ASSIGNED TO THE EIGHT ITEMS TOTAL 100 POINTS. ALSO BE SURE THAT WITHIN EACH OF THE MAJOR ITEMS, THE WEIGHTS YOU HAVE ASSIGNED TO THE ELEMENTS TOTAL 100 POINTS.

TOTAL

B. AS YOU COMPLETED PART A, OTHER ELEMENTS WITHIN THE MAJOR COMPONENTS MAY HAVE OCCURRED TO YOU. SPACE IS PROVIDED BELOW FOR YOU TO INDICATE ADDITIONAL ELEMENTS AND THE WEIGHTING IMPLICATIONS OF THEIR INCLUSION IN ANY GIVEN MAJOR COMPONENT.

C. OFF-THE-JOB CONSIDERATIONS. PLEASE LIST OR DISCUSS BELOW ANY CONSIDERATIONS/ DIFFERENCES THAT YOU BELIEVE ARE IMPORTANT ONES IN DESIGNING A PROGRAM AIMED AT GETTING EMPLOYEES TO WEAR SAFETY BELTS OFF-THE-JOB AS OPPOSED TO AN ON-THE-JOB PROGRAM. ESPECIALLY NOTE DIFFERENCES OTHER THAN MANDATE/DISCIPLINE/ENFORCEMENT IF YOU THINK THEY ARE IMPORTANT TO PROGRAM SUCCESS.

Thank you for your time and help. Please feel free to write more on Sections B and C if necessary.

* * *

PROGRAM ELEMENT WEIGHTINGS BY COMPONENT

Management Commitment

1. Management is willing to expend funds necessary to have a successful program ($\bar{X}$ = 16.2)

2. There is a person or people assigned to coordinate the program. ($\bar{X}$ = 16)

3. Management's commitment and participation is evident at all levels of management. ($\bar{X}$ = 13.7)

4. Top officials are personally involved and visible in safety belt program activities. ($\bar{X}$ = 10.8)

5. Management publishes a policy regarding employee safety belt use. ($\bar{X}$ = 10.8)

6. There is strong evidence of a general commitment to safety on the part of management. ($\bar{X}$ = 8.8)

7. Management is willing to work with union officials to create program that is amenable to the union. ($\bar{X}$ = 8.7)

8. Management supports the regular checking of motor vehicles for safety belt function, along with other routine maintenance and safety inspections. ($\bar{X}$ = 5.8)

9. Management sets goals and objectives for the safety belt program. ($\bar{X}$ = 4.7)

Positive Incentives*

1. Incentive award is based on belt use observation. (e.g., incentive audit) ($\bar{X}$ = 20)
2. Positive incentives are given for individual's belt use. ($\bar{X}$ = 19.2)

3. Incentives are of a tangible nature. ($\bar{X}$ = 12.5)

4. There are positive incentives for group or company-wide belt use. ($\bar{X}$ = 11.7)

5. Incentives are awarded on a competition basis -- shifts, work groups, divisions competing for the best wearing rates, etc. ($\bar{X}$ = 9.2)

6. Line management is given incentives based on the safety belt use of employees supervised. ($\bar{X}$ = 5.8)

7. Individuals are recognized for wearing belts (e.g., names may be posted an/or supervisors notified that employee wore the belt when audited. ($\bar{X}$ = 2.5)

8. Incentives are geared toward SES of target employees ($\bar{X}$ = 2.5).

---

*#5, "Incentive award based on pledge" was given a weighting of "0" by all Delphi members.

Mandate/Enforcement

1. The company mandate states that safety belt use is required. ($\overline{X}$ = 29.2)

2. The mandate prescribes disciplinary measures in the event of non-compliance ($\overline{X}$ = 15.8)

3. Supervisors are involved in the enforcement/disciplinary process. ($\overline{X}$ = 15)

4. Employees who drive on-the-job are checked on a regular basis for safe driving practices, including safety belt use. ($\overline{X}$ = 11.7)

5. Accidents are investigated through a standardized process and safety belt use is examined as part of the normal investigation. ($\overline{X}$ = 9.2)

6. Accident review/investigation is tied to the enforcement/discipline process. ($\overline{X}$ = 7.5)

7. Senior management is involved in the enforcement/disciplinary process. ($\overline{X}$ = 6.7)

8. Audits are used as a means of enforcing the mandated use of belts. ($\overline{X}$ = 5.8)

Recordkeeping

1. Cost analysis of injuries and accidents are conducted. ($\overline{X}$ = 22.4)

2. Off-job motor vehicle accident and injury records are available for study ($\overline{X}$ = 19.1)

3. Motor vehicle accident cases can easily be selected out of total accident cases. ($\overline{X}$ = 14.9)

4. Injury due to motor vehicle accidents is documented in detail. ($\overline{X}$ = 14.1)

5. Costs, injury and cause of injury are quickly and easily accessible for any given incident. ($\overline{X}$ = 14.1)

6. Records are reviewed on a regular basis vis-a-vis relevant goals and objectives.

7. The safety belt use factor is examined as part of cost analysis. ($\overline{X}$ = 7.4)

Education

1. New employees are given introductory safety education which includes safety belt use education. ($\overline{X}$ = 22.1)

2. The company uses various learning aids such as films, lectures by company officials; visiting speakers who discuss different aspects of safety belt use, etc. ($\overline{X}$ = 19.6)

3. Employees are involved in the presentation of safety belt education program -- by suggesting programs/approaches and/or actually participating in the presentation. ($\overline{X}$ = 13.8)

4. There is a safety committee or similar group whose responsibility it is to plan safety education efforts, including safety belt use education ($\overline{X}$ = 11.3)

5. Employees are provided written materials regarding such topics as the value of safety belt use, safety belt effectiveness, common "myths" about safety belt use, etc. ($\overline{X}$ = 10.4)

6. Upper management takes part in the education effort. ($\overline{X}$ = 9.6)

7. Employees receive education about safety belt use from their supervisors ($\overline{X}$ = 7.1)

8. Employees are given driver education/defensive driving training. ($\overline{X}$ = 6.3)

Communication/Promotion

1. Safety belt program and its impact are kept highly visible through various media in the company: bulletin boards, newsletters, company newspapers with such items as testimonials, "saves", etc. ($\overline{X}$ = 26.6)

2. Mandate for use is publicized along with associated discipline. ($\overline{X}$ = 18.2)

3. The status of the program vis-a-vis goals and objectives, audit results, incentive awards, etc. are well publicized. ($\overline{X}$ = 14.9)

4. Supervisors and workers have close contact and open communication about safety belt use (and other safety issues) as well as regular job-related matters. ($\overline{X}$ = 14.9)

5. Safety belt program goals and objectives are well publicized. ($\overline{X}$ = 11.6)

6. Employees are involved in the setting of goals and objectives for the safety belt program. ($\overline{X}$ = 7.4)

7. Employees are involved in design of the program (even if filling out a questionnaire is the only involvement). ($\overline{X}$ = 6.6)

Outreach

1. Employee's family is touched by the program through various elements. ($\overline{X}$ = 38.3)

2. Effort to involve community -- networking with local merchants, etc. ($\overline{X}$ = 25.8)

3. Local media are kept informed. ($\overline{X}$ = 16.7)

4. Attempts to reach community at large with safety belt message. ($\overline{X}$ = 19.2)

Auditing/Evaluation

1. Audits are conducted using a random sample of employees. (X = 22.2)

2. Audits are conducted at frequent intervals of the program to determine how well the effort is succeeding in its intent. (X = 20.6)

3. Audits are tied to positive incentive award. ($\overline{X}$ = 20.6)

4. Audits are conducted unobtrusively. ($\overline{X}$ = 16.7)

5. Audits are tied to negative incentives and/or disciplinary procedures. ($\overline{X}$ = 3.3)

APPENDIX E: PILOT STUDY SUMMARY, BERG ELECTRONICS

PSS and Associates conducted the pilot study for Phase II data collection at Berg Electronics at Camp Hill and Fishing Creek, Pennsylvania. The objective was to test and refine data collection methodology for the balance of site visits planned for the effort.

Background

Berg Electronics is part of E.I. Dupont and is a manufacturer of electronic components which are marketed to major appliance, computer and tele-communications industries. Berg employs approximately 3,500 employees worldwide, approximately 1100 of whom work at the Camp Hill and Fishing Creek complexes. The company has a fleet of 143 cars.

Most on-the-job driving consists of local (30-40 miles) trips by sales/service engineers and managers, but many engineers may travel up to 1500 miles on round-trip visits to corporate headquarters in Wilmington, Delaware. In 1980, 2.2 million miles were logged on company business.

