REPORT DOCUMENTATION	1. REPORT NO.		72,		PB - 298332	
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M. Harvey Cohen,	Ph.D.			N]	IOSH 75-185	
P. Performing Organization Name	and Address			10. 1	Project/Task/Work Uni	t No.
National Institu	te for Occupa	tional Safety	and Health			
4676 Columbia Par	rkway			11. 0	Contract(C) or Grant(G)	No.
Cincinnati, Ohio	45226			(C)		
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2. Sponsoring Organization Name	and Address	e e e	•	13.	Type of Report & Perio	d Covered
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5. Supplementary Notes						
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SAFETY PROGRAM PRACTICES IN HIGH VERSUS LOW ACCIDENT RATE COMPANIES

- AN INTERIM REPORT (QUESTIONNAIRE PHASE)

Alexander Cohen, Ph.D. Michael Smith, Ph.D. H. Harvey Cohen, Ph.D.

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service
Center for Disease Control
National Institute for Occupational Safety and Health
Division of Laboratories and Criteria Development
Cincinnati, Ohio 45202

June 1975

HEW Publication No. (NIOSH) 75-185

ACKNOWLEDGEMENTS

The authors wish to recognize the efforts of others who assisted in the questionnaire phase of the project. Dr. Bruce Margolis and Mr. Robert Struble, former members of the Behavioral and Motivational Factors Branch, participated in the formulative stages of the study plan and questionnaire construction. Mr. Henry Geminder, Chief, Risk Management Section, Research and Statistics Bureau, State of Wisconsin Department of Industry, Labor and Human Relations graciously consented to have his staff undertake the task of defining a suitable survey sample. Dr. Patrick Coleman of the Risk Management Section played a major role in this effort. Dr. Coleman together with Mr. Robert Cleveland, also from the Risk Management Section, are continuing to render technical assistance to this project in the site visit phase, now in progress. Lastly, we should like to express appreciation to those Wisconsin establishments who responded to the questionnaire and who have cooperated in this research in other ways.

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ABSTRACT

This report describes the questionnaire phase of a project seeking to define whether there are distinguishable differences in safety program practices and other related factors in work establishments with low accident rates versus similar companies with high accident rates. Pairs of manufacturing work establishments in Wisconsin were chosen as respondents, the members of each pair being comparable in industrial operation (3 and 4 digit SIC), workforce size, and geographic locale, but differing by at least 2 to 1 in the incidence to recordable injuries for the 1972 year based upon OSHA-BLS 103 reports. These paired establishments were drawn from six different types of industries which were: food and kindred products, wood products, paper products, primary metals, fabricated metals and machinery manufacture. High and low accident members of 42 pairs of companies from a total of 96 pairs, originally sent questionnaires, returned their forms and constituted the study sample. Descriptive and statistical analyses were performed on the questionnaire data of the 42 pairs of high and low accident companies to isolate any differences in their responses to items dealing with extent of management commitment to safety, motivational approaches to worker safety, job safety training, nature of hazard control practices, accident investigation and reporting

procedures, and make-up of production workforce. Analyses conducted across all respondent pairs, for pairs classified by industry group, and for select pairs displaying the greatest accident rate differentials yielded no obvious differences between the questionnaire data for the high versus low accident groups. Indeed, few response differences were found large enough to attain statistical significance. On the other hand, the distributions of the responses to several questions did reveal some differences in the numbers of high versus low accident companies favoring certain primary safety practices and/or in their use and effectiveness of specific secondary and third-order program measures. Such types of differences suggested the low accident companies, relative to their high accident cohorts, as showing more of the following attributes:

- (1) Greater stature and staff commitment given to direction of company safety efforts,
- (2) Greater utilization of outside influences in instilling safety consciousness in workers,
- (3) More concerted use of a variety of safety promotional and incentive techniques,
- (4) Greater opportunities for general and specialized job safety training with supplemental modes of instruction for all production personnel.

- (5) More humanistic approaches in disciplining risktakers and violators of safety rules,
- (6) More frequent though less formal inspections of the workplace as a supplement to or instead of formal inspections at lengthy intervals.
- (7) A safety program emphasizing better balance
 between engineering and non-engineering approaches
 toward accident prevention and control,
- (8) More stable qualities in the make-up of the workforce, i.e., more older, married workers with
 longer time on the job.

These questionnaire results will be amplified through planned site visits to a sub-sample of the respondents and observations of any innovative techniques they are using for purposes of hazard control. Conclusions regarding distinctive factors in plants having successful safety performance will be deferred until the completion of the site visit phase.

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INTRODUCTION

This study sought to describe safety program practices and related factors characteristic of work establishments having markedly dissimilar accident frequency rates but otherwise matched in industrial classification, workforce size, and other variables. Of primary interest was whether there were distinguishable differences in approach, content, and manner of implementation of the safety programs in companies having comparatively high versus low accident experience. If so, some important insights into effective safety programming were believed realizable. This interim report covers the background, methodology and the results of a questionnaire survey connected with the project. A subsequent report will summarize observations obtained through site visits, and walk-through surveys of a sub-sample of the questionnaire respondents.

Several previous efforts bear mentioning in offering some background to the subject of the present investigation. The National Safety Council (NSC) in 1953 queried 54 company winners of safety performance awards in different industrial sections for information about aspects of their safety program organization and activities (cited in Ref.(1)). The surveyed plants had accident frequency rates which were one-forth the

average incidence reported for their respective industrial groups. The responses indicated that certain safety program practices were common to most contest winners while a number of others differed greatly in their popularity. For example, all of those sampled indicated that they employed a full-time safety director and most acknowledged using pre-placement medical examinations, having supervisors administer routine safety training, and including safety news items in plant publications. Types and functions of safety committees, use of contests for promoting job safety elicited a much more varied response.

On the whole, however, these results proved of little value since they offered few details about the nature of any given practice, and whether the respondents thought them responsible for their success in accident prevention. Another more glaring weakness in this survey was the lack of data referencing safety program practices in companies with less enviable safety performance. Without the latter, one could not gauge the significance or uniqueness of the more widely used safety practices among the winning companies.

In 1964, Davis and Stahl(2) reported the results of interviews with the safety directors of 12 coal companies which had won awards for extended periods of work performance without a lost-time injury. This effort was also aimed at determining whether there were features common to

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the safety programs of these award recipients to which their successful performance could be attributed. While there were some variations, notable factors found to hold throughout all or most company safety programs and activities were:

- (1) The ranking safety official had staff status or was responsible to a person charged with overall mine management. He was not subordinate to production personnel.
- (2) There were continual examination and analyses of safety rules in light of job hazard analysis, accident reports, "near-misses" to improve upon their adequacy.
- (3) Frequent, if not, daily contacts between foremen and workers on safety matters including inspection of individual work areas with safety inspections of entire operations at least at monthly intervals.
- (4) Training of all personnel, both supervisors and workers, in accepted job procedures with opportunities for special safety training to select persons or groups.

- (5) Active safety committees with provisions for short, daily safety meetings of smaller units for facilitating personalized contacts.
- (6) Well developed procedures for investigating and reporting accidents with the findings being well publicized.
- (7) Use of assorted techniques for promoting safety including mailing of safety letters to workers' homes to enlist family support.
- (8) A sincere desire on the part of both management and employees to prevent injuries.

Like the NSC survey above, this study could also be criticised for the lack of data from a reference group of companies having average or below average safety records to fully ascertain the distinctiveness of the factors shared by most of the award winners. On the other hand, the Davis and Stahl data do offer much elaboration about the nature of those practices deemed contributory to success in mine safety and perhaps industrial safety in general.

In another effort to identify characteristics in companies that lead to better or worse work accident records, Shafai-Sahrai in 1971 studied eleven pairs of firms representing eleven different industries in Michigan (3,4). The companies comprising each pair were approximately equal in size and engaged in similar work but differed greatly in work-injury experience. The difference in frequency of accidents per year between the high and low accident members of the eleven pairs averaged 50. The ratio of the frequency rates between the paired members averaged more than 3 to 1. The investigative procedures involved plant visitations and inspection together with structured interviews primarily with company top management and personnel officials. The author focussed his evaluation on aspects of management's commitment to safety, make-up of the labor force, safety promotional activities both on- and off-the-job, age of production machinery, physical workplace conditions, existence of safety committees and formal safety rules.

The results indicated that no one factor is the sole key to fewer or more injuries. Indeed, as many as eight different factors correlated highly with the better safety performance within the paired companies. Top-management's interest and direct involvement in company safety activities was one factor found strongly related to lower work injury frequency and severity rates. Top management in the lower accident companies were more inclined to conduct personal safety audits

. . yo and inspections, include safety figures and reports on the agendas of company board meetings, actively participate in the establishment and execution of safety plans. Aside from its direct effect of showing other members of management and ultimately all employees that the boss is genuinely concerned about accident prevention, this factor was also believed to indirectly influence a number of others favorable to accident control. Other factors found to be associated with low injury rates can be enumerated as follows:

- (1) The presence in the workforce of more older, married workers.
- (2) Workforce containing persons with greater lengths of service on the job.
 - (3) Fewer workers under the supervision of a first-line foreman, i.e., a smaller span of supervisor control.
 - (4) Availability of company recreational programs and facilities.
 - (5) Roomy and clean work areas with adequate ventilation, lighting and control of noise.
 - (6) Better and more safety devices on machinery.
 - (7) More complete accident record-keeping systems.

Existence of safety committees, relative age of production machinery and equipment, quality and quantity of safety rules, formal education level of employees, safety promotions involving the employee's family did not prove to be differential factors in comparing the high versus low accident companies.

Shafai-Sahrai's study provides the first comparative, in-depth look at the characteristics of safety programs and factors that appear linked to successful accident control. Although conceived along different lines, the present study could be viewed as an attempt to verify, in part, the findings of Shafai-Sahrai. It goes beyond this work however, through studying a larger sample of high and low accident companies, and considering additional safety practices for any meaningful associations they might have with effective safety performance.

METHODOLOGY

Sample Selection

The original questionnaire sample consisted of 192 manufacturing establishments in Wisconsin which were formed into 96 pairs as defined by procedures described below. The firms were drawn from six different types of industries which were among the more numerous ones in Wisconsin, and which tended to have relatively high accident rates based on statewide statistics. These were: Food and Kindred Products, Wood Products, Paper Products, Primary Metals, Fabricated Metals, Machinery Manufacturing.

In the process of selecting and pairing individual companies, primary use was made of the accident frequency data contained in the OSHA-BLS Form 103 for the year 1972 as supplied by Wisconsin employers. Specifically, plants were first identified whose 1972 accident incidence placed them in either the upper (above the 85th centile) or lower (below the 15th centile) extremes of the distribution of accident frequency rates reported for the total number of Wisconsin plants within each of the six specified industrial categories.

Individual pairings of the high and low accident companies, as determined above, were then made, the goal being to match paired members as closely as possible in industrial operations (at least in 3- and preferably 4-digit standard industrial coding) workforce size, and geographic locale. The latter involved adherence to the 4 regional designations established by the State of Wisconsin Department of Industry, Labor and Human Relations (DILHR)¹. Of the resultant matched pairs, only those were finally selected in which the accident rate of the high accident member was at least twice that of the low accident member to which it was paired.

Note: The Risk Management Section, State of Wisconsin Department of
Industry, Labor and Human Relations, performed the selection and pairing
of establishments described here.

It was planned to also take account of the number of workmen's compensation claims which were filed for the period 1970-1973 against the different companies to be included in the sample insofar as providing an additional measure of differential accident experience. While most of the high accident companies chosen here showed more frequent claims than did their low accident cohorts, it was not true in every pairing. An obvious shortcoming in using the compensation data was the inability to ascertain how many disabilities were for reason of accidental injuries as distinct from occupational illness. During the course of the survey, OSHA-BLS Form 103 accident incidence data for the year 1973 also became available on all participating companies. As will be noted these additional data essentially sustained their high and low accident classifications arrived at above and therein lent reliability to the selection process.

Table I shows the number of paired companies comprising the survey sample by industrial classification. Also indicated are the typical or median accident values based on 1972 data and workforce sizes for the high and low accident establishments within each industrial category.

Questionnaire

A mail-out questionnaire consisting mainly of multiple-choice, yes-no questions was prepared for use in this survey. Its intent was to obtain

TABLE I

Paired High and Low Accident Companies in
Original Survey Sample

Industrial Classification	No. of	Med No. of E		Median Injury Rate ¹		
$(SIC)^3$	Pairs	High	Low	i High	Low	
Food and Kindred Products (2022) ³	13 (4) ²	168	117	30.2	8.0	
Wood Products (2431)	14 (8)	.95	94	32.0	11.5	
Paper Products (2621)	10 (7)	106	105	27.0	4.2	
Primary Metals (3322)	13 (5)	123	117	61.4	16.1	
Fabricated Metals (3442)	19 (7)	150	113	45.6	13.7	
Machinery Manufacturing (3531)	27 (11)	118	132	32.8	7.1	
Overall	96 (42)	122	.111	36.4	8.6	

N = number of injuries

MH = total hours worked by all employees during 1972

200,000 = base for 100 full-time equivalent workers

This calculation differed from the one prescribed by OSHA-BLS in that only accidental injuries were tallied in computing the specified values as opposed to including both injuries and illnesses in such determinations.

The injury rate was based upon the OSHA-BLS 103 Forms submitted by individual employers for 1972. It represented the number of recordable cases of accidental injuries requiring more than first aid treatment per 100 man-years of work. Specifically: N/MH X 200,000, where

 $^{^2}$ Represent numbers of actual respondent pairs.

 $^{^3}$ Represents 4 digit SIC characteristic of most establishments in the specified industrial group. In a few instances matching by SIC was possible only for the first 3 digits.

information bearing on the character of a company's safety program and related policies and practices, the manner of their implementation, and aspects of their effectiveness. The questionnaire solicited information in six areas which were:

- (1) The extent of management commitment to safety as reflected in certain administrative polices and procedures.
- (2) The nature of available job safety training and its merit.
- (3) Approach, use and effectiveness of safety promotional techniques.
- (4) Nature and adequacy of hazard control measures.
- (5) Sensitivity of accident investigation and reporting procedures.
- (6) Make-up of production workforce.

In addition to the relevant technical literature, these subject areas and questionnaire items specific to them were suggested at pre-survey meetings held with safety officials of a number of large and small work establishments. These companies also pre-tested the study questionnaire in a preparatory phase of the project to determine clarity of the questions and burden of response. A copy of the questionnaire form is found in Appendix A.

Survey Procedure

The 192 or 96 patched pairs of firms chosen for the survey were mailed individual questionnaires in care of the person who completed the OSHA-BLS 103 form for the 1972 year. The accompanying cover letter and instructions indicated that those most familiar with the safety program of the specified company should fill out the questionnaire. In instances where company policy dictated that such inquiries be handled at a corporate office different from the addressed establishment, it was requested that all responses reflect only the situation existing at the addressed workplace.

Approximately three weeks after this initial mailing, a follow-up reminder letter was sent to those companies which had not yet responded. Three weeks later, a second reminder letter was sent to all non-respondents, including a duplicate questionnaire form. The deadline for receiving responses was set at 10 weeks from the original mailing date.

RESULTS

Survey Response

A total of 99 companies returned completed questionnaires of the 192 sent. Thus, the response rate overall was 99/192 or 51.5%. Returns from high and low accident plants, as defined here, were about equal, there being 50 responses for the high accident group, and 49 from the low accident group. Among these respondents were the high and low accident members of 42 of the 96 pairs of companies selected in the survey sample. The distribution of these pairs by industrial categories is shown in Table II together with the 1972 as well as 1973 median accident incidence for these paired high and low accident companies and their workforce sizes. The number of such paired returns to the total number designated per industrial category (indicated in Table I and in parentheses in Table II) revealed a marked disproportionality in survey response. Indeed, in terms of paired respondents, the response rates varied from a high of 70% (7 paired returns from a total of 10) for the paper products category to a low of 30% (4 paired returns out of a total of 13) for the food and kindred products group. While this result may question the representativeness of the data to be furnished

Paired High and Low Accident Companies Among Questionnaire Respondents

TABLE II

					-		
	•	Median	Number	Me	edian In	jury Rat	te
Industrial Classification	No. of	of Emp	loyees	19	972	19	973
SIC	Pairs	High	Low	High	Low	High	Low
Food and Kindred Products (2022)	4 (13) ¹	231	132	24.6		15.5	7.8
Wood Products (2431)	8 (14)	102	86	34.1	•	29.4	12.4
Paper Products (2621)	7 (10)	70	102	27.9	2.9	15.0	7.2
Primary Metals (3322)	5 (13)	150	119	75.5	27.3	74.3	42.5
Fabricated Metals (3442)	7 (19)	151	111	37.2	13.7	51.7	14.3
Machinery Manufacturing (3531)	11 (27)	98	132	22.9	7.2	20.6	10.7
OVERALL	42 (96)	138	113	32.8	8.2	26.2	., 12.6
 Medi	an Injury Rat	e Differ	ential		4:1 	2.2	5:1

 $^{^{1}}$ In parentheses appears number of pairs per industrial category in the total sample.

especially in the least responsive industrial categories, the respondent pairs in such groups could not necessarily be considered as atypical.

As shown in Table III, the respondents in these industrial groups had accident frequency rates which were reasonably close to the non-respondents (and comparable to the total group as well (see Table I)).

The low accident members of the respondent pairs did show a slight increase in their injury incidence from 1972 to 1973 while their high accident cohorts showed a slight decrease (see Table II). Regardless, the ratio of high to low accident rates for the paired respondent companies remained quite significant — from 4 to 1 on the basis of 1972 data, and 2.25 to 1 based on 1973 data.

Data Analyses - All Respondent Pairs

Questionnaire returns from the 42 paired respondents constituted the core data for evaluation. The nature of the questionnaire items and their replies necessitated a descriptive type of analysis augmented by a statistical one. All such analyses were directed to ascertaining differences in responses between the paired high and low accident companies on individual questions as well as clusters of items identified with the $\underline{6}$ subject areas noted earlier. A first evaluation was made on the data for the 42 paired respondents, irrespective of their

TABLE III

Median Injury Rates for 1972 for Non-Respondents

and Non-matched Respondents

	Low Accident Group	High Accident Group		
Food and Kindred Products(9) ¹	8.0	36.3		
Wood Products (6)	12.9	29.4		
Paper Products (3)	7.8	26.1		
Primary Metals (8)	12.0	60.4		
Fabricated Metals (12)	13.6	48.9		
Machinery Manufacture (16)	8.6	38.0		
Overall (54)	8.9	40.7		

¹Represents the numbers of paired companies from the original sample, one or both of whose members failed to respond to the questionnaire.

industrial category. Appendix B contains the collated responses for the high and low accident companies to each questionnaire item. Overall it appeared that the paired companies responded alike to many of the questions posed. Indeed, few response differences between the high and low accident companies attained statistical significance at conventionally used levels of confidence (i.e., a chance probability of .05 or less). A number of questionnaire items, however, revealed differences in the frequency of high and low accident companies following or favoring certain safety practices, which though failing statistical significance, were believed important enough to acknowledge. For this purpose, response tallies for the high versus low accident companies differing by more than 10% for cell response counts exceeding 30 were deemed notable. For smaller cell response counts, ranging between 15-29, a 25% differential was used. For counts between 5 and 14. a 40% differential served as a criterion. The minimum number of all counts considered in this evaluation was 5.

(1) Management Policies: Questions 1-11, 16-21, 39 sought information about certain management practices and policies deemed directly or indirectly expressive of company concern and involvement in workplace

safety efforts. Table V in a subsequent section on industry-specific results identifies those multiple-choice and yes/no questions which yielded significant or notable frequency differences in the responses of the high versus low accident companies for all respondent pairs to these questions. In Table IV are shown the responses to the completion Question #5 dealing with size of safety staff. Appendix B provides collated response data for all respondent pairs to these questions.

Response differences between the high and low accident companies were found statistically significant to two questions, namely, Questions 1 and 5. The replies to Question 1 indicated that while the training of persons responsible for safety programs in both the high and low accident companies was mostly gained "by coming up through the ranks," more high than low accident companies had safety officers with additional formal training (e.g., certificates from safety training programs and special safety courses). Management in the high accident companies may feel more compelled to seek this added training for their safety staff owing to their more serious injury control problems and the need to more effectively cope with them. Perhaps for the same reason, the high accident group showed significantly more staff people involved in directing safety program work (see responses to Q-5 summarized in Table V). In this instance, however, it is also seen that these were predominantly part-time responsibilities and the amount of time spent per staff person on safety was less than that shown for safety

Different types of non-parametric statistical tests were used in evaluating response differences between high and low accident companies for the questionnaire items. The specific test used and the probability level associated with any significant differences are noted for individual questions in appropriately referenced Tables and in Appendix B.

TARIF IV

Safety Staffing in Paired High and Low Accident Companies (Responses to Question 5)

ss Personnel	Median % Time	. 10 (3)		20 (5)	10 (6)	14 (4)	10 (5)	8 (7)	10 (30)	
High Accident Companies	Part-Time Personnel	Median Number	()		3 (8)	5 (7)	8 (5)	5 (7)	3 (11)	5 (42)
High Accid	Full-Time Directors	Numbers of Plants with 1 or more	(%)	(†)	(8) 0	2 (7)	1 (5)	1 (7)	2 (11)	7 (42)
	Part-Time Personnel	Median % Time	10 (3)		5 (5)	33 (5)	20 (3)	13 (5)	10 (9)	15 (30)
Accident Companies	Part-Time	Median Number	()		(8)	1 (7)	3 (5)	2 (7)	2 (11)	2 (42)
Low Acciden	Full-Time Directors	Numbers of Plants with 1 or more	, (,,)1	(‡) 7	1 (8)	2 (7)	1 (5)	3 (4)	3 (11)	12 (42)
	Industrial	dno	Food and Kindred		Wood Products	Paper Products	Primary Metals	Fabricated Metals	Machinery Manufacture	Overal1

Notes: $^{
m l}$ In parentheses are numbers of respondents who supplied data used in computing the tabled results.

²Difference between numbers of part-time safety personnel for low versus high accident companies constituting all pairs was statistically significant (p < .05) based on Wilcoxon matched-pair Sign Ranks Test (7). mented safety effort in the high accident work establishments.

Emphasizing this point, more of the low accident companies also had a full-time safety director than did the high accident companies.

Some other slight but notable response differences between high and low accident companies, possibly indicative of differences in managerial concern for safety, are as follows:

- The inclusion of the highest ranking safety official in a plant in its top management structure was more evident in the low relative to the high accident companies (Q-6).

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- While the high and low accident companies both overwhelmingly believed that the worker's family and the outside community can have a beneficial effect on the worker's safety performance, more low accident companies actually initiated efforts to use such influences in enhancing safety consciousness in their employees (Q-20,21).
- More low accident companies had initiated occupational alcoholism programs (Q-16).

Of interest was the indication that more low accident firms involved union representatives in the formal development of safety programs than did the high accident companies (Q-11). This may furnish a means for gaining greater worker acceptance to established safety rules and therein better safety performance. Unionization was not a basis for matching the high and low accident companies in the study sample however, and it was not ascertained how many of the paired companies were, in fact, unionized.

Unlike the Shafai-Sahrai study (3), the paired high and low accident companies showed no observable differences in the regularity of including safety items on management meeting agenda (Q-7). Responses from high versus low accident companies in gauging whether safety programs had any beneficial effect on reducing plant operational costs represented mostly guesses on the part of the respondents (Q-8,9,10). Perhaps meriting mention is the fact that high accident companies believed smaller savings in operation costs to accrue from safety efforts (Q-9). The high and low accident companies gave near equivalent responses to Q-39 mainly indicating that no monies were specifically ear-marked for safety operations in their firms.

(2) Motivational Techniques: Questions 12-15,42,43,44,45 and 47 were intended to reveal the nature of techniques, both positive and negative,

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which were aimed at promoting safe worker performance. Table VI in a subsequent section on industry-specific results identifies those multiple-choice and yes/no questions which yielded significant or notable frequency differences in the responses of the high versus low accident companies for all respondent pairs to these questions. Appendix B provides collated response data for all pairs to these questions.

Examination of the responses to Questions 12-15 indicated that the paired high and low accident companies essentially sampled the same variety of safety incentive and promotional schemes. Further, the same techniques were most popular and considered most effective by both the high and lowaccident companies. Specifically, the inclusion of safety attitudes and evidence of safe work behavior in worker performance evaluations and the use of posters and signs in safety promotions were the most frequently used motivational practices (Q-12,14) by both the high and low accident firms, and also judged most effective (0-13,15). At the same time, however, the low accident companies showed more responses than their high accident cohorts to nearly all of the different incentive and safety promotion categories listed in Questions 12 and 14. This suggests that the low accident companies may be more inclined toward using multiple or varied approaches in their motivational efforts than is the case for the high accident firms. In this regard, publicity of outstanding safety performance, tally of accident-free man-hours, circulation of safety pamphlets had fairly high popularity as added incentive and promotional measures.

Questions 43, 44, 46 and 47 dealt with aspects of disciplinary actions for unsafe worker acts and safety violations. Verbal and written reprimands were the predominant methods of choice in handling such problems in both the high and low accident companies, with written notices considered the more effective practice. While not as common a procedure, significantly more low accident companies also used transfers 机二十二型 化氯化 医二氯化 新原原子 to less hazardous jobs to cope with violators of safety rules or risktakers. The high accident companies showed a tendency to employ more stringent measures in these cases, namely, job suspension or disciplinary lay-off. More of the high accident companies also rated suspension as an effective method of dealing with violators of safety rules, whereas more of the low accident companies judged verbal reprimands as an effective remedy, second in importance to written reprimands. Response differences between the high and low accident company in the relative effectiveness of the above-noted disciplinary actions attained statistical significance. (See response tallies to 0-44 in Appendix B.)