Berg is the first large company to demonstrate success of great magnitude in motivating off-the-job wearing of safety belts among employees through an innovative incentives approach. A one-on-one education campaign had resulted in less than one-half of the company's employees wearing safety belts upon arrival to work. Ninety percent compliance was achieved utilizing the highly innovative incentives approach. The objective of the incentives approach was to motivate the new belt-using behavior and reinforce it over time so that it might become a habit for employees.

At program inception Fishing Creek and Camp Hill employees were all at the Fishing Creek site. There were approximately 1200 employees at Fishing Creek with a 50/50 ratio of blue to white collar workers. Shortly following program implementation, the Camphill site was opened to house approximately 350 mainly white collar, employees. The Fishing Creek site houses 820 employees who are mostly skilled blue collar workers.

At the time of PSS's site visit to Berg, the Fishing Creek site's program was aimed at off-the-job safety belt use and was utilizing their individual incentive program in an ongoing aftermath of their innovative group incentive campaign. Camp Hill's focus was on on-the-job safety belt use; their approach reflects local management's interpretation and application of Dupont's guidelines for safety belt use as an employee safety issue. Fishing Creek, of course, has a similar approach; however, due to the low number of employees involved in on-the-job driving at that site it does not represent as much of a focus as at Camp Hill. Camp Hill is the main Berg headquarters for marketing, and service people who drive regularly on the job. Berg has a number of small regional offices with a small staff of sales/service employees for which Camp Hill represent the headquarters location.

For purposes of this study, both sites were studied individually and findings presented across relevant subject headings. Where the two sites differ, such differences are noted; otherwise their programs are the same.

Program Effectiveness

Attachment A to this study is a synopsis of Berg's safety belt campaign at Fishing Creek, written by Ken Spoonhour who is the program coordinator.

This summary thoroughly explains the campaign/contest, use of individual and group incentives, and auditing procedures. The campaign motivated employees to raise the wearing rate to more than double the rate reported after an education campaign effort at Fishing Creek's facility. The latest data at the time of the site visit revealed a 92 percent wearing rate according to results of an unannounced audit. At Fishing Creek, however, evaluation auditing is combined with individual rewards and a high degree of visibility and fanfare with an emphasis on the participation of upper management. Therefore, the auditing procedure, though unannounced, cannot be in any way called unobtrusive as employees wait in line to enter the gate when an audit is taking place, etc.

At Camp Hill, auditing has not been carried out in a systematic, scheduled form. However, some audits have been conducted by the Central Safety Committee. At the time of the site visit, audits were being conducted by employees on a random, infrequent basis. The most current baseline figure was reported as 83 percent. The observations were made as employees entered the gate to the facility.

In order to test the effectiveness data resulting from Berg's own auditing procedures, PSS provided the program coordinators with a self-report instrument which they could administer to program recipients.

Fishing Creek self-reported wearing rate. The Fishing Creek sample was comprised of workers who report that they drive on-the job an average of 10 percent of the time (or less). Out of the sample of 46 respondents, 80 percent report that they wear safety belts "always" when driving on-the-job. Seventeen percent report that they "usually" wear belts when driving on-the-job. For off-the-job driving, 48 percent of employees report wearing their safety belts "always". Thirty-nine percent report that they "usually" wear belts when driving off-the-job. These figures which total 87 percent of employees reporting that they usually or always wear belts off-the-job is compatible with the 90 percent wearing rate achieved through the company audit.

Camp Hill self-reported wearing rate. The Camp Hill sample was comprised of 92 employees whose driving involvement is reported at approximately 34 percent of the time ($\bar{X}$ = 34 percent). The sample was made up of employees involved in sales/marketing in the Berg regional sales offices. The Camp Hill safety office mailed out the requests for information and transmitted the data to PSS.

The Camp Hill respondents reported almost unanimous wearing of safety belts at all times on company business (92 percent), and 8 percent reported wearing belts "usually" on company business. Off-the-job self-reported showed a 20 percent drop in employees who "always" wear belts -- 72 percent reported "always" wearing belts off-the-job. Twenty-three percent reported themselves as usually and five percent as sometimes wearing belts off-the-job. The self-report figures are compatible with those reported by Berg's Camp Hill safety office after the most recent audit (83 percent of those observed).

Site Visit Interviews

Guidelines developed for interviews were utilized as a basis for the interviews/discussions conducted at both Berg sites (see Appendix C). The format was informal with interviewees encouraged to respond candidly regarding the safety belt program and their own safety belt use.

Interview with employees at Camp Hill. These employees were clearly supportive of the safety belt program, and indeed, the entire safety program at DuPont. They also seemed to view all of the major components of the program favorably, feeling that the multi-faceted aspect of the program was a strength, including:

- Education sessions with films
- Use of audits with award of prizes
- Safety meetings
- Supervisors being conscious of safety
  -- management commitment

Employees felt that the most important element of the program was the way in which it utilized peer pressure to reinforce safety belt use. They described the process of developing safety belt use as one that encounters initial resistance from employees, then gains increasing strength as individuals are convenced of the wisdom of belt use, and finally when the majority uses them, peer pressure operates to maintain and strengthen use.

The constancy of the program was also mentioned as a strength -- there are frequent, regular reminders. In addition, the broad safety consciousness of DuPont is clearly an aid to the safety belt program (e.g., "How could they expect us to take the safety belt program seriously if they aren't as concerned about other aspects of safety and welfare?")

When asked how the program might be improved, employees suggested that there be more emphasis on a rational, educational approach. Most of the employees who participated in the group interview are bright well educated engineers.

Interview with supervisors at Camp Hill. Four supervisors were interviewed This interview was a very convincing demonstration of middle-management's high level of indoctrination into the company's on-the-job safety program. They view the safety belt program as inseparable from the total package and appeared unable to view it as a component. Additional items from this group included:

- Although the company safety policy is the most influencial aspect of the program, the education/awareness program was viewed as second most important.

- They mentioned that the "prizes" -- handouts -- given to safety belt wearers at audits usually had some message (e.g., "buckle up") on them which serve as a semi-permanent reminder to use safety belts -- a possibly useful tip for other companies conducting audits.

Interview with Safety Director at Camp Hill. The Safety Director described the overall safety belt program at Berg and how it was integral to the broad safety program at DuPont. It seemed, however, that most of the safety belt program activities were conducted at the Fishing Creek location. The Camp Hill plant was opened after the program was kicked off at Fishing Creek. It appeared that Camp Hill's activities in the safety belt area had subsided somewhat in the past year -- fewer audits, etc. Last September their audit showed 89 percent wearing; at the end of last May the rate was 83 percent.

The Safety Director made the following major points regarding the program at Camp Hill:

- The corporate/management commitment to safety and, by extension, to the safety belt program, is clearly seen as the linchpin of the program Management is rated, promoted, and demoted in large part on the basis of its safety record. "Safety rates equally with production at DuPont". Interestingly, the Safety Director is not responsible for the safety at the plant -- line management is. And off-the-job safety is seen as nearly as important as on-the-job safety because it too affects lost days and productivity. It is significant that management participates in audits.

- Peer pressure is a strong ingredient. The director believes that distributing something "wearable" (e.g., a pin, etc.) at the audit helps to activate peer pressure -- a key element in the program.

- The Safety Director is supportive of the educational, light touch approach along with mandates and incentives. He feels that it is important to walk the fine line between pushing a strong program, yet not being "big brother". This seems especially appropriate with an educated professional staff -- he feels they should be intelligently persuaded and allowed to internalize the safety belt belief.

Interview with employees at Fishing Creek. Two groups of employees were interviewed at Fishing Creek -- one group of seven and one group of five. All of the employees were highly supportive of the program and the practice of safety belt use (except for one employee who simply refused to wear them). They discussed the importance of management commitment, but the majority in both groups mentioned the educational approach with good films and a credible spokesman (State Policeman) as the most influential. One group was somewhat disdainful of the audits. This group also questioned the accuracy of the audits ("People see the line and quickly buckle up.").

Interview with supervisors at Fishing Creek. Seven supervisors were interviewed, including the Director of the Off-the-Job Safety Committee.

The content of these discussions were much the same as the other interviews at Berg: importance of the "total program", management/corporate commitment, audits, rewards at audits, peer pressure, constant reminders, educational aspects of the program. The supervisors also mentioned, as did the other groups, how the safety belt practices spread to family and friends.

The Fishing Creek supervisors felt that the most important element was "a motivated program coordinator", along with management support, then "a good program" (meaning education), and audits. They felt that the establishment of Off-the-Job Safety Committee was important. It provides employees with an opportunity to participate and accomplishes a lot. They also felt that mandated policies and discipline (for on-the-job use) were very important elements of the total program.