(3) Training Practices: Questions 22-30 were concerned with elements of safety training in work establishments and related matters. Table VII in subsequent section on industry-specific results identifies those multiple-choice and yes/no questions which yielded significant or notable frequency differences in the responses of the high versus low accident companies for all respondent pairs to these questions. Appendix B 10 m

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provides collated response data for all pairs to these questions.

Response differences between the high and low accident firms to these questionnaire items, either approaching statistical significance or otherwise noteworthy, indicated the following:

- More of the low accident firms had formalized safety training programs as compared to the high accident companies (Q-22). A few more of the low accident firms also indicated special training procedures tailored for specific jobs (Q-28).
- More of the high accident companies gave (first-line) supervisors training in overseeing the safety of their work groups (Q-23).
- Whereas most high and low accident firms considered instruction by supervisors as the primary and most effective mode of safety training, more of the low accident companies augmented this instruction with other techniques such as group discussions, instruction by safety specialists, use of manuals than did the

high accident companies (Q-24,25). In fact, the low accident companies showed comparatively more responses to nearly all of the different listed training techniques than did the high accident companies (Q-24, 25). This suggests a more diversified or multiple approach used by the low accident companies in their training programs.

- More of the low accident plants offered <u>initial</u> safety training to all reassigned to new jobs or using new machinery(Q-26). More of the low accident plants also gave <u>follow-up</u> or <u>continuing</u> safety training to all employees, whereas the high accident companies tended more to offer such training to those persons in jobs where accidents had occurred, and especially those who had accidents or "near misses" recently (0-27).
- Both high and low accident companies predominantly relied on insurance carriers for safety information which they deemed particularly useful. An almost equal number of low accident companies also considered the National Safety Council to be a source of useful material as well,

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whereas the high accident companies favored more the local safety councils as a secondary source of safety information.

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(4) Hazard Control Measures: Questions 31-38, 40-42, and 45 were concerned with accident control techniques reflecting engineering, personal protection, and safety inspection strategies. Table VIII in a subsequent section on industry-specific results identifies those multiplechoice items and yes/no questions which yielded significant or notable frequency differences in the responses of the high versus low accident companies for all respondent pairs to these questions. Appendix B provides collated response data for all pairs to these questions. Inclusion of safety considerations in facility design and process planning, in purchase and installation of new plant equipment were acknowledged in the responses of most of the high and low accident companies (0-31,32, 33,34). Those responses of the high accident companies, however, tended to be more emphatic. They indicated more often than the low accident companies that such safety concerns were "always" considered rather than "often" or "occasionally." One could speculate on this basis that the high accident companies, owing to their relatively higher injury frequency rates, were concentrating heavily on engineering schemes for solution.

With regard to safety inspection procedures, most of the high and low accident companies made such checks at least once a month if not more frequently. More low accident companies than high accident ones made inspections on a daily basis (Q-36). On the other hand, the high accident companies used written checklists more often in their safety surveys than did the low accident companies (Q-37).

The distributions of responses given by the high and low accident companies to the separate parts of Question 41 and/or on personal protective equipment suggested the following:

- Similar types of protective equipment were noted as being used in both the high and low accident companies. Perhaps reflecting the severity of certain hazards more than others, the low accident companies indicated ear protectors as a required device for all workers more often than the high accident companies. The high accident companies stressed eye protection for all workers in more instances than did the low accident companies (Q-41).
- On the whole, there was a slight indication for more of the low accident companies to have workers pay more

of the initial and consequent replacement costs of protective equipment, notably, safety shoes, gloves, and eye protectors (Q-41).

While suggestive, none of the aforementioned differences between the responses of the high and low accident companies to the specified questions involving aspects of hazard control attained statistical significance.

(3) Accident Investigation and Reporting: Questions 48-62 dealt with company procedures of accident investigation and reporting. While none of the response differences between high and low accident companies to these questions are statistically significant, some are larger than others and therein deserve mention. Table IX in a subsequent section on industry specific results identifies those multiple-choice items and yes/no questions which yielded significant or notable frequency differences in the responses of the high versus low accident companies for all respondent pairs to these questions. Appendix B provides collated response data for all pairs to these questions.

As has been seen in some of the results reported so far, these notable differences can occur in other than the primary or most frequent choices of the respondent companies. For example, although both high and low accident companies equally acknowledged the existence of a system to report suspected hazards and most denoted the supervisor as the key

contact, several more low accident companies also indicated that safety personnel may be directly informed by workers. None of the high accident companies did the same(Q-48,49). More of the high accident firms relative to their cohorts indicated use of reporting forms unique to their companies in gathering information on both major and minor injuries, (Q-51,52). The low accident companies appeared slightly more responsive than the high accident companies in investigating accidents involving only minor injuries or narrow escapes (Q-54-55). Both types of respondents were equally prompt in initiating accident investigations though the low accident firms were quicker in responding to near miss incidents than were the high accident firms (Q-56).

Most of the respondents, irrespective of accident experience, included safety personnel, management representatives and worker supervisors in the investigation of work accidents. While not a common practice, a few more high accident companies had medical staff people participate, and more of the low accident firms included union officials and individual workers in these investigations (Q-57).

Less than 30% of the respondent companies, in both the high and low accident group, publicized the results of accident investigations in their plant news media (Q-58). According to the responses given

to Question 59, most of the high and low accident firms distributed accident reports to different levels of their management structure as well as to their safety staff. This practice was more evident in the high accident companies. A few more low accident firms sent such reports to union officials.

Approximately 11-12% more of the high accident companies as compared with the low accident companies indicated that they used accident statistics as a basis for modifying their safety programs and sought accident experience data from other plants engaged in similar operations (Q-60-61). More of the high accident group also noted use of their own plant statistics for this purpose (Q-62), but the high number of non-respondents to this question greatly qualifies this observation.

(6) Make-up of Workforce: Questions 63-68 were included in the questionnaire to gather information about the character of the production line
workers employed in the paired work establishments surveyed. Table X in a
subsequent section on industry-specific results summarizes responses to
these questions for high versus low accident companies. Appendix B
provides collated response data for all pairs as well as pairs by
industry group.

Median numbers of production workers calculated separately for the high and low accident members for all pairs were quite similar. The typical production workforce size for the high accident plants was 114 as compared with 122 for the low accident plants (Q-63). The bulk of responses for both sets of respondents suggested a primary range of 4 to 12 years in length of plant service. A few more low accident plants have workforces whose workers show more than 10 years experience (Q-64). The median length of service for the high accident companies was 8 years versus 10 years for the low accident companies.

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With regards to age, the high accident companies had workers predominantly in the age range 28 to 37 years, whereas the low accident companies reported more workers in the 33 to 42 year old categories. These responses to Question 65, however, also showed a greater spread of worker age among the low accident members of the study sample as compared with the high accident members. The median age for workers in the high accident companies was 33 years; for workers in the low accident companies it was 37 years.

Over three-quarters of the high and low accident respondents reported 60% or more of their workforce as married workers, with the low accident group showing an 80% rate in a few more plants (Q-66). The education level of

the production workers in the high and low accident plants was nearly equivalent, the majority of responses indicating high school or vocational school graduate backgrounds (Q-67).

A last question in this subject area dealt with the average number of workers reporting to a first-line foreman or supervisor. Responses here for both the high and low accident companies were not noticeably different. The most frequently chosen response category indicated 11-15 workers per foremen in the high and low accident companies. The median number for the high accident group was also 11-15 workers per foreman but for the low accident group it was 16-20 workers per foreman. This result is counter to Shafai-Sahrai's findings which indicated a larger span of supervisor control to be associated with poorer safety performance.

Data Analysis - Paired Respondents by Industrial Category

Recognizing that the total sample of paired high and low accident companies was selected from six different industrial categories, a second evaluation of the questionnaire data was made by industrial category. This assessment was entirely descriptive in nature owing to the relatively small number of respondent pairs per category. Much like the analysis performed on all respondent pairs, this one was also directed to uncovering outstanding differences between the high and low accident companies to questions identified with the six subject areas already mentioned. Such

differences for multiple-choice or yes/no type questions were defined by response tallies to a specified choice differing by at least 60%, given cell counts of 5 or less, or at least 40%, for cell counts greater than 5. The minimum number of responses per response choice subject to this evaluation was 3. Replies to other, completion type questions were individually analyzed. Responses to each questionnaire item for the high and low accident companies are collated by industrial category in Appendix B.

(1) Management Policies: Table V shows for each industrial group the nature of outstanding differences in response frequencies for high versus low accident companies in answering the multiple-choice and yes/no questions on management policies re safety.

Relatively few outstanding differences by industry are seen and most are in the same direction as the differences found in the total sample of pairs already described. This would suggest little inter-industry variation in response to the specified questions, the evident variance being mainly from certain industries showing enhancement of the response differences between high and low accident companies found in the total sample. Select illustrations of the latter are the following:

That more high than low accident companies had safety personnel with added formal training was particularly

TABLE V Differences in Response Frequencies for High vs. Low Accident Companies For All Pairs and Industry-Specific Pairs To Questions Related to Management Policies

Question Number	All Pairs	Food and Kindr.Prod	Wood Products	Paper Products	Primary Metals	Fabricated Metals	Machinery Manufacture
1	C,D*E			(+) d	g	(+) d	
2	B,F		(+) b				
3	B,D			(+) b			y/n
4	_			Le differen	ces		->-
6	A, B		(+) (+) a, b	1			(+) a
7			(†) a, c				(*) c
8	D						14.1°
9	A,E						
10	Y/N					(+) y/n	Rich Co.
11	C,E		(+) c		(-) c		а
16	Y/N					(+) y/n	
17	Y/N					(+) y/n	
18,19,20	_		no notab	le differen	ces		-
21	Y/N			(+) y/n	i.		
29	В						С

Note: All Pairs: Outstanding Differences defined by response tallies for high vs. low accident companies differing by more than 10% for cell counts of 30 or more; by more than 25% for cell counts ranging from 15 to 29; by more than 40% for cell counts of 5 to 14. Letters note response choices where such differences were found. Asterisks note statistical significance: $^*p < .05$.

Industry-Specific Pairs: Outstanding differences defined by response tallies for high and low accident companies differing by more than 40% for cell counts greater than 5, by 60% for cell counts of 3 to 5. Letters note response choices where such notable differences were found and were coded as follows:

(+) = difference for response choice in same direction as notable difference found for all pairs.

(-) = difference for response choice in opposite direction to notable difference

found for all pairs.

Letters without (±) signs represent notable differences by industry which do not occur across all pairs. Arrows (↑ ↓) indicate instances where such differences, occurring for the same response choice in more than one industry, lie in opposite directions.

noticeable in the paper products and machinery manufacturing groups (Q-1).

- The more frequent inclusion of ranking safety officials at the top management levels of low accident firms relative to high accident ones was especially seen in the wood products and machinery manufacturing groups.

 Frequency differences in response here were better than 2 to 1 (Q-6).
- The wood products group accentuated the differences found in the total sample analysis revealing more low than high accident companies using safety personnel in addition to supervisors as sources for safety information (Q-2). Incidentally, in paper products and fabricated metals, only the safety personnel supplied such material in both the high and low accident companies.

One exception to this overall trend was found in Question 11. The noted response difference for primary metals indicated that more high than low accident companies included union representatives in safety program

planning. This result was counter to that shown in the total sample analysis and, particularly, in the wood products group which showed such a practice to be more popular among the low accident companies. A distinct contrast in practices between high and low accident companies is seen within the wood products group responses to Question 7. Whereas more of the low accident firms in this group regularly included safety matters on their plant meeting agenda, their high accident cohorts did so only on an "as needed basis."

Table IV shows staff resources assigned to safety program matters in the high and low accident firms by industry (Q-5). High accident members of $\mathbb{R}^{N_{\mathrm{obs}}}$ the paper products and primary metals industries showed the largest number of persons devoting part-time efforts to safety program work in comparison to low accident members of the same industries. The latter low accident companies, however, displayed clearly more time spent per individual with a safety assignment.

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Motivational Techniques: Table VI displays outstanding frequency differences in response choices for high versus low accident companies, grouped by industry, for those questionnaire items dealing with motivational methods for promoting safe work. Many such differences stress those seen in the overall analyses. A number of others noted for specific

TABLE VI

Differences in Response Frequencies for High vs. Low Accident Companies For All Pairs and Industry-Specific Pairs To Questions Related to Motivational Techniques

Question Number	All Pairs	Food and Kindr.Prod	Wood Products	Paper Products	Primary Metals	Fabricated Metals	Machinery Manufacture
12	B,C,D,D	а	(+)(+)(+) b, c, e	(-) d		(+) b	
13	A,E		Ъ	(+)			
14	D	Ъ	(+) b, d	е			
15	A,C,D			(-) a			(+) c
43	Н				(+) h		
44	A,D,H*		(†) (+) b, d	(+)(\) a, b	(†)	(+) a	
46	B,C*F						(+)(+) c f
47	A*B,F**,G		(†) (+) b, g	(+)(\\psi)(+) a, b, f	,	(+) a,f	(\frac{1}{4})(+)(+) b, f, g
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Note: All Pairs: Outstanding Differences defined by response tallies for high vs. low accident companies differing by more than 10% for cell counts of 30 or more; by more than 25% for cell counts ranging from 15 to 29; by more than 40% for cell counts of 5 to 14. Letters note response choices where such differences were found. Asterisks note statistical significance: *p < .05; **p < .01.

Industry-Specific Pairs: Outstanding differences defined by response tallies for high and low accident companies differing by more than 40% for cell counts greater than 5, by 60% for cell counts of 3 to 5. Letters note response choices where such notable differences were found and were coded as follows:

(+) = difference for response choice in same direction as notable difference found for all pairs.

(-) = difference for response choice in opposite direction to notable difference

found for all pairs.

Letters without (±) signs represent notable differences by industry which do not occur across all pairs. Arrows (↑ 4) indicate instances where such differences, occurring for the same response choice in more than one industry, lie in opposite directions.

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In some instances this is due to the response differences between high and low accident firms in one industry being opposite to those found in another industry for a given question and thus cancelling each other.

Some illustrations of these and other types of differences reflective of inter-industry variance in responding to the questions dealing with motivational practices are elaborated below.

In wood products more than the other industrial groups, the low accident companies showed use of more varied incentive and promotional safety techniques than was the case for their high accident cohorts (Q-12,14).

Individual techniques varied greatly in their popularity however, among high and low accident companies from industry to industry. For example, more high than low accident firms in paper products used cash awards or prizes as incentives, a finding which was counter to the overall sample results. In food products, the high accident companies favored use of pamphlets and circulars for safety promotions whereas the reverse was true in wood products, i.e., more of the low accident companies followed this practice.

Regarding disciplinary measures, high accident companies in primary metals stood out as prescribing disciplinary lay-offs in handling those who failed to wear required personal protective devices (Q-43). Other

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industrial groups, regardless of the accident experience of the paired companies, used verbal and written reprimands in these cases.

Contrasts in disciplinary measures between high and low accident companies within one industry, machinery manufacturing, were found in responses to Question 46. More high accident companies in this group used suspensions in coping with violators of safety rules; the low accident companies favored transfers to less hazardous jobs. To highlight another instance of contrasting responses within one industry, relatively more low accident firms in fabricated metals rated verbal reprimands as an effective disciplinary measure. The high accident firms in this same group considered dismissals as most effective.

the nature of outstanding differences in response frequencies for high versus low accident companies in answering the multiple-choice and yes/no questions on aspects of job safety training. Such response differences are most numerous for the wood products group, all but one affirming those also seen in the overall analyses. The exception is one of several industry specific response differences between high and low accident companies which do not reveal themselves in the overall results. Some examples of the variations in training practices between high and low accident companies among the different industry groups are noted below.

TABLE VII

Differences in Response Frequencies for High vs. Low Accident Companies For All Pairs and Industry-Specific Pairs To Questions Related to Training Practices

Question Number	All Pairs	Food and Kindr.Prod	Wood Products	Paper Products	Primary Metals	Fabricated Metals	Machinery Manufactur
22	Y/N						
23	Y/N*				(+) y/n		
24	С,Н		d,e		<u> </u>	d,f	g
25	A,F		(+) b, f	(†)(+) c, f	ь	c (\psi)	
26	E		d			(+) e	с
27	A,E		(+) a		·		<u> </u>
28			no notabl	e differenc	es		>
29	А,В	(+) b	(+) a		(+) b		
30	A,D.H		(+) a	(+) a,g	(+) a,b,f		d
**							·-',
							·
·							
							

Note: All Pairs: Outstanding Differences defined by response tallies for high vs. low accident companies differing by more than 10% for cell counts of 30 or more; by more than 25% for cell counts ranging from 15 to 29; by more than 40% for cell counts of 5 to 14. Letters note response choices where such differences were found. Asterisks note statistical significance: *p < .05.

Industry-Specific Pairs: Outstanding differences defined by response tallies for high and low accident companies differing by more than 40% for cell counts greater than 5, by 60% for cell counts of 3 to 5. Letters note response choices where such notable differences were found and were coded as follows:

(+) = difference for response choice in same direction as notable difference found for all pairs.

(-) = difference for response choice in opposite direction to notable difference

found for all pairs.

Letters without (+) signs represent notable differences by industry which do not occur across all pairs. Arrows († 1) indicate instances where such differences, occurring for the same response choice in more than one industry, lie in opposite directions.

Of the 6 industrial groups, primary metals stood out in showing more high than low accident companies with supervisors receiving training in overseeing the safety of their work groups (Q-23).

The largest response difference between the high and low accident companies in training techniques occurred in the fabricated metals industry. More low accident members of this group favored supervisor's instruction and manuals for safety training purposes. With regard to the effectiveness of different techniques, a notable contrast was found in paper products. The high accident companies in this industry rate supervisor instruction as the most effective technique whereas the low accident firms judged group discussion as most effective (9-25).

Wood products and machinery manufacturing revealed the greatest differences in their high versus low accident companies in considering the availability of continuing safety training to their workers (Q-27). The low accident firms in these industries more frequently provided such training for all of their workers.

Perceived effectiveness of training program materials revealed some variable differences between high and low accident companies. In wood products and primary metals, more low than high accident members rated

national and local safety council information as being particularly useful to their training efforts. This tendency was partially reversed by the food products group whose high accident companies also judged local safety council material as useful to their safety program needs.

(4) <u>Hazard Control Measures:</u> Table VIII shows, by industry, the number and nature of outstanding differences in response frequencies for high versus low accident companies in answering certain questionnaire items concerned with hazard control techniques. These differences are most numerous for the machinery manufacturing group, with several being in directions counter to the trends prevalent in the total sample, or opposite to those found within the other industrial groups. This interindustry variation can be elaborated through focussing on the response data to a few questions in this subject area.

Akin to the results noted in the total sample, the paper products and fabricated metals groups each showed more of their high accident members always to include safety considerations in designing or renovating new plant facilities and work processes, and in new equipment specifications (Q-31,32). Fewer low accident companies in these industries did so, indicating only occasional inclinations of this type. The reverse seems true, however, for machinery manufacturing. More low than high accident

TABLE VIII

Differences in Response Frequencies for High vs. Low Accident Companies For All Pairs and Industry-Specific Pairs To Questions Related to Hazard Control

Question Number	All Pairs	Food and Kindr.Prod.	Wood, Products	Paper Products	Primary Metals	Fabricated Metals	Machinery Manufacture
31	A,C	(+) b, c		(+)(+) a, c	·	(+)(+) a, c	(-) (-) a,b,c
32	A,C		(+) c	(+)(+) a c		(+)(+) a, c	(-) b, c
33	A			(4) b,c			(∲) b
34	A,D			(+) a			ь
. 35	≪			e differenc	es		>-
36	A	(+) a	(1)		(*) b	(\)	
37	B,C					(+)	(+) a,c
38			e			-	
40	<	,	- no notabl	e differenc	es		>
41	I,J		а	(+)(∱) j, d			(\psi) k,d
42	B,G,J	(+) b	(+) j	(+) j		(+) d,g,i	(+) f,j
45		1.2					С
			,		ř ,		
						V.	

Note: All Pairs: Outstanding Differences defined by response tallies for high vs. low accident companies differing by more than 10% for cell counts of 30 or more; by more than 25% for cell counts ranging from 15 to 29; by more than 40% for cell counts of 5 to 14. Letters note response choices where such differences were found.

Industry-Specific Pairs: Outstanding differences defined by response tallies for high and low accident companies differing by more than 40% for cell counts greater than 5, by 60% for cell counts of 3 to 5. Letters note response choices where such notable differences were found and were coded as follows:

Letters without (\pm) signs represent notable differences by industry which do not occur across all pairs. Arrows $(\uparrow \downarrow)$ indicate instances where such differences, occurring for the same response choice in more than one industry, lie in opposite directions.

^{(+) =} difference for response choice in same direction sa notable difference found for all pairs.

^{(-) =} difference for response choice in opposite direction to notable difference found for all pairs.

companies in this industry group always considered safety factors in plant and process design and in equipment purchases. This was the most striking contrast seen in the responses given to the questions in the hazard control area.

The machinery manufacturing and wood products groups also showed contrasting differences between their high and low accident members with regard to company payment for personal protective equipment (Q-41a). More high accident firms in machinery manufacture had their workers assume the greater share of the cost for safety shoes; the same was true for more of the low accident companies in wood products.

Some industry-specific differences exist for frequency of safety inspections but show no clear association with high and low accident companies (Q-36). The food industry group indicated that more of their low accident members conducted inspections on a daily basis. Weekly inspections were more popular among the high accident companies in the primary and fabricated metals groups and also among the low accident members of wood products. In the machinery manufacturing companies, monthly safety inspections appeared to be most common for both the high and low accident companies.

(5) Accident Investigation and Reporting: Table IX shows, by industry, the number and nature of outstanding differences in response frequencies for high versus low accident companies in answering questions concerned

TABLE IX

Differences in Response Frequencies for High vs. Low Accident Companies For All Pairs and Industry-Specific Pairs To Ouestions on Accident Investigations and Reporting

Question Number	All Pairs	Food and Kindr.Prod.	Wood Products	Paper Products	Primary Metals	Fabricated Metals	Machinery Manufacture
48	-		no notabl	e differend	es ———		->-
49	D						
50	-		— no notab]	e differenc	es-		
51	В						
52	A,C	_	(-) a				
53	В						
54	A,B		(+) a		,		
55		а		-			·
56	c',c"		ъ'	c"			
₅₋ 5-7 _{.5}	A,D						(+) a,f
58				y/n			,
59	A,E				g	(+) a,b	
60			(1) y/n			(\) y/n	(\psi) y/n
61			(†) y/n			<u> </u>	(∤) y/n
62	·		(\f) y/n				(∀) y/n

Note: All Pairs: Outstanding Differences defined by response tallies for high vs. low accident companies differing by more than 10% for cell counts of 30 or more; by more than 25% for cell counts ranging from 15 to 29; by more than 40% for cell counts of 5 to 14. Letters note response choices where such differences were found.

Industry-Specific Pairs: Outstanding differences defined by response tallies for high and low accident companies differing by more than 40% for cell counts greater than 5, by 60% for cell counts of 3 to 5. Letters note response choices where such notable differences were found and were coded as follows:

(-) = difference for response choice in opposite direction to notable difference

found for all pairs.

Letters without (±) signs represent notable differences by industry which do not occur across all pairs. Arrows (↑ ↓) indicate instances where such differences, occurring for the same response choice in more than one industry, lie in opposite directions.

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^{(+) =} difference for response choice in same direction as notable difference found for all pairs.

with accident investigation and reporting. Some evidence for interindustry variation was seen in that notable response differences for wood products were in directions counter to the total sample results for items (Q-52,60,61,62), and particularly contrasted with those differences found in machinery manufacturing, fabricated metals, and paper products for these questions. In these latter industrial groups, especially machinery manufacturing, more high than low accident companies used accident statistics from their own as well as other companies in gauging the effectiveness of their safety program efforts and making needed adjustments. In the wood products group, it was the low more than the high accident companies which followed this practice.

Use of special accident reporting forms showed no consistent association with high or low accident companies from industry to industry (0-50). The low accident members of the food industry group used such forms more than their high accident cohorts, but the reverse was true for the paper products and machinery manufacturing groups. As in the hazard control subject area, machinery manufacturing showed the greatest number of notable response differences between high and low accident companies. These differences supported, if not, accounted for many of the outstanding differences found in the total sample results.

(6) Make-up of Workforce: Table X indicates the median number of production employees reported for the paired high and low accident establishments in the different industrial categories. Such data were collected in response to Question 63 and show essential equality in production workforce size between the paired members in 4 of the 6 industrial groups. The apparent mismatches occur in the fabricated metals and machinery manufacuring companies. The former group shows the low accident firms with typically fewer production-line workers relative to the high accident ones, the latter indicates the opposite. Since the initial pairing of the surveyed companies on the workforce size variable was based on OSHA 103 data collected in 1972, and in some instances reflected total employment size, the above-mentioned disparities could be due to these factors or employment changes between the time of initial selection and questionnaire reply peculiar to the two industries.

Table X summarizes other response data from the high and low accident companies, classified by industry, for the other questionnaire items concerned with the make-up of the workforce. Tendencies for the low accident companies to have older, more experienced workers relative to the high accident companies are seen in several industries, with slightly stonger differentials occurring in wood products, primary and fabricated metals. High accident members of the primary metals group indicated the smallest proportion of their workforce as being married in comparison to their low accident cohorts.