Interview with Safety Director at Fishing Creek. The Safety Director at Fishing Creek was also the creator of the Berg Safety Belt Program and seems to be, in a significant way, responsible for its success. His major characteristics and approach: He is energetic, enthusiastic, involved, and imaginative. He took

risks: He kicked off the program by dressing up as a rabbit at the first audit (followed by a turkey, the hulk, etc.) This had the dual effect of (a) showing how committed he was to the program and (b) getting people to notice and talk about the program. It also served as a nice counterweight to the life-and-death messages of the educational program. The Safety Director also stressed the importance of the overall safety program and its structure. He described, from his viewpoint, the various aspects of the Fishing Creek effort, Berg's total safety effort as it fits into DuPont's safety philosophy and practices.

Overview of Berg interview responses. The following points summarize the major points of interview responses:

- The degree to which the corporate/management commitment to safety is essential to the safety belt program was consistently underscored by all respondents.

- The importance of a comprehensive program was strongly implied by many employees; i.e., by itself, any one component would probably not be very effective.

- The employees interviewed appeared to have responded well to the educational approach of the program -- films, the State Police presentation, and the facts and figures. Although audits and accompanying incentives obviously contributed to the program, most employees seemed to view these as in support of the educational approach. There was also a hint of dislike for audits and gimmicks, a feeling that could grow if not for the educational aspects of the program.

- The Berg sequence could be characterized as a strong kick-off, getting employees aware and involved, followed by a "light touch" approach. The selection of the program coordinator probably contributed greatly to the success of the program.

Program Components

Site visit data and observations have been organized for purposes of this report under appropriate categories as identified through the Delphi process round 1, which was completed shortly after the site visit to Berg.

Management Commitment. At Berg (and DuPont) safety is regarded as a condition of employment. An employee can be discharged more quickly for a deficiency in this area than for most anything else. Plant managers are expected to set a positive safety example for employees.

The safety belt program is part of overall safety. Management is responsible for safety in total. Site managers are totally responsible for the safety of the site. Central committees -- on-the-job and off-the-job safety committees -- are responsible for programs to influence employees. Committees are made up of management personnel. Hazardous incidents are investigated by a committee.

The site receives a safety rating based upon compliance of the site with the Berg/DuPont safety manual. The findings which determine the rating are essentially a performance review for the site manager who sees the results

reported in written form. The safety director of the Camp Hill site is Secretary to the Central Safety Committee and can, therefore, go directly to the site manager with his concerns. The safety director at Fishing Creek and at Camp Hill are both advisors to management -- part of the management team; they advise the line managers who, in turn, must take total responsibility for safety of employees.

First-line supervisors are responsible for employees' knowledge of safety manual contents. Employees are questioned, and the supervisor hears about it if his employees do not know the safety procedures. A checklist is given on safety procedures to new employees during their indoctrination period -- on-the-job use of safety belts is part of the indoctrination. It is mandatory that employees attend safety meetings -- attendance is taken. The supervisor is notified of people who have missed their meeting and must have a 15 minute meeting/personal contact in lieu of the missed meeting.

The Plant Manager at Fishing Creek never misses a safety belt audit at that facility -- his safety record affects his career profoundly. The Plant Manager heads the Central Safety Committee which has eight other committees under its direction. The Off-the-Job Safety Committee, On-the-Job Committee and Serious Incidents Committee are all involved in Berg's total safety belt effort. The year before Berg began its effort at Fishing Creek there were 12 off-the-job employee injuries, nine of which were automobile crashes in which no safety belt was used. The Off-the-Job Committee analyzed the injuries and their cause and tailored the next year's program according to the problem -- lack of safety belt use -- that they had identified. Fishing Creek's Safety Director was then a supervisor on the Off-the-Job Safety Committee and as such was given responsibility to create a program to get employees to wear their belts off-the-job. A proposal was submitted to the Central Safety Committee about the motivational safety belt program. The Central Committee, which meets once per month, voted in favor of the proposed program and funded its implementation and operation.

Upper management has been very visible and actively participating in the incentive audits at both Fishing Creek and Camp Hill. An employee is very likely to see his supervisor or the plant manager as one of the auditors at the front gate.

Mandate/Enforcement

The company is vitally concerned with both on and off-the-job accidents of all types. Safety is a condition of employment and the wearing of safety belts is mandated for all on-the-job driving/riding.

At Berg, as in DuPont in general, there is a real chain of discipline/enforcement. Supervisors will talk to an employee about non-use of safety belts because that supervisor is ultimately responsible for the employee's safety. If that employee is seen without his safety belt or is involved in a non-belted on-the-job crash, the supervisor will be subject to the consequences in his performance review. A supervisor can write into an employee's record that s/he was not wearing belts and should be more safety conscious.

A recorded violation of a safety rule can mean dismissal. A safety violation can hurt a person's career more than a mistake on-the-job. The individual employee is hurt by such a violation, but his supervisor is hurt more.

In the case of a crash the company accident report states whether or not safety belts were worn. A salesman may have to go in for a special appraisal as a

failure to wear belts indicates that he does not know the company policy. If an employee is involved in a motor vehicle accident without the safety belt, his supervisor gets in trouble and the accident-involved employee is actually liable for dismissal The disciplinary policy is not definite about the sanctions to be imposed for failure to wear safety belts, although dismissal is probably the ultimate sanction. Company refusal to pay Workers Compensation costs for an accident where belts were not worn is also a potential sanction; however, this disciplinary action has not been imposed as it would have to be applied in all cases if it is applied in one.

Supervisors and managers are expected to set a positive example for other employees by wearing their safety belts -- especially on the job.

Positive Incentives

Berg has a campaign whereby if, during a specified period of time, there are no on-the-job accidents resulting in injuries each employee on-site receives a prize. Safety belt use, of course, would be theoretically rewarded by this incentive campaign. There is a possibility, however, that this campaign indirectly motivates employees not to report their injuries.

At Camp Hill token prizes are given out in unannounced audits. Belt users may be given buttons which say things like "I wore my seatbelt today" to wear to the safety meeting to be held the same day.

The whole program focus for off-the-job use at Fishing Creek was the initial group effort rewarded with the big prizes from the catalog (See Attachment A) and continually reinforced by small individual rewards given during unannounced audits (Hershey Kisses, deodorant for the automobile, etc.)

Recordkeeping

Berg, along with the rest of DuPont, keeps very accurate, complete and accessible records for on and off-the-job accidents. A Serious Incidents Committee tracks all serious incidents on-the-job which are ultimately published and shared company-wide and analyzed for lessons in prevention and employee safety.

When an individual is going to miss work he calls his supervisor to inform him of the fact and of the reason for absence. Statistics on days lost and reasons for absence are recorded and the results go to DuPont's Wilmington headquarters. The statistics are analyzed yearly for trends to see what is costing the company money.

All on-the-job accidents are investigated by a special investigation team. The person who was involved in the accident is included as part of the accident investigation team. The accident is verbally (and sometimes graphically) created in order to determine if the accident was preventable or not. In the case of motor vehicle accidents, safety belt use is included as part of the investigation, although there are rarely any accidents where an employee reports non-use of the device. All serious incidents are posted so that employees and supervisors can learn from the findings of the investigation. Any incident involving loss of life is posted on bulletin boards throughout all of DuPont. The statistics are posted on all types of accidents experienced at the company.

Education

Berg has a comprehensive safety education program which includes safety belt use both on and off-the-job.

New employees are first introduced to safety belt use on-the-job during their safety education orientation. During the first week they read the company safety manual which includes the mandate for on-the-job use of safety belts.

All employees must attend a monthly safety meeting which features various safety topics and issues. The programs are not "canned" but are actually done by the employees (see Attachment B). Employees are polled as to the topics they would like to have discussed in safety meetings for the upcoming year.

Field sales employees go to a district sales meeting once per month. One-half to one hour of the meeting is devoted to safety. All driving personnel, mainly the sales engineers -- receive rigorous auto safety training (48-52 hours), which includes:

- National Safety Council program taught by a State Trooper, Defensive Driving Course which is given to all employees.
- Skid School which dramatically demonstrates the need for safety belts in maintaining control of the auto. This course must be passed by all sales personnel who drive on the job.
- Special 2½-hour presentation by a State Trooper on "police relations" given to sales personnel.

Sales people are tested in all areas of safety training. They are further subjected to quarterly audits (including their vehicle) which includes driving for one-hour under controlled conditions.

Communication/Publicity

Communications about the safety belt program are transmitted through bulletin boards, safety meetings, memos to employees, newspaper articles included in information packages and personal testimonies. Many of the small incentive prizes, such as keyrings, have a safety belt message printed on them. Signs are posted as reminders to wear belts.