TABLE X
Make-up of Production Workforce in Paired
High and Low Accident Companies

	Injury Rate	All Pairs N=42	Food and Kindr.Prod. N=4	Wood Products N=8	Paper Products N=7	Primary Metals N=5	Fabricated Metals	Machinery Manufacture N=11
Median Size of Production Force (Q-63)	High Low	114	154	100	118 107	145 140	85	180
Median Years with Plant (Q-64)	High Low	8 10	8 8	7 10	10	9 8	10	
Median Age of Production Force (Q-65)	High Low	33	30 31	38	34	30	33	35 35
Median % of Workforce Married (Q-68)	High Low	65	65	65	65	55	70 75	70 70 70
Median Education Level in Years (0-67)	High Low	12 12	12 10	12 12	12 12	10 10	12 12	12 12
Median Span of Supervision in numbers of workers (Q-68)	High Low	13	10	18	13 13	16 20	13	16

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All differences in specified characteristics of production workforce were found to be statistically insignificant when tested by the Wilcox on matched-pairs, sign-ranks test (7). Note:

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There were no notable industry-specific differences in either education level of the production workers or the span of supervisor control for companies with high versus low accident experience.

Data Analysis - Select Pairs

In an effort to contrast further apparent differences in safety program practices, the questionnaire data for six select pairs of high and low accident companies were separately analyzed. One pair was drawn from each of the six industrial groups. Each pair was chosen on the basis of showing the greatest differential in injury incidence between its high and low accident members as reported (OSHA-BLS 103 Form) for both 1972 and 1973 in its respective industrial group. The incidence values for the six select pairs are shown in Table XI.

A scoring procedure was established for defining notable response differences between the 6 pairs of matched high and low accident companies. Specifically, differences of 60% or more between the response choices of the high vs. low accident members in the 6 pairs for a given questionnaire item was considered "notable." Such differences were classified as (a) showing response preferences between high vs. low accident members partly or wholly in agreement with those seen in analyzing all respondent pairs, (b) showing response preferences

TABLE XI
Injury Incidence for High and Low Accident
Members of Six Selected Pairs of Respondents

		Injury	Incidence	. :
	197	2	19	73
	Low	High	Low	High
Pair 1 (Food & Kindred Prod.)	1.9	18.6	4.8	15.5
Pair 2 (Wood Products)	6.7	34.7	9.8	33.9
Pair 3 (Paper Products)	4.0	14.9	6.9	23.7
Pair 4 (Primary Metals)	27.3	82.1	34.8	126.2
Pair 5 (Fabricated Metals)	6.6	45.3	10.5	51.7
Pair 6 (Machinery Manuf.)	7.0	31.3	6.0	31,.4

Median Injury Rate Differential

Committee of the second second

1:5.4

1 : 3.6

¹Refers to number of recordable injuries (i.e., involving more than just first aid) per 100 man-years of work.

between high vs. low accident members partly or wholly in disagreement with those differences found in analyzing all respondent pairs, and (c) showing no common response preference across either the high or low accident members in the six pairs.

The results of analyzing the questionnaire responses of the six select pairs are shown in Table XII. Most items displaying notable discriminate responses showed them to be in directions wholly or partially supportive of those also seen in the total sample. The following are illustrative of the strongest differences between the high and low accident companies found in both the total sample and in the 6 select pairs:

- (1) More high than low accident companies had safety officials with formal safety training such as completion of certificated safety courses.
- (2) More low than high accident plants had initiated community and family-type approaches to instilling safety consciousness in workers.
- (3) More low than high accident companies showed a variety of incentive techniques in their safety program efforts.
- (4) More high than low accident companies stressed stronger disciplinary measures such as suspensions and dismissals of workers who

TABLE XII

Questionnaire Items Revealing Notable Differential
Responses Between High and Low Accident
Members of Six Select Pairs

Program Area	Questions Showing Differential Response Between Paired Members
Management Policies (Q 1-11, 16-21, 39)	(+) (0) (0) (0) (+) (0) 1, 4, 6, 9, 21, 39
Motivational Techniques (Q 12-15, 42-44, 46, 47)	(+) (+) (+) 12, 44, 47
Training Practices (Q 22-30)	(0) (+) 26, 30
Hazard Control Measures (Q 31-38, 40-42, 45)	(+) (+) (+) (0) (0) 31, 32, 36, 37, 45
Accident Investigation and Reporting (Q 48-62)	(+) 56
Make-up of Workforce (Q 63-68)	(+) (+) 64, 68

Defined by differences of 60% or more between the response choices of the high versus low accident members in the six pairs. The symbol (+) indicates differential response choices for a given question in directions conforming to that found in analyzing all respondent pairs. The symbol (-) indicates differential response choices for a given question opposite to those seen in analyzing all respondent pairs. The symbol (0) shows no common response preference among the high or low accident members in the six pairs. The symbols ($\frac{1}{2}$) and ($\frac{9}{2}$) indicate differential responses between the paired high and low accident plants in directions partially supportive ($\frac{1}{2}$) or partially non-supportive ($\frac{9}{2}$) of the differences found in analyzing the responses for all respondent pairs.

violate safety rules as compared to the low accident companies who were more inclined to use verbal reprimands, transfers to less hazardous jobs in such matters.

- (5) The high accident companies gave more emphasis to engineering approaches to hazard control as compared with their low accident cohorts.
- (6) The high accident companies tended to have workers with fewer years of production experience in their plants relative to those employed in the low accident companies.

There were five questionnaire items (Q-4,6,9,39,95) which evoked notable differential responses between the high and low accident members of the six pairs but which indicated no common choices for either the high or low accident firms. This would suggest situation specific differences.

There were two questionnaire items (Q-26,37) which revealed notable differences in directions partially counter to those found in the total sample of respondent pairs. By way of elaboration, the responses of the high accident members relative to the low accident cohorts in the 6 select pairs showed them offering equal or more frequent oppor-

tunities for initial safety training, especially for all new production employees and reassigned workers. The total sample found the reverse to be true. With regard to Question 37, the total sample of respondents showed more high than low accident companies to favor use of written checklists in safety inspections. In the analysis of the response of the six select pairs, the low and high accident members showed nearly equal usage of written checklists for safety inspections.

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DISCUSSION

Despite the lack of large scale or substantial numbers of significant differences, comparisons of the questionnaire responses of the high versus low accident companies did yield some suggestive evidence for variances in their respective safety program practices and other factors. Among those attributes found in the different evaluations to be more common to the low accident companies than to the high accident ones were the following:

- (1) The ranking safety official was at the top management level of the work establishment whose staff included either a full-time safety director or part-time persons with significant time assigned to safety program direction.
- (2) Greater efforts made to influence the safety consciousness of their workers through enlisting family and community involvement in company safety campaigns.
- (3) Emphasis on using more varied incentives and promotional techniques to enhance safe work performance.
- (4) More regard for the effectiveness of measures other than suspension in disciplining risk-takers or violators of safety rules.

- (5) More formalized safety training including special training to fit specific job needs and use of group discussions, lectures by safety specialists, to augment main safety instruction by worker supervisor.
- (6) Availability of continuing safety training to all employees as opposed to concentrating such training only on those who hold high risk jobs or who have had recent accidents.
- (7) More frequent though less formal safety inspections of workplaces to supplement or perhaps substitute for more formalized inspections at relatively longer intervals.
- (8) A slightly older workforce with somewhat longer company service and a slightly greater percentage of married workers.

Some of these characteristics have also been reported in other earlier studies seeking to define factors related to successful safety performance (1,2,3). These were the relatively high stature and staff commitment given to the direction of company safety efforts, the family/community approach to influencing safety concerns among plant workers, and the presence of more stabilizing qualities in the workforce. Still others

listed here, however, extend existing knowledge through furnishing added ideas about accepted safety practices which could enhance their effectiveness. For example, using a variety of incentives and promotional techniques in concert rather than stressing any singular scheme may be a key to gaining greater safety motivation in workers. Similarly, varied forms of job safety instruction with group discussions, lectures by safety specialists to augment the supervisor's training of the worker may be important means for ungrading the expected value of safety training. Though informal, the more frequent inspections of work areas, as reported by the low accident companies, would offer increased opportunities for early recognition of workplace hazards or improper job behaviors and therein promote, more timely remediala actions. Moreover, the informal, frequent nature of such visitations could foster closer interactions among line worker, foreman and safety personnel which could be beneficial in handling individual worker problems pertaining to job safety so as to prevent them from becoming serious enough to warrant strong disciplinary actions. Perhaps, this was the basis for more low accident companies preferring alternatives other than suspension or dismissals in dealing with violators of safety rules. Another explanation is that because of their good safety performance, the low accident companies can be more tolerant and more willing to help the worker overcome any errant job behavior. In contrast, the

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high accident companies may feel compelled to act in a more expeditious manner with violators of safety rules, especially if their roster includes many such problem workers. These thoughts are only conjectural. The follow-up site visits to a sub-sample of the high and low accident companies may furnish more information about the circumstances actually dictating differences in these and other safety practices under discussion here.

Overall, the high accident companies were more emphatic than their low accident cohorts in acknowledging needs for safety features in designing new plant facilities and work processes, and in new equipment specifications. This result may be a reaction of the high accident companies to their current safety performance problems. Without question, engineering approaches can reduce or eliminate unsafe work conditions. Sole dependency on these measures, however may not be sufficient to bring accident rates down to acceptable levels. The more moderate emphasis given by the low accident companies to using physical controls for safety could be reflective of a program orientation providing more balance between engineering and non-engineering measures. While this balance could be offered as another discriminatory factor, it should be mentioned too that there was strong inter-industry variation in the responses given to the questionnaire items on hazard control. In fact, the high and low accident companies in machinery manufacturing gave

results opposite to the overall trend, i.e., more low than high accident companies in this industrial group always included safety factors in their facility planning, equipment purchases, etc..

The high accident companies also reported more extensive formal training of their personnel responsible for safety programming than the low accident group. This too could be interpreted as a response to the more evident problems in the high accident group. This increased training of safety officials plus more concern for hazard control may be just starting to show its desired effect. The injury frequency rates for the high accident companies in 1973 were lower than those reported in 1972 (though still much higher than the rates for comparable low accident companies).

One might ask why the differences between the safety program practices of the high and low accident companies were not more dramatic in view of their sizable differences in accident rates. One plausible explanation is that the high accident companies could be reporting many of their current safety program measures which are much more complete or intensive than those which previously existed. The aforementioned practices stressing physical hazard control measures and qualified safety personnel among high accident plants might be indicative. Obviously, the advent of the Occupational Safety and Health Act of

1970 (6) has been a stimulant to initiating effective safety actions in all work establishments, especially those showing the poorest safety performance. These circumstances could be obscuring differences between the safety program practices of the high and low accident groups which might have otherwise existed.

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As another point, none of the practices found to vary between the high and low accident plants can be given greater or lesser importance in terms of the data gathered in the questionnaire survey. Nor is there a sufficient basis for suggesting that certain combinations of these practices identified with more of the low accident companies may be better than others in improving company safety performance. Circumstances specific to certain industries, if not, individual plants may dictate which practices are feasible to use and offer the best promise of success. The questionnaire data, analyzed by industrial groups, offered some indication of the extent to which practices found common to low accident companies may vary from industry to industry. The attributes of the low accident companies listed at the outset of this discussion section more or less persist in spite of these variations. Thus, they command attention in attempting to define some distinguishable yet generalizable factors related to successful safety performance in industry.

Numerous other factors, referenced in this questionnaire survey, are of obvious importance to accident prevention in industry besides the few discriminating items mentioned above. Indeed, respect for fundamental safety program elements and practices was seen in the question-naire responses of both the high and low accident companies. Many of the distinguishing factors represent minor or subtle variations on these basically sound schemes. Opinion polls of safety experts (5), used to define and rank in order of importance the elements of an effective industrial safety program, have acknowledged some but not all of these subtleties.

SUMMARY

This report described the questionnaire phase of a study examining safety program practices and related factors in work establishments with low accident rates versus similar companies with high accident rates. Pairs of manufacturing work establishments in Wisconsin were chosen as respondents, the members of each pair being comparable in industrial operation (3-, 4-digit SIC), workforce size, and geographic locale, but differing by at least 2 to 1 in the incidence of recordable injuries for 1972 year based upon their OSHA-BLS 103 reports. These paired establishments sampled six different types of industries in Wisconsin which were: food and kindred products, wood products, paper products, primary metals, fabricated metals, and machinery manufacture. High and low accident members of 42 pairs of companies from a total of 96 pairs, originally sent questionnaires, returned their forms and constituted the study sample.

Descriptive and statistical analyses were performed on the questionnaire data of the 42 pairs of high and low accident companies to isolate any differences in responses to items dealing with extent of management commitment to safety, motivational approaches to worker safety, job safety training, nature of hazard control practices, accident investigation and reporting procedures, and make-up of production workforce.

Such analyses were completed for all respondent pairs, pairs classified by industry, and select pairs displaying the greatest accident rate differentials within each of the six industrial groups.

The results showed no obvious or large scale differences between the questionnaire responses of the paired high and low accident companies in any of these evaluations. Indeed, few response differences were found large enough to attain statistical significance. On the other hand, the distributions of the responses to several questions did reveal differences in the numbers of high versus low accident companies favoring certain primary safety practices, and in the use and effectiveness of specific secondary and third-order program measures. Such types of differences indicated the following:

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(1) More of the low accident companies had their highest safety officials at top management levels of their firms, and more employed one or more full-time safety personnel relative to their high accident cohorts.

Though the high accident companies indicated more persons involved in directing safety efforts, these were predominantly part-time responsibilities with the amount of time spent per staff person on safety being less than that indicated for part-time persons with similar assignments in the low accident companies. This could suggest a more fragmented safety effort in the high accident work establishments.

- (2) While the high and low accident companies both overwhelmingly believe that the worker's family and
 community can have a beneficial effect on the worker's
 safety performance, more low accident companies had
 actually undertaken these efforts to use such
 influences in enhancing safety consciousness in their
 workers.
- incentives and promotional techniques in multiple fashion. While the inclusion of safety attitudes in worker performance evaluations, and use of signs and posters are the most popular promotional practices in both high and low accident plants, more of the low accident firms also employed publicity of outstanding safety performance, tallies of accident-free man hours, and cash awards and prizes as additional incentives and promotional devices.
- (4) With regard to disciplinary actions for unsafe acts and safety violations, verbal and written reprimands were the predominant methods of choice for both the high and low accident companies. Though less common, more low

accident companies also used transfer to less hazardous jobs in dealing with these problems whereas the high accident companies showed a greater tendency to use harsher measures such as suspensions. More low accident companies also rated verbal reprimands as an effective disciplinary technique than did the high accident ones who deemed disciplinary lay-offs as most effective.

- (5) More of the low accident firms had (a) formalized and special training programs to meet specific job needs, (b) augmented supervisor's instruction with other techniques such as group discussions and lectures by safety specialists, (c) provided continuing safety training to all employees as opposed to the high accident companies who tended to offer such training only to those persons in jobs showing recurrent accidents and especially those who had accidents recently.
- (6) More of the high accident companies than the low accident firms indicated that they <u>always</u> included safety considerations in new facility design and

process planning, in purchase and installation of new plant equipment. The low accident companies were less emphatic about these considerations, However, there were strong inter-industry variations in these practices. For example, the pairs of companies in machinery manufacturing showed results opposite to the overall trend just noted, i.e., more low than high accident companies in this industry always included safety in their facilities planning.

- (7) More low than high accident companies indicated that worksite inspections were held on a daily basis but these seemed informal in nature. The high accident companies used written checklists more often in their safety surveys than did the low accident companies.
- (8) The low accident companies showed slightly more inclination to investigate minor injuries and narrow escapes. Both high and low accident companies were equally responsive to major accidents.
- (9) On the average, the production workforce of the low accident companies was slightly older and had somewhat more experience than the workforce in the high

accident companies. The low accident companies also indicated a slightly greater percentage of their workforce as married. There were no differences in the formal educational level of the production employees found in the paired companies. The majority showed at least high school education.

These findings were discussed in the light of offering suggestive evidence that the low accident companies could be distinguished from the high accident companies by exhibiting:

- Greater stature and staff commitment given to direction of company safety effort.
- (2) Greater utilization of outside influences in instilling safety consciousness in workers.
- (3) Multiple use of a variety of safety promotional and incentive techniques.
- (4) Greater opportunities for general and specialized training with supplemental modes of instruction for all production personnel, e.g., group discussions, lectures by safety specialists).

- (5) More humanistic approach in disciplining risktakers and violators of safety rules.
- (6) More frequent though less formal inspections of the workplace as a supplement to or instead of formal inspections of relatively lengthy intervals.
- (7) A safety program emphasizing better balance between engineering and non-engineering approaches toward accident prevention and control.
- (8) More stable qualities in the make-up of the workforce, i.e., more older, married workers with longer time on the job.

Site visits and walk-through surveys of a subsample of the questionnaire respondents are currently being undertaken to amplify on the nature of their responses and ascertain any innovative measures these plants are using for hazard control. Conclusions regarding this project will be deferred until completion of this site visit phase.

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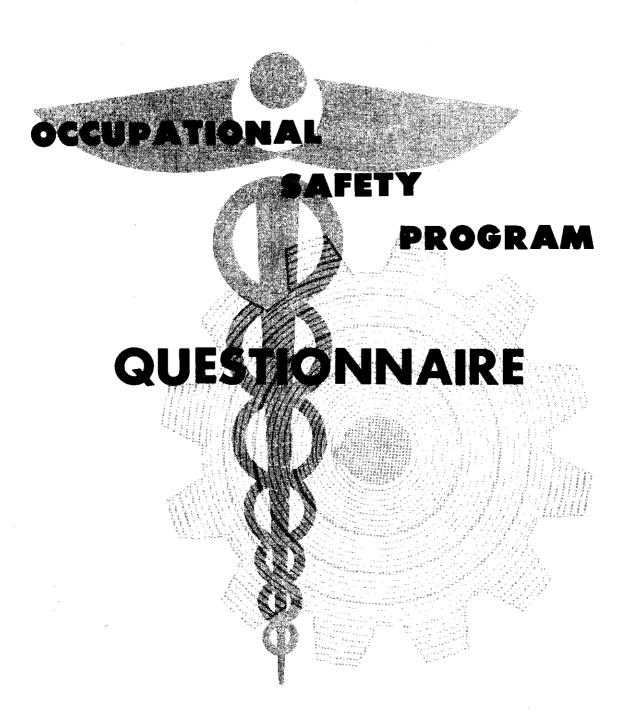
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APPENDIX A

OCCUPATIONAL SAFETY PROGRAM QUESTIONNAIRE



U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE Public Health Service

National Institute for Occupational Safety and Health Center for Disease Control

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NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH
Center for Disease Control
U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
CINCINNATI, OHIO 45202

OCCUPATIONAL SAFETY PROGRAM QUESTIONNAIRE

ASPECTS OF PARTICIPATION AND CONFIDENTIALITY

Participation in this survey study is strictly voluntary. The National Institute for Occupational Safety and Health plans to subject the responses to this questionnaire to statistical treatment only, and present them in a composite manner. The information elicited by certain questions in the questionnaire (noted by a double asterisk**) is considered by the Institute to be confidential commercial or financial information and not subject to mandatory disclosure under the Freedom of Information Act. Accordingly, the Institute will not disclose such information in a manner which identifies the information with a particular company.

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OCCUPATIONAL SAFETY PROGRAM QUESTIONNAIRE

Instructions:

The following questions deal with safety related activities or policies in your work establishment. The term "plant" in these questions can be interpreted to mean work facility, workplace, shop, mine, etc. as found at the addressed location. Admittedly, some questions may not be entirely applicable to your work situation. Nevertheless, please complete the questionnaire as best you can.

Almost all of the questions can be answered by circling the letter(s) before the appropriate answer or answers. For example:

Which of the following are often consequences of accidents? (circle as many as apply)

a. Worker injuries [14]
b. Increased productivity [15]
c. Worker lost time [16]

d. Improved quality control [17]

Note that in this question you are asked to circle as many as apply. In other questions, the appropriate letters of only one choice should be circled. For example:

Does your plant believe that safety is everyone's job?

a. Yes b. No [18]

Ignore numbers in brackets. They are for statistical purposes only.

The last sheet of the questionnaire form is for indicating whether you would be interested in members of the survey staff coming to your company for a walk-through survey and an exchange of ideas on safety practices. The code reference at the upper right hand corner of each page is being used in lieu of the establishment's name.

Please return the completed questionnaire in the enclosed envelope as promptly as you can.

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OCCUPATIONAL SAFETY PROGRAM QUESTIONNAIRE

1.	des	t training is required for persons who have responsibility for igning or directing safety programs in your plant? (circle as y as apply)	
	a.	No special training [9]	
	ъ.	Experience gained by coming up through the ranks [10]	
	c.	Specific college or training courses related to safety [11]	
	d.	Satisfactory completion of training program offering certificate in industrial safety [12]	e
	e.	Bachelor's degree in a field related to safety, <u>e.g.</u> , industrial or safety engineering, industrial hygiene, etc. [13]	-
	f.	Master's degree in a field related to safety [14]	•
	g.	Other (specify)	[15]
2.		m whom do workers directly receive safety training and safety ormation? (circle as many as apply)	
	а.	Worker's supervisor [16]	
	ъ.	Safety personnel [17]	
	c.	Fellow workers [18]	
	d.	Plant management [19]	
	e.	Plant medical personnel [20]	
	f.	Union representatives [21]	
	g.	Other (specify)	[22]
3.	Doe	s your company have its own safety manual or code of safety rules	?
	а.	Yes	
	ъ.	[23] No	
		·	

-					
4.		your plant, who is considered to be ety of employees? (circle only one)		responsibl	e for
	a.	Employee himself			,
	ь.	Employee's supervisor	٠.		
	c.	Plant management	[24]		
	d.	Safety personnel	[24]		•
	e.	Union		1	
	f.	Other (specify)		· :	
5 • · ·		many persons at your plant have ful designing or directing safety programmes.		-time respo	nsibility
	Fu1	1-time (number) [25-26]			
	Par	t-time (number) [27-28]			
ı		rage percentage of time devoted to see responsibility) [29-31		r those wit	h part-
6.	pla	what organizational level is the hig nt with full or part-time responsibi ecting safety programs? (circle onl	lity for		
` `\	a.	Top level plant management (individ top official of your plant)	ual repor	ting direct	ly to√
	ъ.	Middle level plant management (inditop level plant management)	vidual re	porting dir	-
	c.	Lower level plant management (indiv middle level plant management)	idual rep	orting dire	[32] ctly to
	d.	No one in our plant has full-time re	esponsibi	lity for sa	fety
7.		safety figures, reports, achievemen nt management meetings? (circle onl		led on the a	genda of
	a.	Yes, on a <u>regularly scheduled</u> basis			
	b.	Yes, on an <u>occasional</u> basis			[33]
	с.	Yes, only as needed	ari .		
	d.	No			
				•	

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	ion 8 may be difficult to answer. If no objective data are able, please provide your best guess.
**8.	Has your safety program had a beneficial effect on reducing overall operational costs?
	a. Yes, based on objective data (If yes, complete question 9 and omit question 10) [34
	b. Yes, based on best guess (If yes, complete question 9 and omit question .10)
	c. No, based on objective data (If no, omit question 9 and complete question 10)
	d. No, based on best guess (If no, omit question 9 and complete question 10)
**9.	What has been the approximate percentage savings?
	a. Less than one percent
	b. Between one and three percent
	[35] c. More than three percent but less than five percent
	d. Between five and ten percent
	e. More than ten percent
10.	Do you believe that operational costs can be reduced by an effective safety program?
	a. Yes
	[36] b. No
11.	Which of the following groups participate <u>formally</u> in the development of safety programs and practices? (circle as many as apply)
	a. Workers [37]
	b. Supervisors [38]
	c. Union representatives [39]
	d. Management [40]
	e. Other (specify) [41]

Code #_____

		Control of the Contro	ode #	. 2
12.		ich of the following do you use as incentive ircle as many as apply)	s to worker	safety:
	a.	Safety attitude and behavior included in we evaluation	orker perfor	mance [42-43]
	ъ.	Running tally of accident free man-hours	[44-45]	
	с.	Recognition awards, <u>e.g.</u> , certificates, me etc [46-47]	dals, dinner	s,
	d.	Cash awards or prizes [48-49]	A. C.	
	e.	Publicity of outstanding safety performance	e[50-51]
	f.	Other (specify)		[52-53]
13.	eff	ich of those incentives circled in question fective? Place a "1" after the most effecti cond most effective, and a "3" after the thi	ve, a "2" af	ter the
14.		ich of the following is used in promoting jony as apply).	b safety: (c	ircle as
٠.	а.	Posters/signs/slogans [54-55]		
	ъ.	Pamphlets/circulars [56-57]	•	•
	с.	Displays/exhibits [58-59]		
	d.	Safety contests between departments or wor	k groups	[60-61]
•	e. '	Safety contests between plants [6	2-63]	•
	f.	Other (specify) [64-65]		
15.	eff	ich of those means circled in question 14 do fective? Place a "1" after the most effecti cond most effective, and a "3" after the thi	ve, a "2" af	ter the

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b. No

			Co	ae #
16.	Doe	es your plant have an occupationa	ıl alcoholism	program?
	а.	Yes		
•	ъ.	No (If no, omit question 17)		[66]
17.	Do	you feel this program has had a	beneficial e	ffect on plant safety?
	a.	Yes		
	ъ.	No		[67]
	с.	Too early to assess		,
18.	Doe	s your plant have an occupationa	ıl drug abuse	program?
	a.	Yes		7403
	ъ.	No (If no, omit question 19)		[68]
19.	рo	you feel this program has had a	beneficial e	ffect on plant safety?
	a.	Yes		
	ъ.	No	-	[69]
	c.			
20.		you feel that the worker's famil e a beneficial effect on worker		
	а.	Yes		
	ъ.	No		[70]
21.		your plant initiated or aided f		nunity efforts to
	a.	Yes	•	
	ъ.			[71]
22.	Do des	you have a formal safety trainin cribing how the safety training	g program, i.	e., written procedures
	a.	Yes		
		· [72]		·

23.		supervisors receive training in overseeing the safety of their k group?	
	a.	Yes [73]	
	b.;		
24.		ch of the following techniques of safety training do you emplorcle as many as apply)	y?
	a.	Lecture [74-75]	
	ъ.	Demonstration [76-77]	
•	c.	Group discussions [78-79]	
٠	d.	Literature/Manuals [80-9]	
	e.	Movies/slides [10-11]	
	f.	Instruction by supervisors [12-13]	
	g.	Instruction by fellow workers [14-15]	
	h.	Instruction by safety personnel [16-17]	
	i.	Other (specify)	[18-19]

Code #

25. Which of those techniques circled in question 24 do you consider most effective? Place a "1" after the most effective, a "2" after the second most effective, and a "3" after the third most effective.