Berg's Director in Wilmington gets accident statistics on all Berg sites, both on and off-theOjob. The Director gives feedback from the DuPont headquarters to the plant manager at Berg sites. Berg supervisors meet once per year to share their ideas and experiences. Supervisors get incidents rpeorts on serious accidents/incidents. Any pertinent incident is posted so that all may profit.

At Fishing Creek a barometer was used to communicate the status of safety belt use in the group incentive campaign (see Attachment A).

Outreach

Berg touches employees families with the safety belt message with its family safety magazine which contains hints for family safety on things that happen to real people. This magazine is an effort on the part of the National Safety Committee. Safety belt use has been featured in this magazine.

The group incentive campaign at Fishing Creek definitely involved outreach to the family. A letter explaining the campaign was sent home to families of employees along with the catalogue from which prizes were to be selected for reward in the event of reaching group goals for the belt-wearing campaign.

The film, "Room to Live", on safety belts was shown at the company's open house for employees' families (several showings were necessary due to standing room only level of interest).

Small individual incentive prizes for safety belt use carry a safety belt message and these items are many times seen and/or used by family members.

The outside community was informed of Berg's off-the-job campaign and special audits through media documentation of the kick-off activities -- which were very colorful and captivating with the six-food rabbit greeting employees (See Attachment A).

Auditing/Evaluation

At both the Berg sites auditing for evaluation is combined with auditing for incentive award function. Attachment A details the auditing process used at Fishing Creek. Audits are conducted in a rather obtrusive manner, in that employees most likely have plenty of warning (through long lines, etc.) to buckle up their safety belts in order to get a prize. This in itself is quite acceptable in the incentive process in that employees are motivated to buckle their belts in order to get the prize and increase chances of generalizing the behavior. However, the same situation can be quite detrimental to evaluation results. As noted above, however, anonymous self-report of belt use by sample groups of employees at both sites substantiated the audited rates of belt use at Berg.

Employees and upper-management are involved in auditing procedures for both sites.

Berg has seen other indications of the effectiveness of the program besides audit results. There were five cases cited for 1980 in which serious injury/death was averted due to use of safety belts. One young man who did not wear belts prior to the campaign was saved by the belt according to the investigating State Policeman, saving the company a minimum of $18.500

Methodological Considerations

Based upon the experience at Berg, PSS reorganized its interview outlines so that fewer, but broader topics would be covered. Attachment C is a sample interview guide for the other sites visited in the study.

ATTACHMENT A: BERG SEATBELT CONTEST

(By Ken Spoonhour, Safety Director)

The Berg Off The Job Safety Committee was very concerned after receiving information from the Pennsylvania Governor's Traffic Safety Council on Seatbelt usage. For that study found that in the four county area where our employees live only 11% of the drivers used seatbelts. We knew Berg employees had a much better score on seatbelt usage, but believed that even that percentage could be vastly improved.

So the Berg Committee decided to develop a seatbelt program, which would work in conjunction with the Governor's "Snap It Up" campaign. Our goal: to increase to 90% the number of Berg employees who use seatbelts. By reaching this goal we would accomplish the larger objective of convincing people that seatbelts do work, prevent injuries and save lives.

This goal was a real challenge. It called for us to virtually double existing usage for our audits showed that only 46% of Berg employees then wore seatbelts.

The vehicle for our Berg campaign was a Seatbelt Contest using the theme: Snap-It-Up!

The Berg site consists of three buildings: north plant, south plant, and distribution center totaling over 900 employees.

The following rules were established:

1) The entire site would be one safety team.

2) The duration of the contest would be six months (starting April 1st -- ending September 30). To win the contest, employees would have to achieve 90% seatbelt usage for any two of the six months.

3) The percent for each month would be determined by unannounced audits throughout the six month period.

4) The site established a policy which would reimburse any employee up to $15.00 if the employee had belts installed and produced a receipt. Any employee not having a seatbelt in their vehicle would be counted as a non-wearer.

5) Motorcycles were not included. They had a free ride.

6) The prize for obtaining 90% for two months: the employee's choice from a brochure of 71 gifts.*

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*Equivalent to the Du Pont Board of Directors' Award.

Four weeks prior to the contest, we started promoting with posters on bulletin boards throughout the sites. Each week we changed posters and gave additional information to gain interest and curiosity.

Two weeks prior to the start, we sent the prize brochure to each employee's home along with a letter announcing the contest. The reason for this was two-fold:

a) First, to announce the contest.

b) Second, as the family could participate in the gift selection, they would exert reinforcing pressure.

A barometer sign was installed near the plant entrance to keep the status visable throughout the contest.

April 1st was the kickoff date and began with a 100% audit of the entire site. As this date coincided with Easter, we decided to have a six foot tall white rabbit greet everyone and present those who wore seatbelts with a gift:

a) Men would receive a carnation.

b) Women would receive an orchid.

c) All would receive a safety brochure.

The flowers would provide visibility throughout the plant of those who wore seatbelts and those who didn't.

Plant managers and supervisors were asked to participate to demonstrate their commitment to the campaign. A news release was sent to the local newspaper and five area TV stations inviting them to cover our unusual contest. We also invited a representative from the Governor's Traffic Safety Council to join our first day's efforts.

The kickoff for the contest was a huge success. Employees were greeted by the giant rabbit, the plant manager, their supervisors, a newspaper photographer, Berg's plant photographer, the Governor's representative, TV newsmen with mini-cams.

Everyone was truly impressed. That evening Berg employees had an opportunity to see themselves on the 6 PM and 11 PM television news. The Harrisburg and Lancaster TV stations each devoted a full minute of coverage. The following morning, Berg made the newspapers.

Though the results for that first day were only 46%, everyone knew we were serious about wearing seatbelts. Additional audits were performed that month with slowly improving results, but it was impossible to reach our goal. 70% was our best effort.

In May we continued promotions through plant bulletin boards and by staff notes, handouts with paychecks, and safety meetings. One of the most effective

motivators was the movie "Room To Live", which was shown to everyone on the site. This film had a tremendous impact on converting non-wearers; employees were convinced and made commitments that they would wear their belts.

An important factor developed, peer pressure from fellow employees. Everyone wanted to show their friends, neighbors, and community that Du Pont was a better place to work. If someone was caught not wearing their seatbelt, they heart about it, or so it seemed, from most of their co-workers.

The results for May rewarded us for all the effort. Several mini-audits were held during the month and we reached our goal, 90% for the first time.

We followed up with a letter to each home letting everyone know we were half-way to our objective and urged them to maintain their commitment. Hershey chocolate kisses were distributed throughout the plant for the great job done in May.

We continued our promotions in June. And at our audit each wearer received a car air freshner. When the results were tablulated we had done it - 90% for the second month!

We sent another letter notifying each employee that the contest had been won through their efforts in June, and they could submit their selection for their prize. Through the contest we had doubled seatbelt usage in our plant and Berg's average was more than 8 times that of the four county area in which it is located. Because of our efforts and excellent results, Berg was nominated for the Governor's Award for Outstanding Contributions to Highway Safety. We have just received word that Berg won the award and will receive it in May.

But you can't let a good thing like this program end abruptly. Before the July 4th holiday, Uncle Sam paid the sites a visit. As the employees entered the plant, they received a safety brochure, and if they were wearing their seatbelt, they received a Tastykake pie. And before the Labor Day weekend, a tire safety kit was given out -- all to keep the momentum going.

Our experience showed that a token handout was a motivating factor in maintaining employee interest and participation. Most employees would rather "Snap It Up" than get caught not wearing their belts since the word always got back to their fellow workers.

What were the benefits of the "Snap-It-Up" seatbelt contest?

To illustrate the benefits we should look at an accident in early 1980, before we started the contest. At that time an employee was severly injured in an auto accident and was NOT wearing a seatbelt. The employee was hospitalized and lost 64 workdays. Not only did the employee suffer severe injuries, but the time lost represented over $3,500.00 benefits paid out. All this could have been avoided had a seatbelt been worn.

On the positive side, during and following the contest -- and taking in all of 1980, were five cases where the use of seatbelts by employees either prevented a more serious injury or prevented any injuries at all.

In one of these accidents a young employee who did not use seatbelts prior to the campaign, totaled his small pickup truck. The investigating State policeman indicated the use of seatbelts saved the employee's life. The employee missed one day at work. Since a fatality was averted, the minimum savings under the Du Pont Benefit Plan was approximately $18,500.

The other four cases involved six employees involved in accidents ranging from a broken tie rod to rolled vehicles, all having high potential for serious injury or fatality. Certainly one could safely speculate that at least several weeks of work time could have been lost had seatbelts not been used. But not one day was lost.

Berg management is convinced that the facts shown played a large part in the 47% reduction of the job accidents in 1980 when compared to the 1979 performance.