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que bef saf	stion ore t ety t	training may be offered to employees one or more times. In 26, the term <u>initial</u> safety training refers to training offered the worker begins a job or work task. In question 27, <u>continuing</u> training refers to training given to workers who have been performing a job for some time.
26.		whom is <u>initial</u> safety training made available? (circle as many apply)
	a.	To all new employees [20]
	b.	To all new production employees [21]
	c.	To new employees in particularly dangerous jobs [22]
	d.	To production employees reassigned to new jobs [23]
	е.	To production employees using new machinery or whose work procedures have changed [24]
i.	f.	Other (specify) [25]
27.		receives <u>continuing</u> safety training in your plant? (circle pany as apply)
	а.	All employees [26]
	ъ.	Employees in jobs where accidents can occur [27]
	ċ.	Employees in high accident risk jobs [28]
	d.	Employees in jobs where accidents have occurred recently [29]
	e.	Employees who have had accidents or near accidents recently [30]
	f.	No continuing training is offered [31]
28.	Are	specific safety training procedures tailored for specific jobs?

[32]

Yes

No

ъ.

					•				
29.		your training propilable from: (ci				inform	ation o	n safety	
refores	a	National Safety	Council?	•	[33	-34]			-
•	ъ.	Local Safety Cour	ncil?		[35-36]		į l		
J	c.	Professional asse	ociations	?	[37	-38]	'		
	d.	Trade association	ns?	_ [3	39-40]		*		
	e.	Unions?	[41-42]					•	
	f.	Insurance carrie	r?	[43-4	4]				
*. *.	g.	Governmental Agend	ey?	[45-	46]				
		Other (specify)					-		[47-48]
30.		ce a check (🗸) af feel are particu							
31.	exi	design plans for sting installation ore construction :	ns subjec	t to th					
	a.	Always				. 17 .			
	ъ.	Often			5.50				
	c.	Occasionally		[49]	*****	, , , , , ,	gi e e		*a
	d.	Never		·	٠	.*			
32.		safety personnel lore they are put			new or	modifie	d work j	processes	
	a.	Always			, - i				
me "	ъ.	Often		[50]		<u>.</u>			
	c.	Occasionally		[50]				,	
	d.	Never		•		·	·	• •	
33.		safety features :	included	in the	specifi	cations	for nev	v equipmer	ıt
	а.	Always							,
	ъ.	Often		[51]			14.1		
	c.	Occasionally		s.	•		·		
	d.	Never		-86 -		^ ·			

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٠.	L. Red C. Bridge		Cod	e #:	9.3
34.	Do safety personnel it is used ?	have to approve	newlý instal	led equipmen	t.before
	a. Always	· .	er e	٠.	•
	b. Often	[52]			
	c. Occasionally	(5-)			
•	d. Never	·			
35.	Do safety personnel being followed?	ever inspect to	insure that	safe practic	es are
٠.	a. Yes			[53]	ĭ
36.	b. No (If no, omit How often are most a	V .	7, and 38) ···		
	a. Everyday				,
	b. At least once a	week			s.
	c. At least once a	month]	54]	
	d. At least every	three months	,		
^	e. At least every	six months		·	,
,	f. At least once a			erica (CN) in a second	· 7
v	g. Less than once a	a year	, N		
37.	Do these inspections	s make use of a v	vritten check		
	a. Always				

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[55]

Often

Never market

Occasionally

b.

c.

		Code #	
38.	Who	makes safety inspections? (circle as many as apply)	
	a.	Plant Management [56]	
	b.	Safety Personnel [57]	
	c .	Medical Personnel [58]	
	d.	Supervisors [59]	
	e	Union Representatives [60]	
	f.	Workers [61]	
	g.	Other (specify)	62]
**39		t is the approximate percentage of the total operational budget your plant that is specifically ear-marked for safety? (circle only)	
	a.	No money specifically ear-marked for safety	
	ъ.	Less than one percent	
	c .·	Between one and three percent [63]	
	d.	More than three percent but less than five percent	
	e.	Between five percent and ten percent	
	f.	More than ten percent	
40.	Are	any personal protective devices used by workers in your plant?	
	a.	Yes	,
	b.	No (if no, omit questions 41,42,43,44, and 45) [64]	

Code #	

41. Please circle each of the following devices used by personnel in your plant. In the second and third columns for those devices that are circled give the <u>percentage</u> of the device's initial and replacement cost paid for by the worker. (100% means worker pays entire cost; 0% means plant pays entire cost)

	DEVICE		<pre>% OF INITIAL COST (Paid by worker)</pre>	<pre>% OF REPLACEMENT COST</pre>
[78]	a.	Safety shoes [65]	[19-21]	[58-60]
[79]	ъ.	Boots [66]	[22-24]	[61-63]
[80]	c.	Hard hats [67]	[25-27]	[64-66]
[9]	d.	Gloves [68]	[28-30]	[67-69]
[10]	e.	Leggings [69]	[31-33]	[70-72]
[11]	f.	Face protectors [70]	[34-36]	[73-75]
[12]	g.	Eye protectors [71]	[37-39]	[76-78]
[13]	h.	Protective creams [72]	[40-42]	[79-9]
[14]	i.	Ear protectors [73]	[43-45]	[10-12]
[15]	j.	Aprons [74]	[46-48]	[13-15]
[16]	k.	Respirators [75]	[49-51]	[16-18]
[17]	1.	Protective suits [76]	[52-54]	[19-21]
[18]	m.	Other (specify) [77]	[55 - 57]	[22-24]

^{42.} Place an asterisk (*) in front of those devices circled in question 41 which are <u>required</u> to be used by <u>all</u> production workers in your plant. Place a check (*) in front of those circled devices which are <u>required</u> to be used by <u>only some</u> production workers. (Those circled devices with no asterisks or checks are used on strictly a voluntary basis)

	€		Code #		
43.		disciplinary actions are taken against			
	requi	Ired protective devices? (circle as man Verbal reprimand [25-26]	y as apply)		
	ъ.	Written reprimand [27-28]			
	с.	Fines [29-30]			
3 4	d.	"Demerits" which can be applied toward	dismissal [31-32]		
	e.	"Demerits" which will hinder raises	[33-34]		
	f.	"Demerits" leading to denial of rewards	[35-36]		
	g.	Reassignment to a less desirable job	[37-38]		
, .	h.	Other (specify)	•		
,	i. ,	None [41-42]	·		
44.	Which of those disciplinary actions circled in question 43 have you found most effective? Place a "1" after the most effective, a "2" after the second most effective, and a "3" after the third most effective.				
45.		eneral, is the condition of personal proplant checked? (circle only one)	tective devices in		
	а.	No	and the second second		
: .	b.	Occasionally			
	с.	At specified intervals	[43]		
	d.	At worker's request			
	е.	Other (specify)			
		.•			

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HANGER LANDER OF THE RESERVE OF THE

	·				
46.	What disciplinary actions are imposed against workers who had fail to follow safe work practices or who are known risk-take as many as apply)	-			
	a. Verbal reprimand [44-45]	•			
	b. Written reprimand [46-47]	e e			
	c. Transfer to less hazardous job [48-49]				
	d. Fines [50-51]				
	e. Required to participate in special safety training	_ [52-53]			
	f. Suspension [54-55]				
	g. Dismissal [56-57]				
•	h. Other	_ [58-59]			
	i. None [60-61]				
47.	Which of the disciplinary actions circled in question 46 have you found most effective? Place a "1" after the most effective, a "2" after the second most effective, and a "3" after the third most effective.				
48.	Is there a system established for workers in your plant to resuspected accident hazards?	eport			
;	a. Yes				
,	b. No (If no, omit question 49)	r			
49.	In general, how does the worker report accident hazards? (cir	rcle only one)			
	a. In writing				
	b. By informing one's supervisor				
	[63]				
	c. By telling maintenance personnel	•			
	d. By telling safety personnel				
	e. Other (specify)				
50.	Other than required forms, <u>e.g.</u> , OSHA, Insurance Carriers, Stetc., does your plant use an additional accident recording for				
	a. Yes (If more than one additional form is used, questions refer to the one used most frequently) [64]	51 and 52			
	b. No (Omit questions 51 and 52)				

Code # _____

51.	This accident recording form	is unique:		
	a. To your industry		· · ·	
	b. To your company	[65]		
v.	c. To your plant			
	d. Other (specify)		-	
52.	This form gathers information	on: (circle as many as apply)		
	a. Major Injuries (those inv treatment) [66]	olving lost time or requiring medical		
	b. Minor Injuries (those <u>not</u> involving lost time or requiring medical treatment) [67]			
•	c. Near accidents [68]		nation of a	
	d. Other (specify)		[69]	
53.	How often are accidents resul	ting in lost time investigated?	· :· .	
	a. Always			
	b. Often			
	c. Occasionally	[70]		
	d. Never			
54.		ting in minor injuries investigated? e or requiring medical treatment)		
	a. Always			
	b. Often [71]			
	c. Occasionally			
	d. Never		·	
55.	How often are narrow escapes	from accidents investigated?		
	a. Always			
	b. Often	·		
	c. Occasionally	[72]		
	d. Never			

Code # _____

56.	soor (Ind	in investigation is made of an accident or a narrow escape, how a after the incident does the investigation usually take place? dicate by placing the letter of the appropriate response before of the following)
	[73]	Lost time accident or accident requiring medical treatment
- 0	[74]	Minor injury (injury <u>not</u> involving lost time or requiring medical treatment)
-	.[.75]	Narrow escape
		A) Within one day of the incident B) Within three days of the incident C) Within one week of the incident D) Within two weeks of the incident E) Within one month of the incident F) Greater than one month after the incident
57.	Who.	investigates accidents or near accidents? (circle as many as apply)
	a.	Medical Personnel [76]
	b.	Safety Personnel [77]
	с.	Management Personnel [78]
	d.	Union officials [79]
	e.	Worker representative(s) [80]
	f. `	Involved employee(s) [9]
	g.	Worker supervisor(s) [10]
	h.	Other (specify) [11]
58.		the results of the investigation publicized within the plant, <u>e.g.</u> , ted in plant newsletters, posted on bulletin boards, etc.?
	a.	Yes
	ъ.	[12] No (if no. omit guestion 59)

Code #

59.	Who sees the results of the investigation? (circle as many as apply)
	a. Upper management [13]
	b. Middle management [14]
	c. Medical Personnel [15]
	d. Safety personnel [16]
	e. Union Officials [17]
	f. Clerical staff [18]
	g. Worker Supervisors [19]
	h. Workers [20]
	i. Other (specify)[21]
60.	Are the accident statistics of your plant used as an index of when to make changes in your safety program?
	a. Yes
+ 14	[22] b. No
61.	Does your plant try to obtain accident experience data on other plants using similar industrial processes?
	a. Yes [23]
	b. No (If no, omit question 62)
62.	
62.	b. No (If no, omit question 62)Do you use this information as an indicator of the effectiveness of

Code # _____

		1	
reques		g asked <u>for statistical purp</u> accident experience. Pleas	
* * 63.		er of production workers (nor [25-29]	n-office personnel)
**64.	What is the average numbe production employees? (c	er of years spent with the plant ircle only one)	lant by your
	a. 1 - 3 years		r
	b. 4 - 6 years		
	c. 7 - 9 years	[30]	
	d. 10 - 12 years	•	
134 1	e. 13 - 15 years	•	
	f. 16 or more years		
65.	What is the average age o	f your production workers?	(circle only one)
w.s.	a. 18 - 22 years		2
<i>:</i>	b. 23 - 27 years	··	
	c. 28 - 32 years		•
	d. 33 - 37 years	[31]	
	e. 38 - 42 years	·5	7
	f. 43 - 47 years		
	g. 48 or more years		

Code # _____

	Code #
66.	That percent of the <u>production workers</u> in your plant are married? circle only one).
	. 0 - 19%
	. 20 - 39% [32]
	. 40 - 59%
	1. 60 - 79%
	80% or more
67.	Thich of the following choices best describes the educational evel of the <u>production</u> <u>workers</u> in your plant? (circle only one)
	. 8th grade or less
	. Some high school or vocational school training [33]
	. High school or vocational school graduates
	. Some college or technical school training
	. Two year college or technical school graduates
	. College graduates
*68.	That is the average number of <u>production workers</u> under the direction of <u>one first-line supervisor</u> ? (circle only one)
	. 1 - 5 workers
	. 6 - 10 workers
	. 11 - 15 workers
	. 16 - 20 workers [34]
	. 21 - 25 workers
	. 26 - 30 workers
	. 31 - 35 workers

h. 36 - 40 workers

i. 41 or more workers

**69. Please enclose with this questionnaire a copy of your completed OSHA Form 103 for 1973. Also, should you have recorded before 1971 your accident frequency rate in terms of number of disabling injuries for all employees per million-man hours of work in your plant, please indicate such rates for the following years:

1970	 [35-38]
1969	[39-42]

Code	#		

70. If there are any answers to questions you would like to explain further or any particularly innovative ideas you would care to elaborate on, please use this page to do so.

-98-

		Code #
•	Ple	ase indicate the position an/or title of the person who tributed most to the filling out of this questionnaire.
•		ase indicate by circling "yes" below if you would be receptive a site-visit as described in the cover letter of this questionnair
	а.	Yes (If yes, in the spaces below give the name and business number of the person who should be contracted when arranging the visit.)
	ъ.	No

)

APPENDIX B

COLLATED RESPONSES TO QUESTIONNAIRE ITEMS

Preceding page blank

• ` • . .

QUESTION No. ____

Hi (2) 9 33 22 15 5 1 9		1
OVERALL LO(1) 9 33 14 6 2 0 7		
*Significant High vs. Low Accident Company response difference (p*based on CHI SQUARE analysis of individual response choices (7).	(.05)	.° <u></u>

FOOD & KINDRED PRODUCTS

	<u>a</u>	<u>b</u>	. <u>C</u>	<u>d</u>	<u>e</u>	f	g	<u>h</u>	<u>i</u>
Hi (2)	0	2	3	3	/	0	0		
Lo (1)	/	3	1	2	0	0	2		

WOOD PRODUCTS

	а	b	С	d	е	f	g	h	i
Hi (2)	Z	6	2	2	0	0	/_		
Lo (I)	2	7	1	0	0	٥	2		

PAPER PRODUCTS

	а	b	С	d	е	f	g	h	i
Hi (2)	0	6	6	5	0	/	2		
Lo (1)	1	4	5	/	2	0	/		

PRIMARY METALS

	а	b	С	d	е	f	g	h	i
Hi (2)	2	4	3	سی	D	D	0		
Lo (1)	1	2	2	سی	1	0	/		

FABRICATED METALS

	а	b	С	d_	е	f	g	h	j
Hi (2)	0	6	حی	1	/	D	3		
Lo(I)	1	6	2	3	/	0	0		

	a	b	С	d	е	f	g	h	i
Hi (2)	4	9	سی	4.	0	0	\$		
Lo (1)	4	10	3	0	/	0	/		

QUESTION No. 2 .

			Α	B	C	$\overline{\Box}$	I F	F	G	L1	
		(2)		}		3.0	<u> </u>	4	i	-1	
0 1/50	<u> </u>	(2)	38	28	18	33	8	7	/		
OVERALL	Lo	(1)	40	33	19	31	سی	7	/		
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				h				t		<u> </u>	: 1
FOOD &	Hi	(2)	4	<u>b</u>	0	3	e	f	9	h_	
KINDRED	Lo	(1)	3	4	1	Z	0	2	0		
PRODUCTS			ļ			~					
							· 		, -		
			а	b	С	d	е	f	g	h	i
WOOD	Hi	(2)	6	2	سی	5	0	0	0		
PRODUCTS	Lo	()	7	ح ک	5	6	0	2	/		
			а	b	С	d	e	f	g	h	<u> </u>
PAPER	Hi	(2)	0	4	4	5	2	/	0		
PRODUCTS	Lo	(1)	0	6	4	6	/	/	0		
			-								
				b		d		f	П	h	
DOMARY	Hi	(2)	a 4	4	<u>С</u>	سى	e Z	2	90	11-	
PRIMARY METALS	Lo	(1)		5-	3	7		~	0		
			Ľ	اا							
				·						 	
			а	b	<u> </u>	d	e	_f	g	<u>h</u>	
FABRICATED METALS	Hi		0	5	4	7		D	0		
•	Lo	(1)	0	5	2	6	2		0		
		ļ	а	b	С	d	е	f	g	h	i
MACHINERY	Hi	(2)	10	10	2	8	3	0	ブ		
MANUFACT.		(1)	//	8	4	8	7	0	0		

•		Yes	No	Other
OVERALI	Hi (2)	30	10	2 (no response)
	Lo (1)	3/	10	1 (no response)

FOOD & KINDRED PRODUCTS

· ·	Yes	No	Other
Hi (2)	3	0	/
Lo (I)	4	D	0

WOOD PRODUCTS

	Yes	No	Other
Hi (2)	3	4	/
Lo (I)	4	3	1

PAPER PRODUCTS

	Yes	No	Other
Hi (2)	6	1	0
Lo (1)	6	/	0

PRIMARY METALS

	Yes	No	Other
Hi(2)	4	/	0
Lo (I)	4	/	0

FABRICATED METALS

	Yes	No	Other
Hi (2)	5	2	0
Lo (1)	7	0	0

	Yes	No	Other
Hi (2)	9	2_	0
Lo(1)	6	5	0

QUESTION No. 4.

											
			Δ	В	С	D	E	F	G	<u>H</u>	
	Hi ((2)	سی	19	13	2	0	4			
OVERALL	Lo	11)		 	<u> </u>	سی		Z		<u> </u>	
		. ,	7	15	13	3	0	2			
	•		а	b	С	d	е	f	g	h	
FOOD &	Hi (2)	Z	12	0	0	0	0	9	<u> '</u>	
KINDRED PRODUCTS	Lo	(1)	0	7	Z	/	0	0		·	
Modocia						·					لــــا
								····			
	-		а	b	С	d	е	f	g	h	
wood	Hi (2)	/	3	2	/	0	/			
PRODUCTS	Lo	(1)	بح	3	2	0	0	0			
						, ,		 _	<u> </u>		 -
	<u> </u>		0	b	С	<u>a</u>	e	f	<u>g</u> _	h	
PAPER PRODUCTS		2)	0	4	2	0	0				
11/000013	Lo (/		2	2	0				
	•		а	b	С	d	e.	f	g	h	
PRIMARY	Hi (2)	0	3	Z	0	0	\mathcal{O}	<u> </u>	.,	
METALS	Lo (0	2	Z	0	0	/			
										!	
			а	р	С	d	е	f	g	h	i
FABRICATED METALS	Hi (_/	2	3	0	0	/			
MICTALS.	Lo (1)	2	4	/	0	0	0			
•		f		<u> </u>		- بہ		t l		<u></u>	-; - 1
	11: /	2)	a	b	<u>C</u>	d	e	- f	g	<u>h</u>	
MACHINERY MANUFACT.	Hi (رحی	3	1	0	<u>/</u>			
- · ·	Lo (1)		4	4	z	0	0			

QUESTION No. 6 .

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	h

QUESTION No. _____.

		A	В	C	D	E	F	G	<u> </u>	
	Hi (2)	19	13	8	2					
OVERALL	Lo (1)	17	11	10	4					
		0	b	С	d	j e	f	g	h	i
FOOD & KINDRED	Hi (2)	3	2	0	0		<u> </u>			
PRODUCTS	Lo (1)	1 5	0	0	<u> </u>	l	<u>.</u>	L	<u></u>	
		а	l b	l c	d	е	f	g	l h	
WOOD.	Hi (2)	1	/	5	1					
PRODUCTS	Lo (1)	4	3	/	0					
				·	,				,	
	(1): (2)	a	b	C	d	e	f	g	h	<u>i</u>
PAPER PRODUCTS	Hi (2)	6	2	0	0			<u> </u>		
	<u> </u>	1 (å	3	1	3	<u> </u>	.	
		a	b	С	d	е	f	g	h	i
PRIMARY	Hi (2)	2	3	0	0					
METALS	Lo (I)		2		0					
			} - 1		Y			1 ~		
FABRICATED	Hi (2)	4	D 2	C	d	e_	f	<u>g</u>	h	
METALS	Lo (1)	2	2	3	0	 				
		:	-							
		a	b	С	d	е	f	g	h	i
MACHINERY MANUFACT.	Hi (2)	4	4	2	/					
mator not,	Lo(I)	3	2	5	/					

			JA	ÍΒ	<u>C</u>	I D	ΙE	J.F.	G	<u> </u>	
·	Hi	(2)	7	26	4	4					
OVERALL	Lo	(1)	9	22	0	9					
			·			_					
			а	b	С	d	е	j	g	l h	i
FOOD & KINDRED	Hi	$\frac{(2)}{(1)}$	2	12	0	0					
PRODUCTS	Lo	(1)	2	2	0	0	<u></u>	l	L		L
			а	l b	С	d	Ге	f	g	h	<u> </u>
WOOD	Hi	(2)	2	4	0	1		1	7		
PRODUCTS	-	(1)	3	3	0	1					
,		*									
			а	b	С	d	е	f	g	h	i
PAPER	Hi	(2)	2	4	/_	O					
PRODUCTS	Lo	(1)	/	4	U	2_				<u></u>	
	,		{ 	-	·		, ,				ا
, and the second	Hi	(2)	0	<u>b</u>	<u>C</u>	d	<u>e</u>	f	<u>g</u>	h	
PRIMARY METALS	Lo	(1)	1	3	0	0				-	
	·			!					i		LJ
			а	b	С	d	е	f	g	'n	
FABRICATED	Hi	(2)	0	3	2	2					
METALS	Lo	(1)	0	4	0	3					
			а	b	С	d	е	f	g	h	i
MACHINERY MANUFACT.	Hi			8							
	Lo	(1)	2	6	0	2					

		ΓΑ	IR		11)	F] [-	G	1-1	
	Hi (2)	} -				<u> -=</u> -			<u>-'-</u> '	
OVERALL		8	/2	9		0				
OVENALL	Lo (1)	4	14	17	3	5				
		a	b	С	d	е	f	g	h	i
FOOD & KINDRED	Hi (2)	/	/	/	0	0				
PRODUCTS	Lo (1)	/	0		/	/				
		а	b	С	d	е	f	g	h	i
WOOD	Hi (2)	3	0	3	0	0				
PRODUCTS	Lo (1)	1	12	/	0	2				
		a	b	С	d	е	f	g	h	i
PAPER	Hi (2)	0	2_	3	/	0				
PRODUCTS	Lo (1)	0	2	1	2	0				
		а	b	С	d	е	f	g	h	i
PRIMARY	Hi (2)	/	. حي	U	0	U				
METALS	Lo(I)	0	3	/	0	0				
										,
	,	а	Ь	С	d	e	ţ	g	h	
FABRICATED METALS	Hi (2)	/	2	0	0	0				
MEIALS	Lo(1)	/	2	2	٥	٥	-			
	-									
		a	b	С	d	е	f	g	h	i
MACHINERY	Hi (2)	2	4	۷	0	0				
MANUFACT.	Lo (i)	/	5	/	0	2				

OVERALL

:	Yes	No	Other
Hi (2)	28	14	0
Lo (1)	23	19	0

FOOD & KINDRED PRODUCTS

	Yes	No	Other
Hi (2)	3	1	0
Lo (I)	4	0	0

WOOD PRODUCTS

	Yes	No	Other
Hi (2)	4	4	D
Lo (1)	X	4	0

PAPER PRODUCTS

	Yes	Nο	Other
Hi (2)	5	2	0
Lo (I)	J	4	D

PRIMARY METALS

	Yes	No	Other
Hi (2)	4	/	0
Lo (1)	4		0

FABRICATED METALS

	Yes	No -	Other
Hi (2)	6	/	0
Lo (1)	3	4	٥

		Yes	No	Other
	Hi (2)	6	5	o
ļ	Lo(1)	5	6	0

QUESTION No. // .