The attitude fostered among employees during the campaign is viewed as one of the major factors in reducing total days lost by 74% when compared to 1979.

This 74% reduction of days lost represents 337 days and 2696 hours that employees did not suffer from injuries, and a savings of $26,960 in disability pay.

The Berg example shows what can be done. The next step would be to examine the potential impact on the Du Pont Company or any company organization if this or a similar program were adopted.

First, let's take a look at the Company's accident exposure from driving:

1) Du Pont has 135M employees in offices, field locations, and plants.

2) They travel to work in buses, cars, planes, and trains. However, 95% of them travel by car.

3) This equates to 128,250 Du Pont employees who travel to and from work areas by car - 256,500 trips per day, 2,308,500 miles per day, 579,433,500 miles per year.

4) To put this in perspective, in one year while driving to and from work, Du Pont employees travel the distance the earth orbits around the sun.

Certainly there is a tremendous opportunity to prevent off the job accidents within any organization by encouraging all employees to "Snap It Up."

A short time ago we began a safety campaign for which the off the job committee and management were skeptical of the outcome. The results were gratifying. We believe they were achieved through a well planned and innovative campaign but, most importantly, through the involvement and the commitment of management, supervision, employees families, the media, and, of course, the employees.

ATTACHMENT B: SAMPLE OF MONTHLY SAFETY MEETINGS

MAY

Subject: Film
Presented by: Supervision
Attendance: 99%
Rating: ****

The film "Room To Live", a presentation on seatbelts, was shown. This film, obtained from the Pennsylvania Governor's Traffic Safety Council was the best presentation on this subject that many viewers had ever seen. Comments by viewers indicated that some non-seatbelt users were convinced after seeing this film, to start wearing seatbelts.

At the request of numerous employees, the film was shown at the Open House for the benefit of employee's families. Additional showings were necessary to meet the demand and all showings were standing room only. We are presently in the process of obtaining a copy of the film for our library.

JUNE

Subject: Water Safety
Presented by: Office of Fish Comm.
Attendance: 96%
Rating: **

An officer of the Pennsylvania Fish Commission gave a presentation on water safety, safe boating operations, and state requirements on life preservers, lighting and rules of the water. Safety while swimming was also stressed. It should be noted that one of our employees suffered a very serious injury involving a boat in '79.

JULY

Subject: Defensive Driving
Presented by: J. Zimmerman
Attendance: 99%
Rating: ****

The meeting sponsored by both On- and Off-The-Job Safety Committees was presented by former State Policeman Jack Zimmerman. This was the first in a series of three presentations planned for all employees as a refresher course in defensive driving. Mr. Zimmerman presented several statistics involving automobile accidents and fatalities in 1979 for both Pennsylvania and a local four county area. The major portion of the presentation dealt with the wearing of seatbelts, the reasons why people don't wear seatbelts (solicited from the audience), and firm rebuttal to all reasons given. Audience participation was very good as a result of Mr. Zimmerman's talents in involving those present in the discussion.

ATTACHMENT C: SAMPLE EMPLOYEE INTERVIEW

Introduction: Introduce self, identify organization and study. Make it clear that the study is being conducted by someone ontside of the company, that "we are not here to check up on you". Explain the general purpose of the interview. Ask each participant to introduce him/herself.

1. Let's begin by talking about the overall approach to safety belt use here at _____. How do you feel about the program?

   (Try to find out if they believe the program is good and why or why not.)

2. Do you think that management is committed to safety belt use or not?

   (How is commitment demonstrated -- policy statements, active participation in audits, disciplinary measures, management rating tied to safety record, etc.?)

3. Considering the different aspects of the safety belt program here at _____, which aspect has had the most influence on you? The second most influential? Etc.

   (Attempt to get some degree of consensus; be sure you understand exactly what aspect they are speaking of.)

4. What do you think of the audits?

   (Probe for personal feelings -- are they effective and do you mind the audits? How do they feel about rewards -- the concept and the type of prize. What about other incentive programs?)

5. Have you seen any spread of safety belt use to friends or family?

6. Can you suggest any ways in which the safety belt program here at _____ can be improved?

APPENDIX F: LIVE FOR LIFE PROGRAM

Implementation

LIVE FOR LIFE's corporate office at headquarters is housed at the ground level of a beautiful atrium. Directly across from LIVE FOR LIFE's office is the corporate Health and Safety office. Just down the hall in another atrium is the Medical Department, which is directly across the atrium from the Personnel Office. The juxtaposition of these four corporate entities affords maximum opportunity for communication, interrelation, etc. Johnson & Johnson is working toward the goal of integrated benefit services for employees, a more wholistic approach to the employee, and in this regard is striving for cross-referral and general integration of employee-related areas. Health and Safety and LIVE FOR LIFE both report to the Vice President of Employee Relations.

Johnson & Johnson is a "decentralized" company. Corporate offices make policy, and create technology, but each decentralized entity must "buy " LIVE FOR LIFE for its employees of its own volition. The corporate LIVE FOR LIFE staff gives a blueprint to the company, and like manufacturing a product, the LIVE FOR LIFE staff transfers technology to the corporation. The same core components are the norm for each company, with minor customizing. Most of Johnson & Johnson's companies have LIFE FOR LIFE now.

The number-one task in program implementation at one of the sites is selling it to the top management -- the President of the company and the management board of the company. LIVE FOR LIFE staff leverages with the ratio of the money it will take to have LIVE FOR LIFE and the company illness costs; they share the impact data that they have gathered thus far. They then ask for the out-of-pocket money that will be necessary to run the program and for the time. Time is in two categories: time on the part of management to get the program off-the-ground and time that employees must be off-the-job for screening and seminar (approximately 4 hours per employee). Management's commitment is essential -- they must be on-board for the program to work.

The second task in the implementation process is to set up a process that will bring about the wide participation of employees in the program. A new norm must be created; a new cultural climate must be established in the company in regard to health risk areas. A core group of Site Leaders is selected ("volunteers"). LIVE FOR LIFE helps to select these individuals and then trains them. They come from upper and mid-management and the union. These individuals as a group are essential to getting the program going; their participation will be predominant for the first 6-9 months. The Site Leaders are usually "influencers" selected from strategic points -- individuals who are success-oriented and who have high visibility. The major task of the Site Leaders is to market health to the employees and to market the LIVE FOR LIFE program to them.

Site leaders effect environmental changes in the company which reflect the health goals of the LIVE FOR LIFE program. They work to get healthier foods in the cafeteria; healthier foods in the vending machines; items like blood pressure machines and sclaes at strategic places where employees can use them; smoking policy changes effected; facilities created and incentives in place.

Corporate staff of LIVE FOR LIFE recruit and train professionals to conduct the Health Screen, a health risk appriasal instrument which looks at biometric, behavioral and attitudinal variables (including safety belt use) which relate to the areas of lifestyle improvement: smoking cessation, stress management, exercise, nutrition and weight control, and general health knowledge. Professionals are also trained to conduct the Lifestyle Seminar in which the employee receives the results

and recommendations of his/her Health Screen.

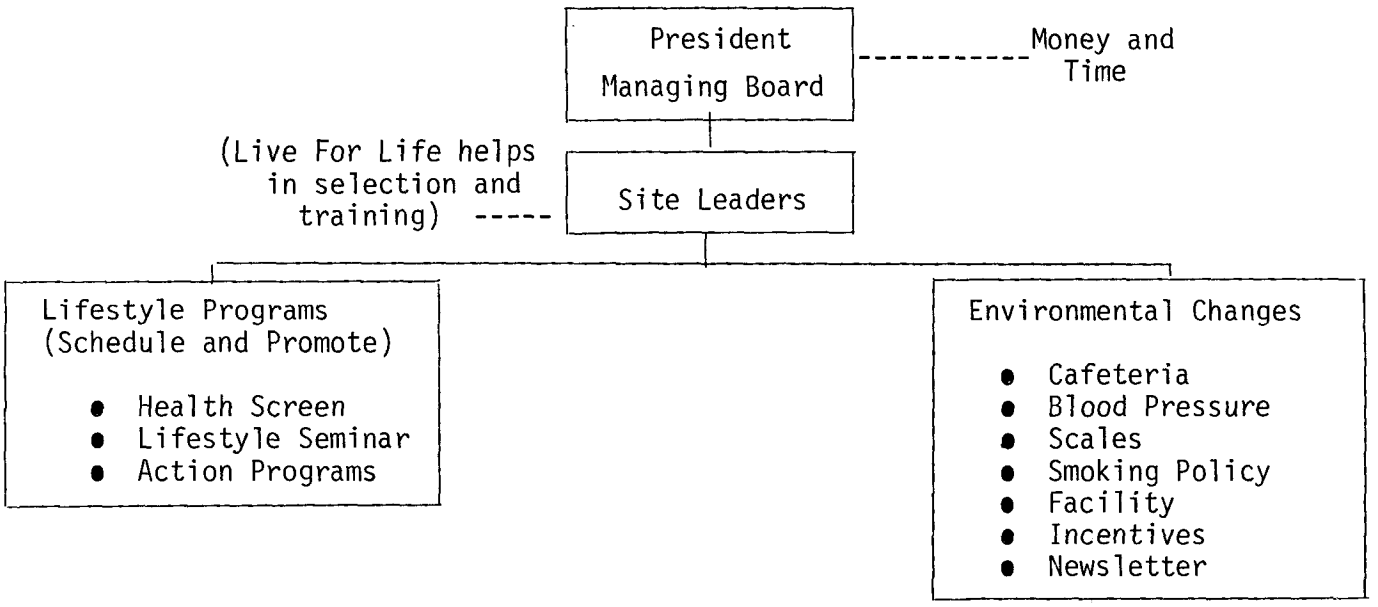
It is the task of the Site Leaders to schedule and promote the Health Screen and the Lifestyle Seminar and the defined set of services and activities that are the Action Programs for employees. The Lifestyle Seminar is the sales piece for participation. Typically about 80% of the company's employees will go for the Health Screen (1 hours); of those employees about 80% will follow-up with the Lifestyle Seminar (3 hours). Of those employees who have received the seminar with indications/recommendations, about 40-60% will be involved in Action programs.