		(0)	Α	В	C	(<u>D</u>	E	F	G	1 -	
OVERALL		(2)	23	36	14	38 38	5				
			-	1)							··
FOOD & KINDRED PRODUCTS	Hi	(2) (1)	2	D 4 4	0	4	e 000	<u> </u>	g	<u>h</u>	
	<u> </u>		·}			· · · · · ·			·		
WOOD PRODUCTS	Hi Lo	(2)	1 3	b 8	C /	6	e 0 0	<u></u>	g	<u>h</u>	<u> </u>
		. ,	·		· · ·						
PAPER PRODUCTS	Hi Lo	(2)	<u>ا</u> ک	b 6	ر ار جن	7	e /		9	<u>h</u>	
				<u> </u>						· · · · · ·	
PRIMARY METALS	Hi Lo	(2)	۵ گ	5 5	C 44	<u>5</u>	e 2	-f	g	<u>h</u>	
1 · ·	·			·		······································	i		·		
FABRICATED METALS	Hi	(2) (1)	3 3	5	C 3 4	<u>ط</u> سی	e /	f	g	<u>h</u>	
•						<u> </u>					
MACHINERY MANUFACT.	Hi Lo	(2) (1)	a 8 4	b 8 9	C 5	d 9	e // 0	f	g	<u>h</u>	1

QUESTION No. 12.

	 _		A	В	C	D	E	<u> </u>	G	11	
	Hi	(2)	27	12	8	6	9	سی			
OVERALL	Lo	(1)	29	19	12	10	16	3			
•	L		1~/		1, 2	1,0	1,0	10_	<u> </u>	<u> </u>	L
•			a	b	С	ld	е	1	g	h	i
FOOD & KINDRED	Hi	(2)	1	3	2	0	/	0	<u> </u>	ļ	
PRODUCTS	Lo	()	14		2	2	2	1/		<u> </u>	
			a	b	С	d	е	f	g	h	i
WOOD	Hi	(2)	6	0	0	0	0	0			
PRODUCTS	Lo	(1)	6	6	3	2	4	0			
		•	а	b	С	d	e	f	g	l h	i i
PAPER	Hi	(2)	3	4	4	5	5	2_			
PRODUCTS	Lo	(1)	5	4	4	2	<i>Y</i> .	1			
								,			
		•		b	<u> </u>	d		l f	g	h	<u> </u>
PRIMARY	Hi	(2)	<u>a</u> سی	1	<u>C</u> /	0	<u>e</u> /	U	9		1
METALS	Lo	(1)	3	3	1	1	3	0			
	L		J			<u> </u>		1			لــــا
				 -						 -	 -
FABRICATED	<u> </u>	(2)	a	<u>b</u>	C	d	e	f	g	h	
METALS	Hi	(1)	سی ا	0	0	0	0	2			
	L.0	111	4	3	0	0	0	/			
•			а	b	С	d	е	f	g	h	i
MACHINERY MANUFACT.		(2)	7	4	/	/	2	/			
maitor ao F,	Lo	(1)	7	2	2	3	3	O]	

QUESTION No. 13 **OVERALL** G 1-1 RANK | 1 2 3 1 1 2 3 1 1 2 3 1 1 2 3 1 1 2 3 1 1 2 3 1 1 2 3 1 1 2 3 Hi (2) 12 1 2 3 4 0 3 3 2 1 3 1 2 2 2 1 Lo(1) 18 12 3444241412842 FOOD & KINDRED PRODUCTS ď h b C е a 1 2 3 RANK | | 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 Hi (2) 1002100110000100 Lo (1) 0/000000/1000/1/ WOOD PRODUCTS a b С d 9 'n RANK: 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 3/1/2/3 Hi (2) / 000000000000000000 Lo (1) 3 0 2 0 2 3 2 1 0 0 1 0 1 2 0 0 PAPER PRODUCTS b C , e. · 0 RANK 1 2 3 1 2 3 1 2 3 1 2 5 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 Hi (2) / 0 / 0 / 0 2 / 1 / 2 / / 0 / 0 Lo (1)300/0// 0200 400 PRIMARY METALS b С d h е \mathbf{a} aRANK | | 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | HI (2) 2010000100001000 Lo (1) 2 001 00 1000010 00 FABRICATED METALS b h al C d е q RANK | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 2/3 Hi (2) 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 10(1)400010000000000 MACHINERY MANUFACTURING b l d е 0 C q h RANK | 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 2 3 Hi (2) 4/10/12/01/00/01/00/ 11 Lo (1) 60 03 0030

QUESTION No. 14 .

			A	B	IC	ID		F	IG	11	II
	Hi	(2)	138	26	13	سی	5	2_			
OVERALL	}	(1)	- i		<u> </u>	<u> </u>	`i	<u> </u>	<u> </u>		
		(1)	37	29	15	10	7	2	<u> </u>	<u></u>	<u> </u>
			l a	ТБ	С	Id	е	<u> </u>	g	i h	
FOOD &	Hi	(2)	14	4	12	i /	2	17			
KINDRED PRODUCTS	Lo	-	13	1	1	2	D	1			
			-J		·		·	<u> </u>		·	۱
,						 			1 ~	1 .	 1
•		(0)	10	<u>b</u>	<u>C</u>	d	<u>e</u>	f	<u> g</u>	<u>l</u> h	
WOOD PRODUCTS	Hi	(2)	6	3	/	0	10	0	<u> </u>	 	
PRODUCIS	Lo	(1)	17	7	/	3				<u> </u>	
			a	Ь	С	d	е	f	g	h	Ti l
PAPER	Hi	(2)	17	6	4	3	1	1		1	
PRODUCTS	Lo	()	7	6	4	2	14	0	<u> </u>		
								·		1	· • • • • • • • • • • • • • • • • • • •
				1			·	<u> </u>	((·····	اا
,	. [] .	(0)	a	b	<u>C</u> _	q	<u>e</u>	f	<u>g</u>	h	
PRIMARY METALS	Hi	(2)	4	3	2	0	0	0	}		
MILIALS	LO	(1)	5	4	2	/	/	D			لـــا
			a	b	С	d	е	f	g	h	i 1
FABRICATED	1-1 i	(2)	7	3	/	0	0	0		'-'- -	
METALS	Lo	(1)	5	5	٤	0	0	0			
				·				· · · · · · · · · · · · · · · · · · ·		·	
				la T		ا ر		<u></u>		 1	1
MACHINEDY	<u> </u>	701	a	<u>b</u>	C	d	е	<u>f</u>	g	h	
MACHINERY MANUFACT.		(2)	10	7	3	/	2	0			
- · ·	Lo	(1)	101	6	5	2	/	0			1

OVERALL B Д RANK | 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 Hi (2) 19 6 4 4 13 4 2 2 4 2 3 0 1 2 2 1 0 1 LO(1) 1910311258525231122200 FOOD & KINDRED PRODUCTS d b C RANK 123112311231123112311231 1 2 3 1 2 3 Hi (2)|2 / 02110001010 10 (1) 0 2 0 0 0 1 0 1 0 2 0 0 0 0 0 100 WOOD PRODUCTS : h b C d G \Box RANKI 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 Hi (2) 4 00 03000100000000000 1L0 (1) 3 2 0 0 2 10011 0200 0100 PAPER PRODUCTS b d е CL C MANICI 8 3 118 3 118 3 118 3 118 3 118 3 1 1 2 5 1 1 2 5 1 1 2 3 Hi (2) 2 3 /12 // 10021200011 00 Lo(1)30301 1220 10 Ż. 0 PRIMARÝ METALS h b C d RANK | 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 Hi (2) 20/020/1000000000000 Lo (1) 3 2 0 0 2 12000010000 FABRICATED METALS h 1 · b d O٠ C Э CI H1 (2) 40003000000000000 Lo (1) 5000000110000000000 MACHINERY MANUFACTURING d † $\mathbf{0}$ b 6 g C. h Hi (2) 5 2 122201110002000 Lo (1) 5 40 3/ 3. 000

OVERALL

	Yes	No	Other
Hi (2)	4	38	0
Lo (1)	10	42	0

FOOD & KINDRED PRODUCTS

	Yes	No	Other
Hi (2)	0	4	0
Lo (1)	0	4	0

WOOD PRODUCTS

	Yes	No	Other
Hi (2)	Ō	8	0
Lo (1)	0	B	0

PAPER PRODUCTS

	Yes	No	Other
Hi (2)	2	5	0
Lo (I)	3	4	0

PRIMARY .

	Yes	No	Other
Hi (2)	0	5	0
Lo (1)	2	3	O

FABRICATED METALS

	Yes	No	Other
Hi (2)	0	7	0
Lo (1)	3	4	0

	Yes	No	Other
Hi (2)	2	9	6
Lo (1)	2	9	0

Other

en e		Yes	No	Other	
OVERALL	Hi (2)	3	0	1 (no vespon	ربو
	Lo (1)	6	2	3 (no vespon	رعه

		Yes	Νo	
FOOD 8 KINDRED	Hi.(2)	0	0	
PRODUCTS	Lo (I)	0	0	

	the second secon	Yes	No	Other
WOOD	Hi (2)	0	0	0
PRODUCTS	Lo (1)	0	/	O

e e e e e e e e e e e e e e e e e e e		Yes	No	Other
PAPER	Hi (2)	/	0	1
PRODUCTS	Lo (1)	٥	/	2

en e	*	Yes	No	Other
PRIMARY	Hi,(2)	D	0	0
METALS	Lo (1)	1	0	1

		Yes	No	Other
. FABRICATED METALS	Hi (2)	ð	0	0
METAES	Lo(I)	3	0	0

A	***	Yes	No	Other
MACHINERY	Hi (2)	2	0	0
MANUFACT.	Lo (1)	2	O	0

QUESTION No. 18 .

		Yes	No	Other
OVERALL	Hi (2)	14	38	0
OVERALL	Lo (1)	5	37	0

FOOD & KINDRED PRODUCTS

	Yes	No	Other
Hi (2)	1	3	0
Lo (1)	0	4	0

WOOD PRODUCTS

	Yes	No	Other
Hi (2)	0	8	0
Lo (1)	0	8	0

PAPER PRODUCTS

	Yes	No	Other
Hi (2)	2	5	0
Lo (1)	3	4	0

PRIMARY METALS

	Yes	No	Other
Hi (2)	0	سی	0.33
Lo (1)	0	5	0

FABRICATED METALS

·	Yes	No	Other
Hi (2)	0	7	0
Lo (1)	7	6	0

	Yes	No	Other
Hi (2)	/	10	0
Lo (1)	1	10	0

QUESTION No. 19_.

	- ·- · · · · · · · · · · · · · · · · ·	Yes	No	Other	
OVERALL	Hi (2)	3	1.	1 (tro early	:>
	Lo (1)	1	2_	3 (to early)

	,
FOOD	8
KINDRI	ΞĎ…
PRODU	cts

	Yes	No	Other
Hi (2)	/	O'	0
Lo-(1)	/	0	0

	-		
WOOD)		٠.
PROD	UC	Ť:	S

	Yes	No	Other
Hi (2)	0	0	0
Lo (1)	0	0	1

PAPER PRODUCTS

	Yes	No	Other
Hi (2)	2	0	O.
Lo (1)	0	/	2

PRIMARY METALS

7 1	Yes	No	Other
Hi (2)	0	0	0
Lo (1)	0	0	0

FABRICATED METALS

(3.1)	Yes	No	Other
Hi (2)	0	U	0
Lo (1)	:/	0	0

	Yes	No	Other
Hi (2)	0	. /	10000
Lo (1)	Ð	1	0

**************************************		Yes	No	Other
OVERALI	Hi (2)	40	2	0
	Lo (1)	41	1.	0

FOOD & KINDRED PRODUCTS

,	Yes	No	Other
Hi (2)	4	0	0
Lo(I)	4	0	0

WOOD PRODUCTS

, , , , , , , , , , , , , , , , , , ,	Yes	No	Other
Hi (2)	7	1	0.
Lo (1)	8	0	0

PAPER PRODUCTS

	Yes	No	Other
Hi (2)	7	0	0
Lo (I)	6	1	6

PRIMARY METALS

	Yes	No	Other
Hi (2)	5	0	0
Lo (1):	5	0	0

FABRICATED METALS

	: Yes	No	Other
Hi (2)	フ	0	0
Lo (1):	7	0	0

	Yes	No	Other
Hi (2)	10		0
Lo (1)	11	0	0

QUESTION No. 21.

OVERALL

	Yes	No	Other
Hi (2)	16	26	0
Lo'(1)	21	2/	0

FOOD & KINDRED PRODUCTS

,	Yes	No	Other
Hi (2)	3	./	0
Lo (I)	3	./	0

WOOD PRODUCTS

	Yes	No	Other
Hi (2)	3	5	0
Lo (1)	4	4	0

PAPER PRODUCTS

	Yes	No	Other
Hi (2)	2	5	0
Lo (I)	سی	2	0

PRIMARY METALS

	Yes	No	Other
Hi (2)	1	4	0
Lo (1)	3	2	0

FABRICATED METALS

14	Yes	No	Other
Hį, (2)	2	مبی	0
Lo (1)	.2	5	0

	·Yes	No	Other
Hi (2)	-5	6	0
Lo (1)	4	7	0

QUESTION No. 22 .

OVE	RALL

	Yes	No	•Other
Hi (2)	13	29	0
Lo.(1)	18	24	0

FOOD & KINDRED PRODUCTS

	Yes	No	Other
Hi (2)	2	2	0
Lo (1)	2	2_	0

WOOD PRODUCTS

	Yes	No	Other
Hi (2)	0	8	0
Lo (I).	2	6 .	0

PAPER PRODUCTS

	Yes	No	Other
Hi (2)	4	3	0
Lo (1).	4	3	C

PRIMARY METALS

	Yes	No	Other
Hi (2)	. /-	:4	0 .445 %
Lo (1)	2	5	O

FABRICATED METALS

- :	Y.e.s	No	Other
Hi (2)	4	3	0
Lo (1).	3	4	0

	Yes	No	Other
Hi (2)	3	8	0
Lo (1)	4	7	0

QUESTION No. 23*

OVERALL

			Other -
Hi (2)	34	5	3 (no response)
Lo (1)	3.0	12	0

*Significant differences between responses of High vs. Low Accident Company responses based on CHI SQUARE analysis (p<.05) (7).

FOOD & KINDRED PRODUCTS

	Yes	Νo	Other
Hi (2)	3	0	/
Lo (I)	4	U	0

WOOD PRODUCTS

	Yes	No '	Other
Hi (2)	7	1	0
Lo (1)	6	2	0

PAPER PRODUCTS

	Yes	Νo	Other
Hi (2)	2	0	0
Lo (I)	ح	2	0

PRIMARY METALS

	Yes	No	Other
Hi(2)	5	0	0
Lo (1)	2	7	0

FABRICATED METALS

	Yes	No	Other
Hi (2)	5	2	0
Lo (1)	5	2	0

	Yes	No	Other
Hi (2)	7	2	2
Lo(1)	8	3	0

QUESTION No. 24 .

		A	В	C	D	E	F	G	-	
	Hi (2)	17	20	26	20	15	32	14	23.	2
OVERALL	Lo (1)	20	16	32	25	19	35	16	29	سی
						·——		1	<u>. </u>	
		a	ĺЪ	С	l d	i e		g	l h	i
FOOD &	Hi (2)	2	3	3	3	3	J	1	3	0
KINDRED PRODUCTS	Lo (1)	3	3	4	2	4	2_	/	4	0
		а	b	С	d	е	f	g	h	i
wood	Hi (2)	3	5	5	2	2	7	4	3	0
PRODUCTS	Lo (1)	5	3	8	5	5	7	2	5	/
										:
		а	b	С	Cļ	е	í	g	h	i
PAPER	Hi (2)	5-	3	4	1	7	7	3	4	/
PRODUCTS	Lo (1)	5	4	6	3	5	سی	3	4	2
		a	b	С	d	е	{	g	h	i
PRIMARY	Hi (2)	1	4	ح	5	2	4	2	7	0
METALS	Lo (1)		3	3	4	2	5	7	4	0
,			•							
		а	b	С	d	е	f	g	h	i
FABRICATED METALS	Hi (2)	3	/	6	_2	٤.	3		2	0
	Lo (1)	3		6	6	/	2	/	3	0
								·	,	
		а	b	С	d	e	f	g	h	i
MACHINERY MANUFACT.	Hi (2)	3	4	3	4	/	8	2	g	4
	Lo (1)	3	2	5	5	2	91	6	9	2

				•		(الد) [_ \	וכ	17	Лľ.	V	۱,	٧·U	•	-	معر	<u></u>				•				
OVERA	<u>LL</u>		_									_	·													<u> </u>	~-1
	<u> </u>	Δ_			\underline{B}		_	<u>C</u>		_	D			E		<u>.</u>	F,		ς.	<u>G</u>			1-1				_
RANK	1	2	3	1	2	3	1	2	3	1	2	3	1	2.			2	<u>3</u>	1.		<u>3</u> .	1	2.	3	<u> </u>	2	
Hi (2)	/	2	/	3	7	2	7	2	7	0	/	4	3	/	5	19	5	2	1	سي	5	3	۶	4	0	00	2
Lo(1)	1	١,	5	4	4	3	7	4	-2	2	O	3	4	3	4	/2	حر/	/	2	6	4	5	6	6	2	0 0	2
FOOD & KINDRED PRODUCTS																											
		a			b			С			d			е			f			g			h			i	
RANK		2	3		2	3	I	2	3	I	2	3		2	3	1	2	3	I	3	3			3		2	3
Hi (2)	0	0	0	0	0	0	0	U	1	0	0	0	/	/	0	2	0	/	0	0	/	0	2	0	0	0	2
Lo (I)	0	0	1	0	/	0	0	0	2	0	0	0	2	/	0	/	0	0	0	/	0	/	/	/	Ð.	0.	
WOOD	derivative de la colonia de l																										
		a.		:	b			С			d			е			f			g			ħ	-		i	7
RANK		2	3	Ί	2	3		2	3	I	2	3		2	3		2	3		2	3	1	2	3	i	2	3
Hi (2)	0	0	0	0	4	0	/	0	2	0	ں	1	1	0	0	4	/	0	1	2	1	0	0	1	0	0	
Lo (1)	1	/	0	2	0		1	1	/	O	0	0	/	/	1	/	3	0	0	0	2	1	0	/	7	0	0
PAPER																											
, ··		a		-	b			С		<u> </u>	d			e			f			q			h			<u></u>	
RANK	.	2	$\frac{1}{3}$	i	2	3	1	2	3	Ι	2	3	П	2.	3	1	2	3	T	2	3	1	?	3	Ţ	2	5
Hi (2)	0	0	0	0	0	0	0	1	U	0	0	1	0	U	3	5-	O	0	0	ح	U	0	1	1	0	0	0
Lo (1)	0	0	/	0	2	2	4	0	/	0	0	0	0	1	1	7	3	0	/	/	/	1	0	2	0	0	0
PRIMAR	?Y	ME		٩L	 S		-								·	·											
1 3.54 2 3.54		a		<u> </u>	b			c			d		_	e			f	. !		g			h			i	
RANK		2	3	1	2	3		2	3	1	2	3	1	2	3	1	2	5			3		2	3.	1	2	3
Hi. (2)	_		_					D		0			1	0	1	7	7	v	0	1	/	1	0			0	
Lo (1)						0		0	0	/	0	0	0	0	1	7	3	/	0	/	0	0	/	Z	0	0	0
FABRIC	ATE	ΞD		ΛE'	TA	LS				!			ــــا			نور ب		· · · · · ·	A 74: West	لحيب			_		:		_
		a			b	-	<u> </u>	С			d			e		<u> </u>	f			ġ			h	n di	17.00	i	
RANK		2	3	1	2	3	1	2	3	Ī	2	3	T	2	5		2	3		2	3		2	3	1	2	3
Hi (2)	17	/	/	7	0	0	3	1	/	0	0	/	0	0	1	2	/	0	0	0	/	0	Z	0	0	0	0
Lo (1)	0	0	2	0	0.	U	0	/	/	/	0	1	0	0	1	4	/	0		/	0	0	2	0	0	0	0
MACHIN	ER	Y .	<u></u> ' МА						٧G				<u>ب</u>			. ·											
		a			b		<u></u>	C		;	d	-		е			f			g	,	5.7	h	`	m vir His	í	7
RANK		2	3	j	2	3	,,Ĭ.,	2	3		2	3		2.	3	1	2	3		2	3	Ī	2	3		2	3
Hi (2)	0	/	0	2	0	2	0	0	٦	0	1	0	0	0	0	5	2	/	0	٤.	/	2	3	1	0	0	
Lo (I)	0	0	/	0	1	0	1	2	0	0	0	2	1	0	0	4	J	0	/	2	/	7	2	2	1	0	2

, and an executive section of the se	•		-	,			**				
	,	А	В	l C	ΙĎ	E		G	. -	1.1	
	Hi (2)	28	20	14	19	12	1				
OVERALL	Lo (1)	30	21	13		23	2			 -	^
, :		130	27	1/3	123	120	12		·]· 		.]
			•	· -					•		
		а	b	С	d	l e		ig	l h	i	1
FOOD & KINDRED	Hi (2)	2	1	1	3	/	0.5				
PRODUCTS	Lo (1)	3	/	17	7	2	0.	<u> </u>	1	<u> -</u>	
·	-					. <u>.</u> .			1	•	
		a	b	l c	d	Te	f	g] h	Ιi	1.
WOOD	Hi (2)	4	5	3	2	حی	0				
PRODUCTS	Lo (I)	5	5	3	6	5	0				
7.¥.141 = 1.			•	-			,	• •			
per Marian		а	b	C	ď	e	f	g	h	1	7
PAPER	Hi (2)	6	4	3	4	4	1	1 9			1
PRODUCTS	Lo (1)	5	2	4	سی	5	/			}	
	<u> </u>		<u> </u>	·	L	L	₹- <u>-</u>	S	•	*	
		r- <u>-</u>	L		22 mJ		. r.		-	· · ·	1
	Hi (2)	a	b.	С	" d	е	f	<u>,g</u>	h_	1	
PRIMARY METALS	Lo (1)	4	3	2	2	3	0	<u> </u>			
to a second			3			3	<u> </u>		<u> </u>	<u> </u>	j
	,		. ,	, _	,						. h.
		а	b	С	d	е	f	g	<u>h</u> "	i	
FABRICATED METALS	Hi (2)	4	ح		4	/:	Ö	· .	, ·		
	Lo (1)	5	5	3	3	4	0			,	
			:						:	ari ari	:
	* 1	а	b	С	d	е.	f	g	h	İ	
MACHINERY	Hi (2)	8	3	4	5	5	0				
MANUFACT.	Lo (1)	フー	اسی	0	4	4	0			1000	

·			·		,			,	, 	
· · · · · · · · · · · · · · · · · · ·		Д	B	<u>C</u>	D	<u>I</u>	<u> </u>	G	-	
	Hi (2)	24	12	11	11	13	6			
OVERALL	Lo*(T)*	30	9	/3	10	8	8			
	<u> </u>	!	 _	l	<u> </u>	ـــــ		L		
									,	
		а	b	С	d	е	1	g	h	<u>i</u>
FOOD 8 KINDRED	Hi (2)	حح	12	2	2	2	0		<u> </u>	
PRODUCTS	Lo (1)	3	1	/	1	1	/			
		•								
	- N	a	b	С	d	le	f	g	h	i i
WOOD	Hi (2)	3	2	_ <u></u>	2	3	2			
PRODUCTS	Lo (1)	6	2	3	2	2	1/			
		·						l	J	
		0	b	C_	d	e	f	g	h	i
PAPER	Hi (2)	4	3	3	7	3	2			
PRODUCTS	Lo (I)	3	3	2	3	/	2			
* i										
	1	а	b	С	d	е	f	g	h	i
PRIMARY	Hi (2)	3	3	5	3	2	0			
METALS	Lo (1)	4	1	7	/	1	2			
. ,										
<i>\$</i>	· · · · · · · · · · · · · · · · · ·	a	Б	С	d	е	f	g	h	
FABRICATED	Hi (2)	6	7	0	0	1	0	_ _		
METALS	Lo (1)	6	/	2	/	1	1			
e i e e e e e e e e e e e e e e e e e e						·	·	اا	L	L
	·*· · · · · · · · · · · · · · · · · · ·		- , -	·				· · · · · ·	· · · · · · · · · · · · · · · · · · ·	
e e e e e e e e e e e e e e e e e e e	<u></u>	a	b i	С	d	е	<u>f</u>	g	h	
MACHINERY MANUFACT.	Hi (2)	5	/	2_	/	2	2			
manor ao r	Lo (I)	8		3	2	2	2			

OVERALL

	Yes	No	Other
Hi (2)	28	9	5 (no response)
Lo (1)		11	0

FOOD & KINDRED PRODUCTS

	Yes	No	Other
Hi (2)	3	0	/
Lo (I)	3	· ,/	0

WOOD PRODUCTS

	Yes	No	Other
Hi (2)	کي	2	/
Lo (1)	5	3	D

PAPER PRODUCTS

	Yes	No	Other
Hi (2)	سی	2	. 0
Lo (1)	5	2	D

PRIMARY METALS

	Yes	No	Other
Hi(2)	سی	U	0
Lo (1)	حس.	0	٥

FABRICATED METALS

	Yes	No	Other
Hi (2)	سی.	/	/
Lo (1)	6	/	0

MACHINERY MANUFACT.

	Yes	No	Other
Hi (2)	5	4	2
Lo(1)	7	4	0
,		ار از	

y and the second	+ + +				,					
		А	B	C	D	E	F	G	H	
	Hi (2)	24	23	11	15	0	34	19	4	
OVERALL	Lo (1)	33	18	12	15	/	25	17	9	
	L	 	<u>. </u>	L				<u> </u>	<u></u>	J
a special control of										
in the second second		а	b	С	d	е	f	g	h	i
FOOD & KINDRED	Hi (2)	3	3	1	3	٥	0	3	/	
PRODUCTS	Lo (1)	4	O	/	/	0	0	/	/	
	:	a	b	С	d	е	f	g	h	
WOOD	Hi (2)	2	4	1	1	0	8	سی	0	
PRODUCTS	Lo (1)	6	2_	2	2	U	7	سی	2.	
* 14			·							
, e				,						,
	· .	а	b	С	d	e	f	g	<u>h</u>	i
PAPER	Hi (2)	4	3	2	3	0	6	2	2	
PRODUCTS	Lo (1)	6	3	4	سى	0	6	5	3	
111 7		а	• Ь	С	d	e	f	g	h	;
PRIMARY	Hi (2)	4-	2	2	3	O	5	4	0	
METALS	Lo (1)	<u>،</u> سی	5		3	0	5-	2	0	-
e en termina	<u></u>			L	1				1	
		а	b	С	d	е	f	g	h	
FABRICATED METALS	Hi (2)	4	4	2	2	0	6	2	0	
METALS	Lo (I)	5	3		2	0	6	0	2	
•										
		а	b		d l		f	7	h	; 1
MACHINERY	Hi (2)	7	7	C	U J	е 0	9	g 3	11	
MANUFACT.	Lo (1)	7	5-	3	2	7	フ	4	/	—
ومعاصرا مدائك والمحا										

											
			A	<u> B</u>	C	D	<u> </u>	 -	<u>G</u>	<u>H</u> _	
	Hi	(2)	13	13	سی	11	0	26	9	2	
OVERALL	Lo	()	21	13	6	7	0	28	9	7	
					<u>. </u>		l				
			а	Ъ	С	d	е	f	g	h	
FOOD &	Hi	(2)	3	2	0	1	0	7	1	1	
KINDRED PRODUCTS	Lo	(1)	2	0	/	1	0.	4	1	1	
			\$ 	/			'		-		
,		,	a	b	С	d	е	f	g	h	i
WOOD	Hi	(2)	7	2	v	0	0	6	44	D,	
PRODUCTS	Lo	(1)	4	. /	/	U	0	7	3	1	
•								·			
			a	b	С	d l	e	f	g	h	
PAPER	Hi	(2)	1	/	1	2	0	4	0	1	
PRODUCTS	Lo	()	سی	۷	2	3	0	6	3	٤	
								.,			
	,	ļ	a	b	С	ď	ė	f	g	h	i
PRIMARY	Hi	(2)	0	0	/	3	0	4	2	0	
MÉTALS	Lo	(1)	4	7	/	2	D	1	0	0	
						r				-	
	,		a	Ь	С	d	е	f	<u>ā</u>	h !	i
FABRICATED METALS -	Hi	(2)	3	3	/	2	.0	4	/	0	: 4 - 3
METALS	Lo	()	3	2	0	1	0	4	0	2	
e e e	· ·		a	b	С	d ,	е	f	g	h	
MACHINERY	Hi		سی	سی	3.	3	0	5	/	0	
MANUFACT.	.Lo	(1)	7	اسی	/	0	0	6	2-	/	

QUESTION No. 3/

									·	
		Д	В	C	D	E	F	G	H	
	Hi (2)	18	2	7	8	1 				
OVERALL	Lo (1)	10	9	14	g					
• •		170			0	l	L	<u> </u>	<u> </u>	ll
		а	b	С	d	е	f	g	h	
FOOD & KINDRED	Hi (2)		ح.	0	0					
PRODUCTS	Lo (1)	0	0	3	/			ļ]
•		а	b	С	d	е	f	g	l h	$\overline{}$
WOOD .	Hi (2)	4	1	D	2					
PRODUCTS	Lo (I)	2	7	2	1					
				·					<u></u>	
		<u></u>	1	ı			<u> </u>			1
	11: (2)	0	b	C	d	e	f	g	<u>h</u>	
PAPER PRODUCTS	Hi (2)	5	0	1	2.					¦
	LO (1)		U		۷				l	لبـــا
		а	b	С	, d	е	f	g	h	i
PRIMARY	Hi (2)	3	1	0					<u> </u>	
METALS	Lo (1)	2:	0	0	2					
		а	Б	С	d	е	f	g	h	
FABRICATED	Hi (2)	4	/	/	/		'			
METALS	Lo (1)	0	2	4	1					
	.		<u> </u>		-7		ţ	<u> </u>	h	;
MACHINERY	u: /э\	<u>a</u>	b	C 5	d 3	е	f	g	h	'
MANUFACT.	Hi (2) Lo (1)	/ 5	1 4		7				·	
		لــــــــــــــــــــــــــــــــــــــ	· *				<u>.</u>	L		

	``	Α	В	C	D	E	F	G	-	
	Hi (2	2) 15	11	8	6		-			
OVERALL	Lo (I) 10	9	12	10					·
•			_ t	· 	1	1		_4	<u> </u>	·
		а	b	С	d	е	f	g	h	i
FOOD &	Hi (2	2	2	0	0					
KINDRED PRODUCTS	Lo. (1) /	1/	0	2				-	
	,					'—	<u> </u>			·
	ı	a	b	С	d	е	f	g	h	i
WOOD	Hi (2	2) 3	2	0	2_					
PRODUCTS	Lo (I)フ	2	5	0					
		a	Ь	С	d	е	, f	g	h	
PAPER	Hi (2) 4	2	0)					
PRODUCTS	Lo (I) /	/	3	کا					
		·								
		а	b	С	d	е	f	g	h	i
PRIMARY	Hi (2) /	٦	0	1					
METALS	Lo (1) /	1	0	2					
		а	Ь	С	d	е	f	g	h	i
FABRICATED	Hi (2) 4	2	/	0					
METALS	Lo (1) /	/	4	/]
		a	b	С	d	e	f	g	h	i
MACHINERY	Hi (2		0	7	2_					
MANUFACT.	Lo (1) 3	3	2	3					· ·

at en jorden an	era e e e		1	1 🙃			r	 .		 ;
		A	В	C	D	<u> E</u> _	F	<u> G</u>	H	
	Hi (2)	30	10	1	0	:				
OVERALL	Lo (1)	25	12	4	1				,	
ta Lilando	, L		٠	<u> </u>			·			L
									,	
		<u>a</u>	<u>b</u>	C	d	· e	f f	<u>g</u>	h	i
FOOD &	Hi (2)	3	1	0	0			· · ·		
PRODUCTS	Lo (1)	3	2	0	0		<u> </u>	<u> </u>		- 1
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eti e jedina			1.			· ·		1 ~		
	[] (O)	<u>a</u>	b	С	d	<u>e</u>	f	g	<u> </u>	1.
WOOD	Hi (2)	6		_/	D		ļ	<u> </u>	<u> </u>	
PRODUCTS	Lo (1)	7	1	.0	٥					
	·		<u> </u>		٦		£	[اما	
	11: (6)	<u>a</u>	b	<u>C</u>	<u>d</u>	e	f	<u> g</u>	<u> h</u>	
PAPER PRODUCTS	Hi (2)	3	4	0	0			-	.	
PRODUCTS	Lo (1)	3	0	3	1			L		
		a	b	С	d	е	f	g	h	
PRIMARY	Hi (2)	4	/	0	0		,			
METALS	Lo (1)	3	2	0	0					
		•			 (,			
and the second	r en en en en en en				 					
the second second		a	Ь	<u>C</u>	d	е	f	g.	<u>h</u>	_i_
FABRICATED METALS	Hi (2)	6		0	0					
WETALS	Lo (11)	4	3	0	0					
ert 1999	· ····			_,-	, —- 	, - , -	,	***		
A visit of the second		a ·	b	С	d	е	f	g	h	;]
MACHINERY	Hi (2)	8	2	0		<u> </u>	,	3	 	
MANUFACT.	Lo (1)	·	5-	1	٥		,			
i i i i i i i i i i i i i i i i i i i	LO (I)	سی ا			0	l				

			·			,		 -	,	,
•		A	<u> B</u>	C	D	E	F	G	H	
• •	Hi (2)	21	7	7	6			<u> </u>		
OVERALL	Lo (1)	12	8	10.	10					
	<u> </u>	J			<u> </u>	L.	L	1,	<u> </u>	l
F							<u> </u>	1 0	1 .	<u>; ; }</u>
5000 0	100	a	b	C.	d	е	f	<u> </u>	h	
FOOD & KINDRED	Hi (2)	3	/	0	0			· ·	<u> </u> -	
PRODUCTS	Lo (1)	/	_	0	2			<u> </u>		
		a	b	С	d	е	f	g	h	i
WOOD	Hi (2).	3.	.2	1	2		, .	. ;		
PRODUCTS	Lo (1)	3	/	2	1			1		
	<u> </u>	····	/	A	·			£ .,	<u> </u>	
			,							
V = V		0	b	C.	d	e	f	<u>g</u>	<u>h</u>	ĺ
PAPER	Hi (2)	4	/		/	<u> </u>	.			
PRODUCTS	Lo (1)	1	2_	3	1		· ·	<u> </u>		
		а	b	C	d	е	f	g	h	$\overline{}$
PRIMARY	Hi (2)	2	2_	O	1					
METALS	Lo (1)	/	1	0	2	•				
						<u></u>	· · · · · · · · ·	'	L	
			,			;				
i	<u></u>	а	b	С	<u>d</u>	e	f	g	h	
FABRICATED METALS	Hi (2)	5	_/	/	0		<i>j</i>			
METALS	Lo (1)	7	0	3		:		LJ		
	•									
		а	b	С	d l	e	f	g	h	i
MACHINERY	Hi (2)	4	0	4	2	<u> </u>	- ' (2, 1)			
MANUFACT.	Lo (1)	3	3	2	3	 				
						7. 44.				

		Yes	No	Other
OVERALL	Hi (2)	39	2	1 (non response)
	Lo (1)	41		,

FOOD & KINDRED PRODUCTS

	Yes	No	Other
Hi (2)	4	0	
Lo (1)	4	0	

WOOD PRODUCTS

	Yes	No	Other
Hi (2)	6	2	
Lo (1)	8	0	

PAPER PRODUCTS

	Yes	No	Other
Hi (2)	7	0	
Lo(I)	6	1	

PRIMARY METALS

	Yes	No	Other
Hi (2)	5	0	, ()
Lo:(1)	5	0	

FABRICATED METALS

	Yes	Νo	Other				
Hi (2)	7	0					
Lo ₃ (1)	7	0					

MACHINERY MANUFACT.

	Yes	No	Other	
Hi (2)	10.	0	1 Chan weeps	زمد
Lo:(1)	11	O	(a) () () () () ()	

	•	·					,		•	
	A + 1	Α	В	C	D	Ε	F	G	H	
	Hi (2)	8	13	14	1	3	0	0		
OVERALL	Lo (1)	13	10	13	4	1/1	D	0	-	\
	<u> </u>	! _	L	! ,	<u> </u>	<u> </u>			<u></u>	<u> </u>
			#1 T	: 			•	· .		
		0	b	С	d	e.	f	<u>g</u> :	h	
FOOD & KINDRED	Hi (2)	0	1	2	0	1	0	0		<u> </u>
PRODUCTS	Lo (1)	13	0	/	0	0	0	0	L	لـــــا
					r vi i					
	æ	a	Ъ	С	d	e.	f	g	h	
WOOD	Hi (2)	3	0	./	:0	2	0	0		
PRODUCTS	Lo.(1)	2	3	1	2	0	0	0		
					-					
			h		<u>ا</u>		f	1 (1	ا ا	· ·
	Hi (2)	<u>a</u>	<u>5</u>	C J	0	e .	0	g	h.	
PAPER PRODUCTS	Lo (1)	2	3	/	0	U	0	v		
•	20 (1)) - /					<u> </u>	لـــــا
		·				,		. ·		
	·	a	b	C	d	e	f	g	h	i
PRIMARY	Hi (2)	/	3	1	0	0	U	0		
METALS	Lo (1)	2	0	2	/	O	()	O .		
•	,	5 m 1 m24					, v		•	
		a	Ъ	С	d	е	f.,	g	h	
FABRICATED	Hi (2)	2	4	_ <u></u>	3	0	0	0		
METALS	Lo (1)	3	1	2	1	D	0	0		
	· · · · · · · · · · · · · · · · · · ·				. 4 . %				· · ·	
	* * * * * * * * * * * * * * * * * * *		<u> </u>		ا بر	· · · · · · · · · · · · · · · · · · ·	. · £		اخارا	
MACHINEDY	11: 707	а	b	C	a	е	f :	g	'n	7 2 2
MACHINERY MANUFACT.	Hi (2)	/	2	6	<u> </u>	0	0	0		
* .	Lo (1)		3_	6	0	/	O	0		

						·					
		А	В	C	D	E	F	G	H		
· · · · · · · · · · · · · · · · · · ·	Hi (2)	12	12	9	6						
OVERALL	Lo (1)	9	C	19	5				-		
			0	//		<u> </u>	L]
			`							•	
		а	b	С	d	е	f	g	h	i	
FOOD & KINDRED	Hi (2)	1	2	1	: 0						
PRODUCTS	Lo (I)	0	0	3	1		2.4	;			ľ
						-		•			•
			b		d.		f	g	h]
W0.00	Hi (2)	<u>a</u> .	1	<u>C</u>	<u>u</u> ,	<u>e</u>		9	111	<u> </u>	
WOOD PRODUCTS	Lo (I)	2	٠ ح	2	,					<u> </u>	
	1.20 (17				. /	 - :		<u> </u>	1	r	}
	; I			,	,	,	,= 	,			3
		a	<u>b</u>	С	d	<u>e</u> .	f	g	h	j	
PAPER	Hi (2)	2	2	3	0			100			
PRODUCTS	Log(T)	2.	_ /	3	0				<u> </u>		
· 1	A REPORT OF STATE	а	b	С	d	е	f	g	h	i	
PRIMARY	Hi (2)	1	1	/ /	2	 .					
METALS	Lo (I)	3	.1	0	/		1.1	1 m 1			
e e e e e e e e e e e e e e e e e e e	The state of the s					,		n.			•
				- 1				0			i
FABRICATED	LU: 721	a	b	C	d :	е	Ţ	g	<u>n</u>	1	
METALS	Lo (1)	3	2	4	/		1, 1,				e
	10 (1)			7	1750	18 mg			L		1
	r										
		О	b	C	d	е	f	g	h	İ	
MACHINERY MANUFACT	Hi (2)	4	4	/							
MANUFACE.	Lo (I)		2	7	/						

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	· · · · · · · · · · · · · · · · · · ·	A	B			<u> </u>	-	<u>G</u>		
	Hi (2)	30	31	.2	33	10	15	4		
OVERALL	Lo (I)	27	32	0	35	11	13	2		
			L		l	L	L	L_:		L
					, ,					
		<u>a.</u>	b	С	<u>a</u>	<u>e</u>	f	g	h	-
FOOD & KINDRED	Hi (2)	4	4	0	3	0	2	0		
PRODUCTS	Lo (1)	3	3	0	ک	0	2	0		
-								`		
		а	b	С	d	е	f	g	h	i
WOOD	Hi (2)	5	3	0	5	,	D	0		
PRODUCTS	Lo (1)	5	. سی	0	6	5	سی			
7 341 4 7 4		<u> </u>	<u> </u>				<u></u>	_(
							· · · · · · · · · · · · · · · · · · ·			
		а	b	C	d	е	f	g	h	i
PAPER	Hi (2)	4	4		6	.2	سی	2		
PRODUCTS	Lo (1)	3	6	0	6	2_	ح	0		
		а	b	C	d	е	f	g	h	<u> </u>
PRIMARY	Hi (2)	4	3	0	4-	2	2	7		
METALS	Lo (1)	4	4-	0	3			0	}	
Transfer of the		. 7	9-1		<u> </u>				<u></u> _ <u>l</u>	
e e e e e e e e e e e e e e e e e e e			,							
en de la companya de	<u> </u>	а	b	С	d	е	f	g	h	
FABRICATED	Hi _. (2)	6	2	0	0	1.	2	0		
METALS	Lo(I)	ر سی	آ سی	0	0	/	/	0		
			_							
	·	a	b	С	d I	e	f	9	h	<u>;</u>]
MACHINERY	Hi (2)	フ	10	7	8	4	0	7	11	
MANUFACT.	Lo (1)	7	9	0	10	2	0	$\frac{1}{2}$		
a terminal	<u> </u>		<u> </u>		/ /					

		Д	В	C	D	E	F	G	 	
	Hi (2)	26	6	7	2	0	0			
OVERALL	Lo (1)	27	3	7	/	0	/			
	<u> </u>	<u> </u>		L <u>.</u>	L-,	<u> </u>	<u> </u>	L		
			Г Б				f		<u> </u>	-;]
FOOD &	Hi (2)	3	<u>D</u>	Ċ O	0 0	e	0	g	<u>h</u>	
KINDRED PRODUCTS	Lo (1)	2	0	1	0	0	/			
	1	(•	
•		a	b	С	d	е	f	g	h	i
WOOD	Hi (2)	6	/	.0	0	0	.0			
PRODUCTS	Lo (1)	5	0	2	0	0	0			
7										
•		а	b	С	d	е	f	g	h	
PAPER PRODUCTS	Hi (2)	4			/	0	0			
PRODUCTS	Lo (1)	5	/	/	0	0	0			
				, 					· ,	
	[] (O)	<u>a</u>	<u>b</u>	С	<u>d</u>	е	f	g	<u>h</u>	<u> </u>
PRIMARY METALS	Hi (2)	2	-/	2	0	0	0			
				٤.					<u></u> !	
9		- 1	<u></u> _	· · · · · ·				<u> </u>		
FABRICATED	Hi (2)	<u>a</u>	<u>b</u>	C •	<u>d</u>	<u>e</u>	f 0	<u>g</u>	h	
METALS	Lo (1)	سی	/	$\overline{}$	0	0	0			
		-			•		············	·····	·	
	e de la companya de la companya de la companya de la companya de la companya de la companya de la companya de La companya de la co	a .	b	С	d	е	f	g	h	<u> </u>
MACHINERY	Hi (2)	6	7	3	7	0	ک			
MANUFACT.	Lo (1)	F	7	O.	0	0	0			

OVERALL

	Yos	No.	Other
Hi (2)	42	0	0
Lo (1)	42	0	0

FOOD & KINDRED PRODUCTS

1.0	Yes	No	Other
Hi (2)	4	0	0
Lo (1)	4	0	0

WOOD PRODUCTS

	Yes	No	Other
Hi (2)	8	0	0
Lo (I)	8	0	0

PAPER PRODUCTS

	Yes	No	Other
Hi (2)	2	0	0
Lo (1)	フ	0	0

PRIMARY METALS

	Yes	No	Other
Hi(2)	5	0	0
Lo (1)	5	0	0

FABRICATED METALS

	Yes	No	Other
Hi (2)	7	0	0
"Lo (1)	フ	0	0

MACHINERY MANUFACT.

1 (m. 1) (m. 1)	Yes	No	Other
Hi (2)	11	0	0
Lo(1)	11	0	0

•		А	В	C	D	E	F	G	Н	
	Hir (2)	29	12	32	39	ح	28	عور	22	33
OVERALL	Lo (1)	33	12	30	36	8	26	40	19	39
	L	1-0				<u> </u>				
			'					-		
		а	b	С	d	е	f	g	h	i
FOOD & KINDRED	Hi (2)		9	4	4	0	3	4_	2	4
PRODUCTS	Lo (1)		3	4	4	0	/	4	0	4.
						-				
		а	b	С	d	е	f	g	h	
WOOD	Hi (2)	4	0	7	نع	0	5	7	2	15
PRODUCTS	Lo (1)	7	2	7	7		ح	7	4	7
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	•	а	Ь	С	d	е	f	g	h	i
PAPER	Hi (2)	سی	2	6	6	0	5	6	3	3
PRODUCTS	Lo (1)	7	.3	6	سی	D	سی	7.	3	6
								·		
•		а	b	С	d	е	f	g	h	
PRIMARY	Hi (2)	4	2	3	4	2	<u>-</u> -	4	11	4
METALS	Lo (1)	5	0	3	5	4	4	5	/	5
								,		·
					i					· · · · · ·
FABRICATED	Hi (2)	a 5	D 3	<u>C</u>	<u>a</u>	e	f	g	η 4	
METALS	Lo (1)	6	<u> </u>	5	7	-	6	6	4	6
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			-,, 1		·····		 -1		· · ·	ا استا
		<u>a</u>	b	C	d	e	f	g	h	
MACHINERY MANUFACT.	Hi (2)	10	2	7	1/		8	//	10	3
	Lo (1)	2	3	2	8	2	7	11	7	10

QUESTION No. 41 (Continued)

· ·	•						1			
		А	В.	C	D	E.	J	K	L	i i A
	Hi (2)	7.1	u.				25	27	11	2
OVERALL	Lo (1)			. 1			3/	25	//	3
	<u> </u>							·		<u></u>
		0	b	С	d	е	2	k	١	Y
FOOD & KINDRED	Hi (2)		,				3	3	3	0
PRODUCTS	Lo (1)					_,	3	. / .	1.	0
	· · · · · · · · · · · · · · · · · · ·						·			·
	[U (O)	<u>a</u>	b	С	<u>d</u>	е	2	<u> </u>	<u> </u>	m
WOOD PRODUCTS	Hi (2)			·			6	5	2	0.0
	LO (17]			0	<u>· ′</u>		
		· _ '}	- 1		 1 T		,	· · ·		, 1
DADED	Hi (2)	a	<u>b</u>	С	<u>d</u>	е	J 2	K 4		3
PAPER PRODUCTS	Lo (1)						5	6	<u> </u>	2
		<u>, , , , , , , , , , , , , , , , , , , </u>		<u> </u>						
	<u></u>	а	b	C.	d.	е	J	义	1	in.
PRIMARY	Hi (2)						4	3	D	2_1
METALS	Lo (1)						4	4	2	O
•						1				
		а	b	С	d	е	J	k]][177
FABRICATED METALS	Hi (2)	**************************************					4	2	2	0
Section 1995 and the second section 1995.	Lo (1)						6	4	/	0
ر مواهر العام العام العام العام العام العام العام العام العام العام العام العام العام العام العام العام العام العام العام ال			-,:-:		··· · · · ·		T			1
リター・ハイブ Alexa MAACUINEDV	11:260	a	b	C	d	е	J	K	1	m
MACHINERY	Hi (2)						6	10	3 2	0
				<u> </u>	· 1			•		

		QUESTION NO.	4/A afety Shoes
		ABCDE	F G H I
	Hi (2)	0010877689	
OVERALL	Lo (1)	1033651091112	
- A - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1		I cost paid by wenter	
	r= % repla	ement cost paid by wesker	
		a b c d e l	fghi
FOOD & KINDRED	Hi (2)	0000110000	
PRODUCTS	[Lo(1)	0000000000	
		a b c d e	fghi
WOOD	Hi (2)	0000002112	
PRODUCTS	[ro(1)	0000212234	
	·		
		a b c d e	fghi
PAPER	Hi (2)	0000221110	
PRODUCTS	Lo (1)	0011005500	

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PRIMARY	Hi (2)	0000220110	1. 12
METALS	Lo (1)	0011111110	The second secon
10 - 10 - 20 - 10 - 20 - 10 - 20 - 20 -	e programme de la companya de la com	a b c d e	f g h l i
FABRICATED METALS	Hi (2)	0000221122	
	Lo (1)	10111122	
1 114 1 44 4 4 4 4	to a series and the series of the series and the series are the series and the series and the series are the series and the series and the series are the series and the series are the series and the series are the series and the series are the series and the series are the series are the series are the series are the series are the series are the series are the series are the series are the series are the series are the series are the series are the series are the series are the series are the series are the se		- 0.7
the state of the s		a b c d e	f g h i
MACHINERY	Hi (2)	0010103334	Carrier Control of the Control of th
MANUFACT.	Lo (I)	0000221055	

		QUES		No.	41 B	R VOTS	r
	· · · · · · · · · · · · · · · · · · ·	AB	CID	FF	G	Н	
	Hi. (2)	0000	14-1-1	2 2 2			
OVERALL	Lo (1)	0000	110	0 1 1 :			
	is 7. initi	il cost p	aid by work pild !	orter by worker			
		a b	c d	le l f	g	h	i
FOOD & KINDRED PRODUCTS	Hi (2)	0000	·	200			
	<u> </u>	- 	*	<u></u>	····	·	<u>.</u>
		ab	cd	le lif	g	h	i
WOOD PRODUCTS	Hi (2)	0000	0000	00			
	<u> </u>	<u> </u>		<u>. I., </u>			
		a b	cd	le f	g	h l	
PAPER	Hi (2)	00000	1 F 1 V				
PRODUCTS	Lo (1)	0000	0000	00			
	uri.		, 180				
	11: (2)	a b		le f	<u> </u>	<u>h </u>	
PRIMARY METALS	Hi (2)	0000	0000		<u> </u>		
			<u> </u>	1 1	<u> </u>		
		a b	c d	le f	g	h	
FABRICATED	Hi (2)	0000	11/00	izizi	9		
METALS	Lo(1)		0000	1 - 1 - 1			
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	· · · · · · · · · · · · · · · · · · ·	a b	c d	e f	g	h	i
MACHINERY MANUFACT.	Hi (2) Lo (1)	0000	0000	0 0			

OVERALL La (1)	QUESTION NO. 4/C prolograph graph of the ts ABCDEFGHI CCITOOOCOI
LO (1)	0 0 0 0 0 0 0 0 2 1 Tiel cost paid by worker Accement cost paid by worker 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
WOOD Hi (2) PRODUCTS Lo (1)	a b c d e f g h i c 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
PAPER Hi (2) PRODUCTS Lo (1)	a b c d e f g h i
PRIMARY Hi (2) METALS Lo (1)	a b c d e f g h i
FABRICATED Hi (2) METALS Lo (1)	a b c d e f g h i
MACHINERY Hi (2) MANUFACT. Lo (1)	0 b c d e f g h i