After the Action programs get underway, they will pick up momentum. The Site Leaders are advertising programs within promotional channels of the company: Newsletter, signs, activities, etc. The process then picks up its own synergy and begins to "feed itself". Site Leaders can step into the background as the program picks up momentum. A LIVE FOR LIFE staff person has usually been hired by the company before this point.

Figure 1 depicts the implementation process and the synergy that builds as the program gets underway.

Action programs combined with and complemented by environmental change create a synergistic effect on the corporate culture. Publicity in the form of such events as Health Fairs with aerobic dancers keep interest high. Incentives for activity/attendance points keeps the program in the minds of employees -- the incentives themselves bear the emblem of the LFL program: A woman and man with arms raised standing beneath a brightly hued rainbow of fushia, orange and yellow. Environmental changes may include showers, locker, track and pool facilities; scales provided in strategic locations for weigh-in; foods labeled for caloric content in the employee cafeteria; vending machines containing fruit, juice and yoghurt choices, etc.

FIGURE 1: IMPLEMENTATION PROCESS



Process

The goals of the LIVE FOR LIFE Program which began in 1979 are as follows:

1. To provide the means for Johnson & Johnson employees to become among the healthiest employees in the world.

2. To determine the degree to which the Program is cost-effective.

The objectives of the program include improvements across a number of risk areas/lifestyle activities such as eating, exercise, smoking and stress management. The program is based on the premise that such lifestyle activities contribute substantially to an employee's health status and that positive lifestyle activities can be successfully promoted in the work place.

LIVE FOR LIFE is aimed at changing the corporate culture by making healthy lifestyle and behavior the norm. This is done through use of pacesetters and management as role-models, environment change (e.g., healthier food offered in the cafeteria), incentives, etc. The program's image is healthy and beautiful -- "slick" packaging, advertising and promotion; a logo that is highly associated with program activities and endorsement; separation of "problem" areas such as Employee Assistance, etc. As of 1982 about 16,000 Johnson & Johnson employees are involved in LIVE FOR LIFE at 22 locations in the U.S. By end of year 1985 the program will be available to all Johnson & Johnson employees (about 75,000 worldwide).

When LIVE FOR LIFE was in its initial planning stages Johnson & Johnson invited some leading scientists in to advise them on program design and the areas of risk to be targeted for behavioral change. This was accomplished in a focus group style of discussions and dialogues. In this way the items on the Health Screen were chosen to reflect the goals of the program. Safety belts are mentioned on the Screen and were discussed at the meeting. The major areas of emphasis in the Live For Life program are: smoking cessation, fitness, weight control and nutrition, High Blood Pressure control and Addictions/Dependencies (a new program component "Decisions for Life" has just been added). These areas are discussed in more detail below.

Johnson & Johnson aims at influencing a volume of employees, not just high risk people. Everyone is offered the LIVE FOR LIFE Health Screen. The screen is comprised as follows:

- two confidential questionnaires; one asks information about health and lifestyle practices, knowledge and attitudes about health; the other asks for a brief medical history and physical activity evaluation.

- Physical Health Assessment -- blood tests, blood pressure, body fat measurement, weight and estimated maximum oxygen uptake. Blood sample is analyzed for cholesterol and high density lipoproteins; aerobic fitness is measured by monitoring of pulse as employee uses stationary bicycle.

- Lifestyle Profile. A computer printout in which all of the above information is combined and areas of health and lifestyle in which employee is doing well and those which need improvement are indicated.

The questionnaires and physical assessments are computer scored and in about 8 weeks the employee receives the Lifestyle Profile -- scoring is done by another company to assure confidentiality to the employee. A Lifestyle Seminar is then conducted to explain the Profile and to sell the Action portion of Live For Life.

The Profile scores an individual on a continuum of Excellent, Good, Needs Improvement, Requires Change and Requires Immediate Action across the following domains:

- Health Awareness
  - knowledge
- Health Practices
  - cigarette smoking
  - nutrition practices
  - physical activity (calories per week)
  - healthy heart behavior pattern
  - dental health
    - brush
    - floss
    - check-up
  - seat belt use
  - women-self care
    - breast self exam
    - pap smear test
- Health Measures
  - total cholesterol
  - hdl cholesterol men
  - hdl cholesterol women
  - total cholesterol/hdl ratio
  - blood pressure
    - systolic
    - diastolic
  - percent body fat
    - men
    - women
  - percent of ideal weight
  - fitness -- aerotic capacity

The Profile affords a learning experience in and of itself as it shows across the continuum of scores what behavior or measure, etc. would achieve an "excellent, good, needs improvement, requires change, or requires immediate change" response in any given category, (e.g. under cigarette smoking an individual would receive an "Excellent" for non-smoking or having quit for 10+ years). In addition, on the back of the Profile are condensed facts and mini-discussions across relevant risk categories to provide additional information for the respondent. The Lifestyle Profile is featured as Figure 2

An individual is given an ultimate Health Score -- number of points out of a possible 1700 for men and 1900 for women -- based upon points for level of response (e.g., 100 points for each Excellent; 75 points for each Good, etc.). A Health Potential Score is the actual health score divided by the total potential health score. For each profile area, the computer has the capability of printing out an "indication" or "recommendation". This is the opportunity to refer an employee to an Action program to improve his or her Health Score.

LIVE FOR LIFE™

LIFESTYLE PROFILE

NAME _____

COMPANY _____

HEALTH SCREEN DATE _____

HEALTH AWARENESS	EXCELLENT	GOOD	NEEDS IMPROVEMENT	REQUIRES CHANGE	REQUIRES IMMEDIATE ACTION
KNOWLEDGE	8 10	7 0 7 9	5 0 6 9	3.0-4 9	LESS THAN 3
HEALTH PRACTICES					
CIGARETTE SMOKING	NON-SMOKER QUIT 10 + YEARS	QUIT 1-9 YEARS AGO	QUIT 1-12 MONTHS AGO	1 PACK A DAY OR LESS	MORE THAN 1 PACK A DAY
NUTRITION PRACTICES					
PHYSICAL ACTIVITY (CALORIES PER WEEK)	MORE THAN 1200	900 TO 1200	600 TO 899	300 TO 599	LESS THAN 300
HEALTHY HEART BEHAVIOR PATTERN					
DENTAL HEALTH					
BRUSH	2 + TIMES A DAY	1 TIME A DAY			NOT DAILY
FLOSS	DAILY	2-3 TIMES PER WEEK	2-3 TIMES PER MONTH	ONCE A MONTH	NEVER
CHECK UP	YEARLY				NOT YEARLY
SEAT BELT USAGE	100%	75%	50%	25%	NEVER
WOMEN - SELF CARE					
BREAST SELF EXAM	WITHIN 1 MONTH	WITHIN 3 MONTHS	WITHIN 6 MONTHS	WITHIN 9 MONTHS	MORE THAN 9 MOS. AGO OR NEVER
PAP SMEAR TEST	WITHIN 2 YEARS			MORE THAN 2 YEARS AGO OR NEVER	
HEALTH MEASURES					
TOTAL CHOLESTEROL	LESS THAN 199	195 TO 185	188 TO 250	251 TO 290	MORE THAN 290
HDL CHOLESTEROL MEN	MORE THAN 57	51 57	38 50	31 37	LESS THAN 31
HDL CHOLESTEROL WOMEN	MORE THAN 74	64-74	46 63	40-45	LESS THAN 40
TOTAL CHOLESTEROL/HDL RATIO	LESS THAN 3	3 0 3 9	4 0 4 9	5 0 7 9	8 0 OR MORE
BLOOD PRESSURE					
SYSTOLIC	LESS THAN 120	120 130	131 140	141 150	MORE THAN 150
DIASTOLIC	LESS THAN 80	80 85	86 90	91-95	MORE THAN 95
PERCENT BODY FAT					
MEN	LESS THAN 20%	20-22%	23-27%	28-30%	MORE THAN 30%
WOMEN	LESS THAN 29%	29 31%	32 37%	38 40%	MORE THAN 40%
PERCENT ABOVE IDEAL WEIGHT	0 5%	6 10%	11 15%	16 20%	MORE THAN 20%
FITNESS AEROBIC CAPACITY					

HEALTH SCORE:

HEALTH POTENTIAL:

LIVE FOR LIFE INDICATORS:

LIVE FOR LIFE RECOMMENDATIONS:

LFL001J0

Health Knowledge:
How much do you know about good health? Ten "knowledge" questions were asked on the Lifestyle Questionnaire. A score of 8 or better is excellent health knowledge.

Cigarette Smoking:
NON-SMOKERS are two to three times less likely to have heart attacks than smokers. The less cigarettes you smoke per day, the more you improve your health. When you STOP SMOKING, you cut your risk of heart disease almost to that of a non-smoker WITHIN A YEAR, and your risk of lung cancer almost to that of a non-smoker WITHIN 10 YEARS.

Nutrition:
For excellent nutrition practices:

- Choose fruits, vegetables, and starchy foods every day.
- Select lean meats or vegetable proteins, and low-fat dairy products.
- Use margarines and oils high in polyunsaturated fats for cooking and dining.
- Restrict salt, caffeinated beverages, and high-sugar foods like soft drinks.

Physical Activity (Calories per Week):
This score indicates how many calories you use in *aerobic physical activities in a typical week*. For an average person, one half hour of vigorous exercise 4 times a week uses about 1200 calories. This level of aerobic exercise can make your heart more efficient, help you lose extra weight, and make you look trim and feel great.

Healthy Heart Behavior Pattern:
Successful men and women who routinely follow a Healthy Heart Behavior Pattern have 50% less chance of getting coronary heart disease than their "unhealthy" counterparts. A Healthy Heart Behavior Pattern is characterized by:

- Patience
- *Tolerance*
- Flexible time management
- Few intense conflicts with others
- *Little habitual sense of time urgency*
- Ability to concentrate on *one* thought or activity for a long period of time
- Talk, move and eat at a moderate speed
- Little hostility toward oneself or others
- Ability to relax without guilt.

What's your behavior pattern like?

Dental Health:
Excellent dental health includes flossing once a day, brushing twice a day, and a dental check-up once a year.

Seat Belt Usage:
People who "buckle-up" are about *60% more likely* to avoid serious injury or death in an automobile accident in comparison with people who are not wearing seat belts.

Women-Self Care:
Excellent self-care for women includes a breast self exam every six months, and a pap smear at least *every two years*.

Total Cholesterol:
The lower your level of blood cholesterol, the lower your risk of coronary heart disease . . . the Nation's leading cause of death. The average cholesterol level for adult Americans is about 220 mg. *To safely lower your blood cholesterol, eat foods low in saturated fats and cholesterol.*

HDL Cholesterol:
To circulate in your blood, cholesterol must bond together with protein molecules. This joint structure of cholesterol and protein is called a lipoprotein complex. One type of lipoprotein complex is called HDL or High Density Lipoproteins. A high level of HDL is associated with a low level of coronary heart disease. Women have higher HDL levels than men. *To increase your HDL, follow a regular exercise program.*

Cholesterol/HDL Ratio:
For good health, you should strive for a low level of blood cholesterol and a high level of HDL. *To reduce your blood cholesterol, eat foods low in saturated fats and cholesterol. To increase your HDL, follow a regular exercise program.*

Blood Pressure:
The force your flowing blood exerts against your artery walls is measured at two levels.

1. The upper, or *systolic*, pressure occurs each time your heart contracts and pumps blood. A very healthy systolic blood pressure is 120 mm or less.
2. The lower, or *diastolic*, pressure occurs when your heart relaxes and refills with blood. A very healthy diastolic blood pressure is 80 mm or less.

Percent Body Fat:
Calculated from your skinfold thickness. The average percent body fat using this method for *men* is about 25% and for *women* is about 34%. Regular physical exercise and eating fewer calories are two good ways to reduce your body fat.

Percent Above Ideal Weight:
Your ideal weight is based on insurance company standards of desirable weights for a person of your sex and height. Most of the weight we gain after our early 20's is excess fat. If you are over your ideal weight, reduce your weight *slowly yet sensibly. To lose weight, eat fewer calories and begin a regular exercise program.*

Fitness-Aerobic Capacity:
This is based on your performance on the bicycle test. The higher your aerobic capacity, the more *efficiently* your heart is working. *Increase your aerobic capacity by increasing the frequency, duration or intensity of your favorite exercises.* You'll look and feel better too!

Health Score:
Your health score is based upon:

- 100 points for each health score in the Excellent column
- 75 points for each health score in the Good column
- 50 points for each health score in the Needs Improvement column
- 25 points for each health score in the Requires Change column
- 0 points for each health score in the Recommend Medical Review column

The total potential health score for men is 1700, and for women is 1900. Your health potential is your actual health score divided by the total potential health score.

In the case of safety belt use the computer would simply print out a message such as "You are important. Always buckle up." if a respondent's reported level of belt use needed improvement.

Action Programs are formal, beginning and end programs of varying lengths of duration. Current offerings to LIVE FOR LIFE employees include:

- Self-designed exercise programs in which participatns chart their own progress over 12 weeks of the program. The focus is on aerobic conditioning.

- Weight control program which stresses exercise, calories and management of behavior.

- Stress management options:

  - Applied Stress Management, an eight-week course which deals with the response to physical and mental stress;

  - Yoga, a 12-week course which teaches the principles and practice of yoga; and

  - Personal power, an eight-week assertiveness training course

- Nutrition, an eight-week, eight session course which teaches the principles and practice of good nutrition.

- High Blood Pressure Control, a four week, four session program. Hypertensives are followed up and remeasured for progress.

- Smoking Cessation program comprised of 12 weeks of group (or individual) sessions with quit week arriving in the fourth week. The program combines a number of modes of help through the Duke University approach: prepare to quit, quit, and stay quit. The final two months are used to acquire skills needed to stay a non-smoker.

- Decision for Life is a new program devoted to alcohol and drug use/abuse education. It is co-sponsored by Employee Assistance.

General health information is made available to employees through brochures and other materials which are disseminated at strategic areas of access such as the LIVE FOR LIFE exercise facility. LIVE FOR LIFE also lends its logo to such activities as Cardio-Pulmonary Resuscitation (CPR).

Instructors for the Action Programs are generally hired from outside the company -- professionals or people with the right "Gestalt" for the program are trained by LIVE FOR LIFE to deliver the program according to LFL specifications. They are normally employed on an hourly basis.

Johnson & Johnson is now in the process of formulating an expanded version of the Health Screen as part of their goal of integrating employee health areas. They are in the process of redesigning the benefits package to reflect overall goals, including outpatient coverage of alcohol use/abuse. The expanded screening will serve as gatekeeper for high blood pressure control, alcoholism and other programs. While the Health Profile does tap into the domain of substance use and abuse, there is no indication

or recommendation for "Visit your Employee Assistance Program" at this time; however, employees with such indications will now be referred to the "Decision for Life" action program which is co-sponsored by EAP.

Generally, LIVE FOR LIFE conducts employee Lifestyle Rescreening at 18-24 months. Progress is measured through a Comparative Profile in which an employee can see how far he or she has come to realizing a healthier lifestyle.

Incentives

LIVE FOR LIFE has built in an incentive system for its activities. Participants complete Lifestyle Activity Records in which they record Date, Time, Activity and Points. They give themselves points as follows: 1 point for each 20 minute aerobic exercise session (3-5 points per week recommended); 1 point for each non-aerobic exercise session; three points for each Action Program session attended (Nutrition, Weight Control, Smoking Cessation, Applied Stress Management, Personal Power, Yoga and Decision for Life). Exercise and attendance of classes are done on the employeees' own time -- before work, lunch, or after work. The points achieved through exercise and activity are redeemable for LIVE FOR LIFE "play money". The money is redeemable for LIVE FOR LIFE prizes such as LIVE FOR LIFE T-shirts, ski caps, etc. Figure 3 shoes a sample of the activity record and play money.