		QU	EST	101	1,901.	No.). <u>~</u>	Glov		
	Hi (2)	A . r	B /		D 1 r 0 0	E 	F	G	Н	
OVERALL	Lo (1) in 7 inition re 7 vept	00		Ĭ J	wor	53	kes.			
	r. 7. repl	aceme	nt cos	/* <i>/***/</i>	ره به		1 f	C		<u> </u>
FOOD & KINDRED PRODUCTS	Hi (2)	000	000		000	e 100		g l	h ——	
PRODUCTS		100		1 <u>-</u> 1				<u> </u>		
		٠	· ····							
•	[[[]]	1 a	b	C		e 7 W	<u>†</u>	<u>g</u>	<u> </u>	
WOOD PRODUCTS	Hi (2)	00	000	0/0	00	/ / 3 /		.*		
₹ °	• • • • • •	a	. b	c l	d	e	f	g	h	<u>-</u>
PAPER	Hi (2)	00	100	0	35	00	F 1			
PRODUCTS	Lo (1)	00	000	0 .0	70	00		1 1		
	* **	a	b	c l	d	. e	f	g	h	i
PRIMARY	Hi (2)	0/	000	06					<u> </u>	
METALS	Lo (1)	00	002	2 0	00	11			7. 7.	
		a	b 1	2	d l	el	f	gl	h	
FABRICATED	Hi (2)	00	1001	77 7		2 5				
METALS	Lo (1)	00			00	00				
•										
		a	bΤα		d l	e	f	gl	hT	i
MACHINERY	Hi (2)	4	1 1 1	00		~~~ ~	-		7 -, 1	
MANUFACT.	Lo (1)	00	000		7	00	; , >	,		i

		QUESTION NO. 1/E LEGGINGS.	
OVERALL	Hi (2) Lo (1) i= 7 inition	ABCDEFGHI iririririr 000000000 00000000 cil cost paid by worker acement cost jaid by worker	
FOOD & KINDRED PRODUCTS	Hi (2)	abcdefghi	
WOOD PRODUCTS	Hi (2) Lo (1)	abcdefghi	
PAPER PRODUCTS	Hi (2) Lo (1)	abcdefghi	
PRIMARY METALS	Hi (2)	abcdefghi	
FABRICATED METALS	Hi (2)	abcdefghi	
MACHINERY MANUFACT.	Hi (2)	abcdefghi	

		QUESTION NO 4/F orolle grade grade profector
OVERALL	Hi (2) Lo (1) i= % init r= % vept	ABCDEFGH iririririr cooooooo ooooooo acl cost paid by water facement cost paid by water.
FOOD & KINDRED PRODUCTS	Hi (2) Lo (1)	
WOOD PRODUCTS	Hi (2)	abcdefghi
PAPER PRODUCTS	Hi (2)	abcdefghi 75454575
PRIMARY METALS	Hi (2)	abcdefghi
FABRICATED METALS	Hi (2) Lo (1)	abcdefghi
MACHINERY MANUFACT.	Hi (2)	abcdefghi

	QUESTION NO. <u>III G</u> oralle grade grade grade Ege Protection AIBICIDIE FIG HIII
OVERALL	Hi (2) 0 0 2 2 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FOOD & KINDRED PRODUCTS	a b c d e f g h i Hi (2) 6 6 6 6 7 6 6 6 6 6 6 6 6 6 6 6 6 6 6
WOOD PRODUCTS	G b c d e f g h i Hi (2) 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6
PAPER PRODUCTS	a b c d e f g h i Hi (2) 6 2 2 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
PRIMARY METALS	a b c d e f g h i Hi (2) 00000000000000000000000000000000000
FABRICATED METALS	a b c d e f g h i Hi (2) 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6
MACHINERY MANUFACT.	a b c d e f g h i Hi (2) 00000000000000000000000000000000000

		QU 0,201.	ES	* 1/60	(c),80°	NC 10 100	7	41 Prote Cre	extrace	
<u>OVERALL</u>	Hi (2) Lo (1) in 7. juite r. 7. repl	00	1 ;	00	0 0	000	/res	G		
FOOD & KINDRED PRODUCTS	Hi (2)	O 7 T	b	C / /	d	Te	f	g	J h	
WOOD PRODUCTS	Hi (2) Lo (1)	0 / /	b ///	C-		e	f	g	h	
PÂPER PRODUCTS	Hi (2)	O / F	b 2 e	C Z E	d // //	e	f	g	h	
PRIMARY METALS	Hi (2)	G / /	b	C Z P	d	e / F	f	<u>g</u>	h	i
FABRICATED METALS	Hi (2) Lo (1)	<u>a</u>	b	C	d	e / F	f	g 	In	i
MACHINERY MANUFACT.	Hi (2)	a 4 F	b 74	C	d	e	f	g	h	

OVERALL	Hi (2) Lo (1)	A B	C D E	JO		tectus	Tw + .1
FOOD & KINDRED PRODUCTS	1: % jaits r. % repl Hi (2) Lo (1)		C d (7	g	h i	ンして 1943年 3月3年
WOOD PRODUCTS	Hi (2) Lo (1)		C d 6	ア ロ	g	n i	4.3 (1.1 (2.4)
PAPER PRODUCTS	Hi (2) Lo (1)		C d (0 6	g	n i i	
PRIMARY METALS	Hi (2) Lo (1)	0 b		正门	g	n i	
FABRICATED METALS	Hi (2)	a b	0000		<u>;</u>		
MACHINERY MANUFACT.	Hi (2) Lo (1)	0 b	0000	f f o	g h	n i	

	· · · · · · · · · · · · · · · · · · ·	QUESTION NO. 415	
, ••		A B C D E F G H	
¥	Hi (2)	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	
OVERALL	Lo:(1)	000000022	
More than the second of the second	is % initi	lacement cost paid by worker	<u></u>
ماد د ۱۹۰۰ معم	r. 7. repl		ا
FOOD &	Hi (2)	abcaletgh	
KINDRED PRODUCTS	Hi (2)		<u> </u>
			المصدة
		Talble de flat] ;
WOOD	Hi (2)	abcadeigh	
PRODUCTS	Lo (1)	000000000	 .
			<u> </u>
eder or		a b c d e f l g h	
PAPER	Hi (2)		
PRODUCTS	Lo (1)	000000000	
	•	abcdef9h	i
PRIMARY	Hi (2)	0000000000	
METALS	Lo (1)	000000000	
the second section of the section of the s	-	abcdefgh	j
FABRICATED METALS		000000000	
STATE OF THE STATE	Lo (1)	000000000	
,			
		abcdefgh	i
MACHINERY MANUFACT.	Hi (2)	000000000000	
	Lo (I)	0000000011]

	QUESTION No. 41K
	A B C D E F G H I Hi (2) 00000000000
OVERALL	LO(1) 000000011 is 7. initial cost paid by worker r. 7. replacement cost paid by worker.
FOOD & KINDRED	abcdefghi Hi(2)
PRODUCTS	a b c d e f g h i
WOOD PRODUCTS	Hi (2) / / / / / / / / / / / / / / / / / / /
PAPER	alb cdefghi Hi(2)
PRODUCTS	Lo(I) a b c d e f g h i
PRIMARY METALS	Hi (2) / / / / / / / / / / / / / / / / / / /
FABRICATED METALS	abcde f 9 hi
MACHINERY MANUFACT.	a b c d e f g h i Hi (2) / / / / / / / / / / / / / / / / / / /

•	· -		STIC	N. 101.	No	·	HI.	L tive	Suits
OVERALL	Hi (2)	A	B C	D	E // C	F	G	H	
	ir 7. jait.	COC vil cost Vacement	1 1 1	1 1 1	1 1	:er.	g	h	
FOOD & KINDRED PRODUCTS	Hi (2)								
WOOD PRODUCTS	Hi (2)	a / / /	b C	d 7.7	e	f	.g	h	<u>i</u>
PAPER PRODUCTS	Hi (2) Lo (1)	Q /) C	d 7/2	e Z Z	f	g	<u>h</u>	
PRIMARY METALS	Hi (2) Lo (1)	a 2 r /	O C	d	e	f	g	h	i
FABRICATED METALS	Hi (2)	a t) C	d / r	e	f	g	h	i
MACHINERY MANUFACT.	Hi (2)	a t) C	d	е	f	g	h	i

		QUESTIC	ON NO	41, 0ther	M Eguipsne	سغربه و
	Hi (2)	A B C	D E	F G		
OVERALL	Lo (1)	al cost paid accement cost	1 1			_
FOOD & KINDRED PRODUCTS	Hi (2)	0 0 C 0 0 0 0 0	0 e 00000	† g	h	
WOOD PRODUCTS	Hi (2) Lo (1)	a b c	d e	f g	h	
PAPER PRODUCTS	Hi (2)	a b c	d e	f g	hi	_
PRIMARY METALS	Hi (2)	a b c	d e	f g	h i	
FABRICATED METALS	Hi (2)	a b c	d e	f g	h i	
MACHINERY MANUFACT.	Hi (2) Lo (1)	a b c		f g	hi]

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				,	,									
		A	B	<u> </u>	D	<u>l</u> E	·	F		G		<u> </u>		
	Hi (2)	45	(1) 5	a 5	a s		<u>5</u>	a	\neg	<u> </u>	٩	S	<u>r.</u> [-
0.72.0.41.1	ļ · · · · · · · · · · · · · ·	10 8	0 5	4 23	4 26	0	5	0	22 :	21/14	0	9	2	25
OVERALL	Lo (1)	10 10	0 11	5 22	12	0	7	0	24	برد ک	0	10	7	27
			= all = som	_										
					1			Ĺ	- 1	<u>~</u>	}— <u> </u>			_
5000		<u>(</u> (1	b	C ale	<u>व</u> व्यङ	141	3	<u>.</u>	5 0	g Už]] <u>ु</u>] इ	<u>।</u> द्या	5
FOOD & KINDRED	Hi (2)	01	00	12	0 2				2	/ 2-	0	7		
PRODUCTS	Lo (1)	0 1	0 3	1 3	04	0	٥	0	4	1 3	0	0	/.	3
		a	b	С	d	Ге		f		g)		
WOOD	Hi (2)		00	213	05	তা	50		<u>\$</u> 3	<u> </u>	a D	,	0:0	되
PRODUCTS	Lo (1)		02	25	06	1-1	0		i	0 7	0	2		3
i	120 (1)	1/ 13	١٥١٤	2 3		101				12				لــُــ
		a	b	С	d		9 .	f		g	-			
PAPER	Hi (2)	A 3	0 1	05	05			0	<u>5</u>	1 1/2		<u> </u>	0 1	넔
PRODUCTS	Lo (1)	3 3	03	06	04	0	0	0 3	5/	6	0]	14	Z
							•	1						
			b	С	d	е	. 1	f	Т	g	ŀ	, 1	<u>;</u>	٦
55.446.634	Hi (2)	<u> </u>	व्याह	Q 5	04.3	191	5l		5)0	5	<u>a</u>	$\overline{}$	<u>याः</u>	
PRIMARY METALS	Lo (1)	30	0/	/ 3	1 3	0		0 -	{		0	위	<u>د ر</u> د ر	_
		41	00	//	14	0	4/	2]5	4 5	ζ		U	1 4	
		a	b	С	d	е		f	T	g	h		i	
FABRICATED	Hi (2)	20	05	04	2 2 2	0		0 4		(0)	0	2		
METALS	Lo (1)	11	00	13	04	1	1		4 2		0	/	2	2
	-									4				—
			<u> </u>			<u> </u>		f		<u>_ </u>	_ h		- 1	٦
MACHINEDY	11: (0)	Q Q 5	D এই	C als	<u>এ</u> আয	e 의	<u> </u>	<u>৷</u>	<u> </u> a	<u>g</u> <u>Js</u> i		5	। वाड	L
MACHINERY MANUFACT.	Hi (2)	33	02	06	09	0	4	0 5	4 0	12	0	5	0 6	_
	Lo (1)	144	03	04	0.7	0	2 0	0 7	7 0	3	0	4	2 8	1

QUESTION No. 42 (continued)

The second of the second of	•		, —	,	, ,		<u> </u>
		Α	В	С	D	E	JKLM
	Hi (2)						0 16 0 21 0 7 0 2
OVERALL	Lo (1)						0 25 0 22 0 9 0 3
, ,	<u> </u>	امت	all			<u> </u>	
		\$ =	some	<u>ي</u>			
* **		а	р	С	d	е	J K I m
FOOD &	Hi (2)						02010100
KINDRED PRODUCTS	Lo (1)						03010100
•		. ,					
	-	a	b	С	d	е	JKIm
WOOD	Hi (2)				<u> </u>		ताड वाड वाड वाड
WOOD PRODUCTS	Lo (1)						03030000
	20 (17			<u> </u>			10101017101210101
,		·		1			
	·	а	b	С	d	е	7 K 1 m
PAPER	Hi (2)						0 1 0 3 0 2 0 0
PRODUCTS	Lo (1)				,		05050302
•							
		а	b	С	d	е	5 K 1 m
PRIMARY	Hi (2)	<u>.</u>			<u> </u>	<u> </u>	as as as as
METALS	Lo (I)	1					02040100
		لــنــا					
	i	<u> </u>					<u> </u>
		а	b	С	d	ω	J K I m
FABRICATED METALS	Hi (2)						0 2 0 2 0 2 0 0
METALS	Lo (1):						03020100
	5. 7.			T.		,	
		а	b	С	d	е	T
MACHINERY	Hi (2)	u	U	<u> </u>	ų.		J K M
MANUFACT.	Lo.(1)						03090200
		<u>l</u>	1				06060101

		Δ	В	-C	D	E	F	G	Н	
	Hi (2)	39	37	0	16	2	D	0	13	0
OVERALL	Lo (1)	40	35	1	16	3	0	2	7	/
	·	4.					· <u> </u>	 -	ل ـ ـــ ـ ــــــــــــــــــــــــــــ	
•		а	b	С	d ·	е	f	g	h	i
FOOD & KINDRED	Hi (2)	4	4	0	/	0	0	0	2	0
PRODUCTS	Lo (I)	4	3	0		0	0	/	1	
							£		<u> </u>	
WOOD	Hi (2)	7	<u>b</u>	0	<u>d</u>	e	f	9	<u>h</u>	0
PRODUCTS	Lo (1)	8	7	0	5	0	U	0	0	7
	•									
		а	b	С	d	е	f	g	h	
PAPER PRODUCTS	Hi (2)	7	7	0	5	0	0	0	2	0
	Lo (1)	16_1	6	0	4	0	0	0	2	0
			<u> </u>		- 		<u> </u>	<u>a</u> 1		
PRIMARY	Hi (2)	<u>a</u> /	b 5-	<u>C</u>	<u>d</u>	<u>е</u>	f	<u>g</u>	ا <u>n</u> ا سی	-
METALS	Lo (1)	0	4	0	3	1	0	0	0	0
					,					
		а	b	c	d	e	f	g	h	i
FABRICATED METALS	Hi (2)	0	5	0	2	0	0	0	2	0
	Lo (1)		7	<u> </u>	/	0	0	0	اح	0
		 	-,			· •			- 	
MACHINERY	Ц: /2\	a 10	b 10	<u>C</u>	d Y	e	f	g 0	h	0
MANUFACT.	Hi (2)		8	0	2	2	0	7	2	0
	<u> </u>	لللنت								

QUESTION No. 444.

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OVERA	LL_																									
	A			В			\overline{C}			D			Ē			F			G			H	**			
RANK	1. 2	3		2	3	1	2	3	1	2	3	ī	2	3	1	2	3.	1	2	3	1	2	3	1	2	3
Hi (2)	4 13	15	15	14	/	7	0	0	ے	4	3	0	/	0	0	0	v	0	0	0	عر	,	/	0	0	0
Lo (1)	17 12	7	7	12	<u></u>	,	0	0	<u></u>		8	0	0	<u> </u>	0	0	ムク			0		0	4	0	0	0
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FOOD 8			ΕD		RC	וסכ		TS.	A.		ient	: cc		nie	st	oase c	od o	n C	HI	SQU	ARE	. re	st	(p <	₹.0 :	1) (
(a)		<u> </u>	ļ,	b	_		C			a	_	· 1	e	_	. 1	I			g			n				_
RANK	1 2	<u> 3</u>	-	2	3		2	3	-	2	3	-	3	3		2	3		2	3		2	3			3
Hi (2)	12	1	2	2	.0	0	0	0	0	0	/	0	0	0	0	0	0	0	0	0	0	0		0		0
Lo (1)	3/	0	1	2.	0	0	0	0	0	0	/	0	0	0	0	0	0	0	/	0	0	0	/	0	O	0
WOOD	PRO	DUO	CT:	S																						
	a			b			С		_	d			е			f			g			h			i	
RANK	1 2	3	1.	2	3	1	2.	3		2	3		2.	3	1	2	3		2	3	1	2	3	1	2	3
111 (2)	11	3	1	3	0	0	0	0	3	0	0	0	1	0	0	0	0	0	0	0	7	0	0	0	0	0
Lo (1)	22	2	5	2	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PAPER	PR(٠	107			<u>'</u>																اردستا	ادمسما		<u></u>	
FAFLIX	<u> </u>	-	<u> </u>	h	_		C.			d			e			f			$\overline{\alpha}$			ĥ	}	-	 -	
RANK		3	-	ر. اح	-3		2	3		2	-7,			3		2	3		2	3			-3		2	_
Hi (2)	Jana Jana	7	5	-				v	<u> </u>	•				_	-							۔ <u>:</u>			-	_
Lo (1)	<u> </u>	۲.		_	0	0			_			<u> </u>		0				0		0	<u></u>	(2	ري	0	
(ره سلسخت	0	2	4	0	0	0	0	0	0	J	0	0	0	0	0	0	0	0	0	0	\mathcal{O}	2			
PRIMAR	RY M	EΤ	AL	<u>s_</u>					1		-1							,		 ;					. -	 1
	0			b			C			₫			e			†			g		,	<u>n</u>				_
RANK	,			_	3			-		.2	_		_	3					2	3		-	3	1	2	3
Hi (2)	10	4	0	4	0	_	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0
Lo (1)	12	2	3	/	0	0	0	0	1	/	/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FABRIC	ATEC) 1	лЕ.	1.V.	LS																					
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RANK	1 2	3	I	2	3	ī	2	3		2	3	1	2	3	T	2	3	1		3	1	2	3		2	3
Hi (2)	03	+		2	7	0	0	0	1		/				0	0	0	0	0	0	2	0	0	0	0	0
Lo (1)			2	4		,				0	<u></u>			0				0		_		0			0	_
	المستلكة	ائد			<u>ت</u>						<u> </u>	_		نٽ				<u> </u>				-	أستا			<u>~</u> 1
MACHIN		-	ANI		10	I U		VG		7				_		f			~							— 1
<u> </u>	a		<u> </u>	b		. 1	C	_	<u></u> -	d	_		e	_					<u>g</u>	_		h		 		_
RANK	1 2	_		_	3.1	\neg	2				3	_		3		2	3	-	2			2	3			3
Hi (2)		2		\neg	-	0	0	0	0	3	4	0	0	0	0	0	0	0	0	اِه	4	0	0	0	0	의
Lo (I)	73	2	4	4	0	0	0	0	1	/	_	0	0	/	0	0	0	/	0	U	0	0	0	0	0	0

	,	Д	В	Ĉ	D	E	F	G	Н	
	Hi (2)	2	17	12	7	2				
OVERALL	Lo (1)	2	19	14	6	/		-		
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			h		<u></u>		l t	1 0	<u> </u>	 -
FOOD &	Hi (2)	0	b	C	d	e	<u> </u>	<u>g</u>	l h	
KINDRED PRODUCTS	Lo (1)	0	/_	2	0	0		}-		
L. LÍODÓC 12					,		L	L	L	
			 -	, ,	, 	,···	,	,	e 1	, -
,		0	<u>b</u>	С	d	е	f	g	h	<u> </u>
WOOD	Hi (2)	/_	4	2	1	0		ļ.,	<u> </u>	
PRODUCTS	Lo (1)	0	5	2	/	0		<u></u>		
•		а	b	С	d	е	f	g	h	i
PAPER	Hi (2)	0	4	3	0	Ö	· ·		· · ·	
PRODUCTS	Lo(I)	. 0	3	3	1	O				
			·					·		
			h		ا: ہے		f	<u></u>	<u> </u>	-;- 1
50111001	Hi (2)	0	<u>b</u>	<u>C</u> /	<u>d</u>	e 0	<u> </u>	g	h	
PRIMARY METALS	Lo (1)	0	2	2		 }				
•	20 11/			١		0	-	<u></u>	·	
	_							·		
	5	а	b	С	d.	е	f	g	h	i
FABRICATED METALS	Hi (2)	0	ح	3	0	/				
METMES	Lo (1)	0	4	/	2	0				
	[al	b	c	d	е	f	g	h	<u> </u>
MACHINERY	Hi (2)	/	3	-	3	7	<u>'</u>	-		
MANUFACT.	Lo (1)	/	4	5	7	0				

		20.00						7	**;	
		А	В	. C*	D	E	F	G	H	
٠.	Hi (2)	36	38	2	0	3	3.7	28	/	0
OVERALL	Lo (1)	37	34	11.	1	1	26	28	/	/

*Significant High vs. Low Accident Company response difference (p<.05) based on CHI SQUARE test of individual response choices (7).

	4.
FOOD	8.
KINDRE	
	_
PRODUC	TS

_		a	b	С	d	е	f	g	h	ĺ
[Hi (2)	4	4	0	0	0	4	4	0	0
	Lo (1)				·		5			7

WOOD PRODUCTS

	а	b	С	d	e	f	g	h	. i
Hi (2)	6	G	1	Ó	0	4	4	0	0
Lo (1)	Ş	7	2	0	1	6	5	0	0

PAPER PRODUCTS

	а	b	С	d	е	f	g	h	. V
Hi (2)	フ	フ	O	0	1	6	سی	Ö	0
Lo (1)	5	6	1	0	0	4	5	0	1

PRIMARY METALS

· ·	a.	b	С	d	е	ıf	g	h	i
Hi (2)	5	5	/	0		5	5	0	0
Lo (I)		4				4		0	

FABRICATED METALS

	а	b	С	d	е	f	g	h	i
Hi (2)	5	6	0	0	υ	5	5	0	O
Lo (I)	6	7	0	1	0	4	5	0	0

MACHINERY MANUFACT.

	a	b	С	d	е	f	g.	h	i
Hi (2)	9.	10	D	0	1	9	5.	1	0
Lo (1)	10	7	4	0	0	5	6	1	0

OVERA	<u>LL</u>	_																									
		Δ*		В			C			$\overline{\mathbb{D}}$			Ē			F	* 4		Ĝ			H		Γ	Ī		
RANK		2	3 1	2	3	Ī	2	3	1	5	3	1	2	3.	1	2	3	1	12	3		2	3	1	3	ز.	
Hi (2)	4	F1	0 16	11	6	0	0	2	0	0	0	0	0	o	10	16	3	6	2	9	1	0	0	0	0	0	
Lo (1)	13	11 6	5/5	1/3	2	2	1	3	0	0	1	0	0	0	4	5	9	2	1	8	0	0	0	1	0	0	
FOOD 8	K	IND:	 RF [)	PRO	חר	LIC.	TS	*Si	gni	ific	ant	ilt	.0	5 ba	sed	on	Ch	II S		ŔĿ	Les	ιo	íΗ	igh	vs.	l.ow
	Ϊ	a		b			C	<u></u>	- "	d		T .	e	<u></u>	1333	f	11,111		<u>۔۔۔</u> ا	01.	<u> </u>	h	-		—;· i	~~~	
RANK		2 3	5 1	2	3	 	2	3		2.	3	<u>! </u>	2	3		2	3	! ! 1	12	3	-	2	13		- 2	T3	
Hi (2)	0	2/	2	_ /	1	0	0	0	0	0	0	0	0	0	/	1	2_	1	0	0	0	0	0	0	0	0	
Lo (1)	1	//	0	2	1	0	0	O	1			0		0	2	0	1	0	0	0	0	0	0	0	0	0	
WOOD	السيا 12 م	ODI	حمانہ ۲۰۱۲ کا	· S	<u></u>		J		!	L	1	i		 .	-	<u> </u>								<u></u>	<u>ــــــــــــــــــــــــــــــــــــ</u>		
	<u> </u>	<u>a</u>		Ď			C			d	·	-	<u>-</u> -		ĺ	f			CI		<u> </u>	'n		_		~~]	
RANK	-	2 3		2	3	<u>.</u>	2	3	<u> </u>	2	3	! !	2	3	1	2	5	! 	S	3	 	2	3		2	3	
Hi (2)		1 2	1/	2	2	0	0		0	0	0	0	0	0	/	ع	0	3	0	0	0	0	0	0	Ť	0	٧.
Lo (1)	2	3 0			ستتم	0	' <u></u> -	/	0	0		0	— i	0	/	1	2	0	0	2	0	0	0	0	;.== 	0	•
PAPER	ات.	ROD				<u>.</u>	<u></u>					لمسا									L		1	L	. ــــا.	لسيا	•
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RANK		2 [72.	5	<u> </u>	2		i	2	3	<u> </u>	 -	3		2	ا د د د مورد د ا	-	[2]	3	 		3		<u>.</u>	3	
Hi (2)	<u> </u>	حجم أمسان	- 5	-/	0	0	0	0	0	0	0	0	0	0	/	2	0	0	0	2	0					0	
	3		// 2	3	0			0	_		<u></u>	0	. 	·	0	,	۔۔۔ ا	<u></u>	D	_	0	¦	0	_	0		•
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Hi (2)		0/	//		2			i									است						0				
Lo (1)	7	2 /	3		U	1				1		0		Ī		_			Ĺ	,	20	,-,-		0			
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FABRIC.	41 6	<u>a</u>	ME	b	<u> </u>		C	\neg		d	_		е			f	_		~	_		h	_			1	
RANKI	<u>.</u>	2 3		-	3	1	2	_ - -			<u></u>			<u>- </u>	,	2	<u>_ </u>	 	9 2	3	<u> </u>	$\frac{5}{11}$	3	· 1	2	3	
Hi (2)	0	1/	2			0				0	0	٦.٦	ī	0	ار	j	0	<u></u>	D	ر		<u>-</u>	0	<u>.</u>		-	
Lo (1)		2 0	-	3	0						ژ —ب آ	1	<u></u> -	ì			,	<u>'</u>	 		<u></u>	7					
			٠	ليحيا					ال		<u> </u>	1	9		<u> </u>	<u>/ </u>	6,			***	0	<u></u>	0			0	
MACHIN		<u> </u>	IAN	b		<u> </u>		76		d	-7				, ,	f	í		~			h				-	
RANK		2 3	1		3	1	C 21	3			3		<u>e</u>	3	1	.i 2	3	1	g 2	3	71	$\frac{h}{2}$	3	, 1	2	3	
Hi (2)	2	/ 3		i i	i	0					0			_	2	6	أر	<u>-</u>	5	44	<u>ٔ</u> زـٰــٰـــٰـــٰــا	1	0	<u>.</u>			
Lo (1)	3	, ,	-}	 	-	_	-	-	_	0	î	7	$\overline{}$	Ť	1	,		_	<u></u>	- -]	<u> </u>		-	0	0	9	
	ر ک	کید { سے	ے ['	3		_2	/	/	0	U	U	C.	0	0		1	إب		1	71	0	4	0	1	0	0	

OVERALL

	Yes	No	Other
Hi (2)	37	4	1 (no verpouse
Lo (1)	37	5	0

FOOD & KINDRED PRODUCTS

	Yes	No	Other
Hi (2)	گ	1	0
Lo (1)	2	2	0

WOOD PRODUCTS

	Yes	No	Other
Hi (2)	5	3	0
Lo (1)	フ	1	0

PAPER PRODUCTS

	Yes	No	Other
Hi (2)	7	0	0
Lo (i)	6	1	0

PRIMARY METALS

	Yes	No	Other
Hi(2)	سی	O	0
Lo (1).	صح	0	0

FABRICATED METALS

	Yes	Νo	Other
Hi (2)	7	0	0
Lo (1)	7	0	0

MACHINERY MANUFACT.