FIGURE 3: ACTIVITY RECORD AND "PLAY MONEY"

LIVE FOR LIFE™

LIFESTYLE ACTIVITY RECORD

The *LIFESTYLE ACTIVITY RECORD* is for you to record all your LIVE FOR LIFE Activities.

You can use this record to keep track of your participation in LIVE FOR LIFE Action Programs and Exercise Sessions.

Each activity has a point value. See the back of this record for details. By recording your participation you can get credit in your Company's Incentive Program.

HOW TO USE YOUR LIFESTYLE ACTIVITY RECORD

You should record the date of the activity and for exercise sessions, please include the time, (in minutes).

Record ONE POINT for:

AEROBIC EXERCISE

Aerobic exercises are exercises that build your cardiovascular system. Examples include: running, brisk walking, swimming, cycling, singles tennis and racquetball, cross-country skiing, rope skipping and aerobic dance. For each *exercise session of 20 minutes or more you receive one point.* You should try to collect three to five fitness points each week.

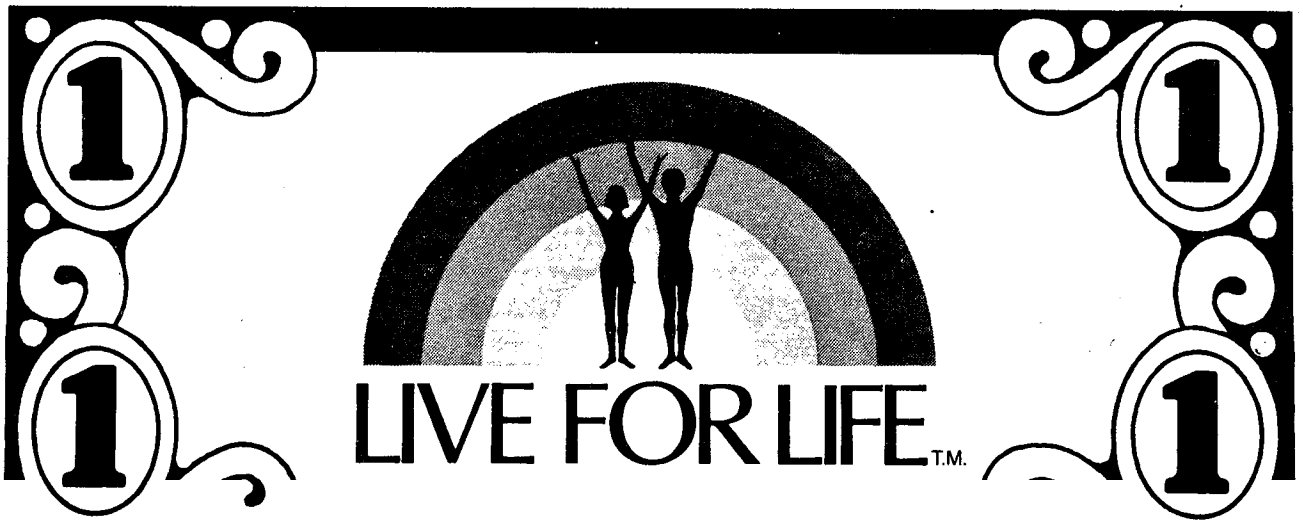
NON-AEROBIC EXERCISE

Non-aerobic exercises are exercises that build your strength and flexibility. Examples include: weight lifting, stretching and calisthenics. For each *exercise session you receive one point.*

Record THREE POINTS for:

Action Program Session

There are six LIVE FOR LIFE Action Programs. They are Nutrition, Weight Control, Smoking Cessation, Stress Management, Personal Power and Yoga. For each *session of the Action Program you attend, you receive three points.*



Safety Belt Use and LIVE FOR LIFE

At Johnson & Johnson all employees are required to wear safety belts on-the-job. However, it is a difficult mandate to enforce. Johnson & Johnson has begun to focus more attention on employee belt use. Corporate Safety is beginning to focus on efforts to:

- Raise visibility of the issue
- Make people more aware of belt use and its consequences
- Create incentives for use
- Strive for mass use in the company -- create a change in the corporate culture regarding belt use.

Johnson & Johnson has a large sales force of employees driving on-the-job and, although a formal analysis of potential cost-savings has not been conducted, its upper management recognizes that employees who wear safety belts represent substantial savings to the company in money spent on lost time and associated costs.

There does not appear to be any conflict in LIVE FOR LIFE and Health and Safety working together to meet the company's goals of minimizing lost time. The coming integration of employee health areas emphasizes the spirit of common goals rather than a conflicting turfism which is apparent in some companies. The reason that safety belt use has not been included as a program component in most health promotion/wellness efforts, according to Curtis Wilbur, LIVE FOR LIFE's Program Director, is that safety belt use is, perhaps, seen as single, isolated and low-appeal by program designers. He noted that safety belt use must be changed within the common mind-set which says at the present time, "people don't wear them."

The LIVE FOR LIFE program is designed in a way that would make integration of a safety belt program component relatively simple. In fact, one of the Johnson & Johnson family companies, Ortho Pharmaceutical in Raritan, New Jersey, has already combined its LIVE FOR LIFE incentives program with self-report of safety belt use. This innovation is the co-creation of the LIVE FOR LIFE Manager and the Safety Coordinator.

At Ortho the already existing incentive points system has been amended to include safety belt use as an activity. This will mainly impact those employees (approximately 25 percent of the workforce) who are already enrolled in LIVE FOR LIFE activities. Safety belt use will earn 2 points per week on the activity card if a person is wearing his/her belt each day. Use is self-reported. Ortho has taken pre-measures of belt use at its three entrances in the mornings as employees come in to work. They will continue to audit unobtrusively after the program is underway to measure impacts. The initial audit was done over a three day period, and the Safety Manager estimates that 50-75 percent of the cars were checked per day for belt use. The rate of belt use at Ortho was found to be 21 percent, a rate that was roughly twice that of the State. Safety personnel will audit belt use at approximately two-month intervals to track success, and other safety committees will stress safety belt use in their activities. The President of Ortho Pharmaceutical will promote belt use in special meetings held every six months. The LIVE FOR LIFE involvement in the safety belt pro-ram will complement other promotional, educational activities at Ortho. It provides a unique opportunity for employees to perceive belt use as a wellness and health-behavior issue and to incorporate it into their other pursuits for well-being.

Safety belt use will contribute toward the points an individual needs to get a prize under the existing system at Ortho. It is unlikely that an employee would earn a prize by safety belt use alone in any reasonable amount of time. Two points per week earns $2.00 in LIVE FOR LIFE money, and it takes approximately $50.00 to win a LIVE FOR LIFE shirt, for example. In comparison to the safety belt incentive, employees earn one point for each 20 minute session of aerobic exercise, one point for each non-aerobic exercise session, and three points for each action program session (classes) attended. Johnson & Johnson sites differ in the budget for prizes available in exchange for LIVE FOR LIFE money. Most sites feature shirts, shorts, desk accessories, etc.

Johnson & Johnson, according to the Safety Manager at Ortho, feels that their safety programs are successful due to long-term commitment on the part of management. Any new behavior must be sold over and over again -- not just in a one-shot campaign. Safety belts are seen as no different. LIVE FOR LIFE was viewed as a highly visible means of demonstrating a long-term commitment to the issue of belt use. Every week an employee fills out an activity/attendance card for smoking cessation activity attendance, exercise, etc. as appropriate to his or her Action Program participation. Safety belt use is now featured with these other healthy life style items/behaviors to be checked each week by participating employees.

Corporate Headquarters in New Brunswick, New Jersey, has the perfect set-up for auditing belt use as employees come in and leave for home at night. There is a multi-tiered parking garage with a guard at the entrance/exit and another guard inside the facility. This facility is located just down a walkway from the LIVE FOR LIFE atrium and the Health and Safety office. This set-up might afford an opportunity to measure effects of including belt use as part of the LIVE FOR LIFE incentive program if it is implemented at headquarters. The parking facility might also be used as an opportunity to run an individual incentive program and/or a group incentive effort which would reward individuals "on the spot" for observed belt use and/or reward the group for achieving prescribed levels of audited belt use.

Program Evaluation

Preliminary findings after year-one of a two-year epidemiological study conducted by Johnson & Johnson suggest that LIVE FOR LIFE participants achieved greater improvements across major health and lifestyle areas of the program than did members of the control group of non-participants. The groups were compared on such measures as calories burned per kilogram per day and stationary bike pulse rates (as measures of fitnesss) and stress factors identified from the initial screening.