	Yes	No	Other
Hi (2)	10	0	1
Lo (1)	10	1	0

QUESTION No. 49 .

	•	А	В	C	D	E	F	G	Н	
	Hi (2)	1	25	0	0	12				
OVERALL	Lo (1)	2	20	0	5	10				
		1-				1,0	<u>!</u> _	<u> </u>	<u></u>	<u></u>
	<u> </u>	a	b	С	d	е	f	g	[h	i
FOOD & KINDRED	Hi (2)	0	3	0	0	٥	<u></u>			
PRODUCTS	Lo (1)	0	2	۵	0	_ما				
		а	b	С	.d	е	f	g	h	Īil
WOOD	Hi (2)	0	4	C	0	1		-		
PRODUCTS	Lo (1)	0	3	0	1	3				
			b		d		ı f	la	h	<u> </u>
PAPER	Hi (2).	0	4	0	0	e 3		<u>g</u>		
PRODUCTS	Lo (1)	0	4	0	1	1				
	<u></u>				<u></u>			·	<i>ـــــــ</i>	`
			 -			7	<u> </u>		· ·	 1
	[11: (2)	a	b	C	d	e,	f	g	h	-
PRIMARY METALS	Hi (2)	0	4	0	2					
	LO (17		2_	0		0				LJ
		_								
		а	b	С	d	е	f	g	h	i
FABRICATED METALS	Hi (2)	0	4	_0_	0	3				
	Lo (1)	0	5	ا ن	0	2				
1		а	b	С	d	е	f	g	h	i l
MACHINERY	Hi (2)	/	6	O	0	4				
MANUFACT.	Lo(I)	1	4	0	1	4				

OVERALL

Hi (2) 20 20 2 (no		
	ropense	·)
Lo (1) 17 24 1/ m		

FOOD & KINDRED PRODUCTS

	Yes	No	Other
Hi (2)	1	3	0
Lo (1)	4	0	0

WOOD PRODUCTS

	Yes	No	Other
Hi (2)	0	8	0
Lo (1)	2	6	. 0

PAPER PRODUCTS

	Yes	No	Other
Hi (2)	7	0	0
Lo (I)	3	4	U

PRIMARY METALS

	Yes	No	Other
Hi (2)	2	_3	0
Lo (1)	2.	کا	ı

FABRICATED METALS

	Yes	No	Other
Hi (2)	3	3	1
Lo (1)	3	4	0

MACHINERY MANUFACT.

	Yes	No	Other
Hi (2)	フ	Ŋ	1
Lo(1)	3	8	D

QUESTION No. 5/

		-								
		Α	<u>B</u>	C	D	<u>E</u>	F	G	<u> </u>	
	Hi (2)	0	17	3	2					
OVERALL	Lo (1)	2	8	3	1			,		
	<u> </u>	I	l <u></u>	L			L		l	
					, ;	·		<u>,</u>	, .	
		а	b	С	d	e	f	g	<u>h</u>	
FOOD & KINDRED	Hi (2)	0	1	0	0	<u> </u>				1
PRODUC'TS	Lo (1)		2	0	0	<u> </u>		<u> </u>		
		•								
		а	b	С	d	е	f	g	h	i
WOOD	Hi (2)	0	1	0	0	ļ				
PRODUCTS	Lo (1)	0	2.	1	0					
			5			·				
			<u> </u>		7		£	l a	h	· - 1
-4555	Hi (2)	0	b	<u>C</u>	d	e	f	<u>g</u>	<u>h'</u>	<u></u>
PAPER PRODUCTS			5		/_	<u> </u>		<u> </u>		
,	Lo (1)	1	D	2	0			<u> </u>	L	ļJ
		a	b	С	d	е	f	g	h	[i]
PRIMARY	Hi (2)	0	2	0	0					
METALS	Lo (I)	0	0	0						
	Ţ	а	Ь	С	d	e.	f	g	h	i.
FABRICATED	Hi.(2)	0	3	1	0	<u> </u>	'	<u> </u>		
METALS	Lo (1)	0	2	0	O					
	L					·—				
	ſ		·	· 			<u> </u>	 -		 1
		<u>a</u>	b	C	d	е	f	g	h	
MACHINERY MANUFACT.	Hi (2)	0	سي		/					
	Lo (I)	0	_2_	0	٥					

•		А	В	С	D	E	F	G	H	
,	Hi (2)	21	16	6	3					
OVERALL	Lo (1)	14	13	3	3					
		•								
		а	b	C	d	е	f	g	h	i
FOOD & KINDRED	Hi (2)	/		0	0					
PRODUCTS	Lo (1)	7	3	0	/					
		_								
		a	b	С	d	е	f	g	h	
WOOD	Hi (2)	0	.0	O	0					
PRODUCTS	Lo (1)	3	2	1	D					
	,									
		а	b	С	d	е	f	g	h	i
PAPER	Hi (2)	7	6	/	/					
PRODUCTS	Lo (1)	2	3	0	٥					
	· :	а	b	С	d	е	f	g	h	i
PRIMARY	Hi (2)	2	2	ک	٥					
METALS	Lo (1)	2	/	/	0					
		а	b	С	d	е	f	g	h	i
FABRICATED METALS	Hi (2)	4	2	/	/					
METALS	Lo (1)	3	3	٥	/					
		а	b	С	d	е	f	g	h	i
MACHINERY	Hi (2)	7	5	٤	/					
MANUFACT.	Lo (1)	/	/	_/	/					

		<u> </u>			1 =	1		7	1	٠
•		A	В	C	<u> D</u>	E	F	G	 H	
	Hi (2)	34	6	1	0					
OVERALL	Lo (1)	37	Ŋ	/	1		<u> </u>			
·		· !		1 _		L	<u> </u>	<u> </u>	<u> </u>	<u>'</u>
	,	а	b	С	d.	е	f	g	Th	l i
F00D &	Hi (2)	4	0	0	0					
KINDRED PRODUCTS	Lo (1).	4	0	D	0				<u> </u>	
	<u> </u>				!	 -	·		L	i
		a	b	С	d	е	f	g	h	
WOOD	Hi (2)	5	3	0	0	-				
PRODUCTS	Lo (1)	7	 /	0	0			i		
		<u></u>	. ' -	L		ــــــــــــــــــــــــــــــــــــــ		·	<u>!</u> ;	·
										
,	1	<u>a</u>	<u>b</u>	С	d	e.	f	<u>g</u>	h	
PAPER	Hi (2)	2	0	٥	0					
PRODUCTS	Lo (1)	6	0	0	/			L		
		a	b	С	d	е	f	g	h	i
PRIMARY	Hi (2)	5	0	U	0					
METALS	Lo (1)	حی	0	D	0					
			·				_	•	-	
r		а	Б	С	d:	e	f	g	h	
FABRICATED	Hi (2)	5-	7	/	0					
METALS	Lo (1)	6		0	0					$\overline{}$
		<u> </u>		<u> </u>		1			1	
c	1	· - · · · ·	, 1	- · ·			 1		, 1	
	100	a	b	<u>C</u>	d	e	_f	g	<u>h</u>	
MACHINERY MANUFACT.	Hi (2)	8	2	0	0					
	Lo (I)	9	/	/-	0	-		: :		

		A	В	C	D	E	F	G	Н	
	Hi (2)	16	17	7	/					
OVERALL	Lo (1)	 	1			 		<u> </u>		
	LO (1)	21	10	10	_	<u> </u>			<u> </u>	
	.*	а	Ъ	С	d	l e	f.	g	h	<u> </u>
FOOD &	Hi (2)	1	7	2	0		<u> </u>	<u> </u>		-
KINDRED PRODUCTS	Lo (1).		3	0	0	1				
	·	}	· · · · · · ·	·				·	L	<u>.</u>
1						γ	 	1 ~	· ·	·
		<u>a</u>	<u> b</u>	C	d	e	f	<u> g</u>	h	
WOOD PRODUCTS	Hi (2)	2	2	3	/	<u> </u>			<u> </u>	
PRODUC ₁₃	Lo (1)	5	0	3	0	<u>. </u>	<u> </u>	<u> </u>		
	•	a	Ь	С	d	е	f	g	h	i
PAPER	Hi (2)	4	3	0	0	<u> </u>				
PRODUCTS	Lo (1)	4	2	0	1					
			•							
	*		<u> </u>	<u> </u>	لم	\	<u> </u>	10		
, ,	[II: (2)	a	<u>b</u>	C	d	e	f	<u>g</u>	h	
PRIMARY METALS	Hi (2)	2	3	0	Ο.	 				
, .	10 (1)	2	2	/	0	L	<u> </u>	<u> </u>		ļ
		а	b	С	d	е	f	g	h	i
FABRICATED	Hi (2)	7	3	1	D					
METALS	Lo (1)	4	7	/	0					. =
:										
•			h .		<u>.</u>		f		<u> </u>	<u> </u>
MACHINERY	Hi (2)	<u>a</u>	b	C	d O	е		g	h	
MANUFACT.	Lo (1)	5	5	5	0					
· · ·		ا ت	/	[J]	_	í .	Ī	1	, 1	, ,

QUESTION No. 55 .

								· .		
	 	Д	8	C	D	E	F	G	H	
-	Hi (2)	17	13	9	2		-			
OVERALL	Lo (1)	20	11	10	1		·			
	1	 -		<u> </u>	<u> </u>	<u> </u>	•			·
	•		,	,			, <u>-</u>	·	,	,
		0	b	C	d	e	f	<u>g</u>	h	
FOOD & KINDRED	Hi (2)	0	3	/_	0			<u> </u>		
PRODUCTS	Lo (1)	3	1	0	0					
4	-									
* r = 0		a	b	С	d	е	f	g	h	
WOOD	Hi (2)	3	1	2	2					
PRODUCTS	Lo (1)	5	2		0					
•		<u> </u>		<u></u>						
•		а	_b_	С	d	е	f	g	h	i
PAPER	Hi (2)	3	3	1	D					
PRODUCTS	Lo (1)	2	0	4	/					
							•			
			Ь	С	d	е	f	g	h	;
DOIMADV	Hi (2)	<u>a</u>	3	7		-		9	_'-'	
PRIMARY METALS:	Lo (1)		4	0	0					
			7- 1		0		·	لا		
•		a	Б	С	d	е	f	g	h	
FABRICATED	Hi (2)	4	/	2	0					
METALS	Lo(1)	3	D	4	0					
•									<u></u>	
	ſ	a	<u>ь</u> Т	<u></u>			f		'nΙ	- ; - 1
MACHINERY	Hi /2)		<u>b</u>	<u>C</u>	d	e		<u>g</u>	11	
MANUFACT.	Hi (2)	6	2	2	0					
	LU (1/	0	4		0	لــــــــــــــــــــــــــــــــــــــ		1		

QUESTION No. 56 (Lost Time)

		1	- ^-		<u> </u>	1 65					\
,			Д	<u> B</u>	C	D	<u>LE</u>	F	G	H	<u> </u>
	Hi (,2	<u>?)</u>	40	/	0	0	0	0			
OVERALL	Lo (I)	38	3	0	0	0	0			
	<u> </u>				4	.	·	.	· ;	* - · · · · ·	 .
		٠.		T I_		<u> </u>	T	T C			دا
5000 0°	111111111111111111111111111111111111111		a	b	. C	d	l e	f	<u>g</u>	h	
FOOD & KINDRED	Hi (2		4	0	0	0	0	0	 	 -	
PRODUCTS	Lo. (1)	4	0	0	0	0	0		<u> </u>	: 5
• •		٠. [а	b	С	d	е	f	g	h	[i]
WOOD	Hi (2	2)	В	0	0	0	U	O			
PRODUCTS	Lo (1		7	1	0	0	0	0			
•	!			L <u></u> -	!	l	I	·	<u> </u>		l
			а	. b	С	d	e	f	g	<u>h</u>	<u> </u>
PAPER	Hi (2	?)	6	1	U	0	0	0		<u> </u>	
PRODUCTS	Lo (1)	5	1	0	0	0	0		<u> </u>	
								•			
	v	Ī	<u> </u>	h		4		f		h	
	Li: /2	.,	<u>a</u>	b	С	d	<u>е</u>		g	h	
PRIMARY METALS	Hi (2	·/	سر	0	0	0		0		ļ·	
	LO (1		_ کی	0			0	0	<u> </u>	<u> </u>	
<i>t</i>	•	[a	Ь	С	d	е	f	g	h	j 7
FABRICATED	Hi (2)	7	0	0	0	0	0			
METALS	Lo (I		6	/	V	0	0	0			
		1	<u> </u>	ا ا				<u>. </u>			·
	1	ſ			ا				~	T 1.	
		_		b	С	d	е	f	<u>g</u>	h	1
MACHINERY MANUFACT.	Hi (2	—∤	10	0	0	O	0	0	· 		
	Lo (I)	0	0	0	0	0	0			

QUESTION No. 56 (Minor Injury)"

,		Α	В	C	D	E	F	G	H	
	Hi (2)	22	13	1	0	/	0			
OVERALL	Lo (1)	23	/2	5	/	0	0			
•						-				
• •		а	Ь	С	d	е	f	g	h	
FOOD 8	Hi (2)	3	1	0	0	0	0	9	<u> </u>	
KINDRED PRODUCTS	Lo (1)	2	2	U	0	0	0		}	
e e e e e e e e e e e e e e e e e e e			<u> </u>		<u> </u>				·	لـــــــــــــــــــــــــــــــــــــ
		а	b	С	d	е	f	g	h	i
WOOD	Hi (2)	سى	2	0	U	0	O			
PRODUCTS	Lo (1)	5	J	0	0	0	0			
		a	b	С	d	e	f	g	h	
PAPER	Hi (2)	3	3	/	U	0	Ú			
PRODUCTS	Lo (1)	4	0	1	/	0	0			
									٠	
		а	b	С	d	е	f	g	h	i
PRIMARY	Hi (2)	3	1	0	0	0	0			
METALS	Lo (1)	4	/	0	0	0	0			
						•				
		а	b	С	d	е	f	g	h	i
FABRICATED METALS	Hi (2)	2_	2	0	0	/	0			
IAIT I WED	Lo(1)	3	2.	2_	0	. 0	0			
•		а	b	С	d	е	f	g	h	i
MACHINERY MANUFACT.	Hi (2)	б	4	0	0	0	0			
WIAINUFACI,	Lo (I)	5	4	2	0	0	0			

QUESTION No. 56 (Never Escape)

			А	. B	С	D	E	F	G	1-1	
	Hi	(2)	20	8	7	0	/	Ó			
OVERALL	Lo	(1)	24	11	1	Ş	U	0			
			\$ 					<u></u>	· · · · · · · · · · · · · · · · · · ·	·——,	
	. ,	•	а	b	C	d	е	f	g	h	i
FOOD & KINDRED	Hi	(2)	/	2	/	0	0	٥			
PRODUCTS	Lo	.(1)	2	1	0	/	0	O			
·	•						•				
			a	b	C '	d	е	f	g	h	i
wood	Hi	(2)	6	/	0	0	O	0			
PRODUCTS	Lo	()	6	2	0	0	0	0			
	•				-						
		-	а	b	С	d	е	f	g	h	
PAPER	Hi	(2)	3	/	2	0	0	0			
PRODUCTS	Lo	(.)	ک	0	0	1	0	0		_	
			* .								
- -		·	a	b	C	d	е	f	g	h	i
PRIMARY		(2)	3	0	ے ا	0	0	O			
METALS	Lo	(1)	2	2	0		0	0			
6		,						,			
9			a	b	C.	d	е	f	ġ	h	i
FABRICATED METALS	Hi		3	0	1	0	/	0			
	Lo	()	3	/	/	0	0	0			
•											-
			a ·	b	С	d	е	f	g	h	i
MACHINERY MANUFACT.	Hi		4.	4	0	0	0	0			
MINIMULAGI.	Lo	(1)	6	5	0	0	0	0	<u> </u>		

,											
			А	В	C	D	E	F	G	Н	
	Hi	(2)	6	31	32	3	6	11	37	2	
OVERALL	Lo	(1)	2	32	37	7	6	14	34	2_	
			ļ. 	·			L	·			
	•		a	Ь	С	d	е	f	g	h.	
FOOD &	Hi	(2)	0	3	3	0	0	2	4	0	
KINDRED PRODUCTS	Lo	()	0	3	3	0	0	2	4	D	
						•					
			à	b	С	d	е	f	g	h	i
WOOD	Hi	(2)	0	3	سی	/	1	/	7	0	
PRODUCTS	Lo	()	0	5	5	2	0	2.	5	/	
										•	
			G	р	С	d	е	f	g	h	i
PAPER	<u> </u>	(2)	/	5	6	/	_ج	4	7	/	
PRODUCTS	Lo	(1)	/	6	سی	0	2	3	5	/	
		_				-					
•			a	b	С	d	<u>e</u>	f	g	h	
PRIMARY METALS		(2)		5	4	0	_		5	0	
WETRES	Lo	(1)	0	4	[سی		0	/)	2	0	
EARDICATER		(0)	a	b	C	<u>d</u>	<u>e</u>	f	<u>g</u>	<u>h</u>	
FABRICATED METALS	Hi (<u>سی</u>	5	0	2	0	7	0	
		1/		<u> </u>	9 1	/	<u></u>]	1			
		Г		<u>.</u>)-	ا ل		<u> </u>			 1
MACHINERY	<u>ы:</u>	(2)	3	b	C	d	e	f	$\frac{g}{7}$	<u>h </u> /	
MANUFACT.		(1)	0	10	8	3	2	2	7	0	
	ـــــــــــــــــــــــــــــــــــــــ	, , ,				<u> </u>			للسند		

		Yes	No	Other	
OVERALL	Hi. (2)	10	30	2 (non-re	parae)
	Lo (1)	9	33	0	
					•
	1		1 ,		Ì
FOOD &	11: (2)	Yes	No	Other	
KINDRED	Hi (2)		3	0	
PRODUCTS	Lo (1)	0	4	0	
			-		
	1	Yes	No	Other	
WOOD	Hi (2)	/	7	0	
PRODUCTS	Lo (1)	3	5	0	
	Branches Admin Landen and St. St. St. St. St. St. St. St. St. St.	·	<u> </u>		3
	ş	·			ì
	, — — — — — — — — — — — — — — — — — — —	Yes	No	Other	
PAPER	Hi (2)	5	2		
PRODUCTS	Lo (1)		6	0	
•		Yes	No	Other	
PRIMARY	Hi (2)	/	4	0	
METALS	Lo (I)	2	3	0	
	<u> </u>		· · · · · · · · ·	·	
		Yes	No	Other	
FABRICATED METALS	Hi (2)	0	7	0	
	Lo (1)	1/	6	0	
1					
	ſ	Yes	No	Other	
: MACHINERY	Hi (2)	2	7	2	
MANUFACT.	Lo (I)	_ <u></u> 	9	0	
1					

T.		Δ	В	C	D	E	F	G	H	
	Hi (2)	19	22	6	21	4	4	2/	10	3
OVERALL	Lo (1)	15	18	3	19	7	6	18	10	0
						<u></u>		·	·	
•		а	b	С	d	е	f	g	h	
FOOD &	Hi (2)	7	1	0	7	0	0	/		0
KINDRED PRODUCTS	Lo (1)	1	2	0	2_	0	0	7	0	0
111000013		<u>;</u>						<u> </u>	L(
		а	b	С	d	е	f	g	h l	
WOOD	Hi (2)	2	7	0	2	0	0	2		0
PRODUCTS	Lo (1)	4	2	/	3	2_	/	3	3	0
		<u> </u>	<u> </u>		<u></u> (·		L		
	-	а	b	С	d	е	f	g	h	
PAPER	Hi (2)	4	5	2	3	0	/	اسی.	/	ラー
PRODUCTS	Lo (1)	4	3	0	3	/	1	4	1	0
			·						•	
		a a	b	С	d	е	f	g	h l	i
PRIMARY	Hi (2)	3	4	1	4	2_	2	4	2	
METALS	Lo (I)	/	3	1	3	/	1	/	/	\Box
		-								
,		a	Ь	С	d	е	f	g	h	i
FABRICATED	Hi (2)	5	7	/	5	0	0	5	3	0
METALS	Lo (1)	2	2_	/	3	/	/	3	2	0
		٠.	-							
		а	b	С	d]	е	f	g	h	i
MACHINERY	Hi (2)	4	4	2	6	2_	/	4	2	2
MANUFACT.	Lo (I)	3	6	0	ای	2	2	6	3	0

	,	Yes	-No	Other
OVERALL	Hi (2)	30	11	1 (no response)
	Lo (1)			1 (no response)

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ΞD
CTS

	Yes	No	Other
Hi (2)	3	/	U
"Lo (I)	4	0	0

WOOD PRODUCTS

. \	Yes	Νο	Oiher
Hi (2)	2	6	0
Lo (1)	5	3	0

PAPER PRODUCTS

	Yes	No	Other
Hi (2)	2	0	0
Lo (I)	5	2	0

PRIMARY METALS

	Yes	No	Other
Hi (2)	3	2	0
Lo (1)	3	2	0

FABRICATED METALS

	Yes	Ио	Other
Hi (2)	6	1	0
-Lo (1)	3	4	. 0

MACHINERY MANUFACT.

	Yes	Ио	Other
Hi (2)	9	/	/
Lo (1)	5	5	1

		Yes	No	Other	
OVERALL	Hi (2)	25	16	1 (no rup	mee,
	Lo (1)	20	21	1 (no resis	mee
				,	
		Yes	No	Other	
FOOD & KINDRED	Hi (2)	3	/	0	
PRODUCTS	Lo (I)		3	0	
	, , , , , , , , , , , , , , , , , , , 	· · · · · · · · · · · · · · · · · · ·		î . V	
		Yes	No	Other	
WOOD	Hi (2)	2	6	0	,
PRODUCTS	Lo (1)	5	7	0	
•					
		Yes	No	Other	
PAPER	Hi (2)	7	0	0	
PRODUCTS	Lo (1)	ک	2	0	
		•			
		Yes	No	Other	
PRIMARY	Hi (2)	4	1	0	
METALS	Lo (I)	3	2	0	
		Yes	No	Other	
FABRICATED METALS	Hi (2)	4	3	0	:
	Lo (1).	4	3	0	

MACHINERY
MANUFACT.

	Yes	140	Other
Hi (2)	ح	5	1
Lo(1)	2	8	/

OVERALL

	Yes	No	Other	
Hi (2)	24	8	10 (no vego	رميه
Lo (1)			18 (no resp.	

FOOD & KINDRED PRODUCTS

	Yes	Νo	Other
Hi (2)	3	1	0
Lo (I)	1	0	3

WOOD PRODUCTS

	Yes	No	Other
Hi (2)	2	3	3
Lo (1)	سی	0	3

PAPER PRODUCTS

	Yes	No	Other
Hi:(2)	6	1	0
Lo (I)	5	1	1

PRIMARY METALS

	Yes	No	Other	
Hi (2)	حی	0	D	
Lo(1)	3	0	2_	

FABRICATED METALS

	Yes	No	Other
Hi (2)	- 3	1	3
Lo (1)	3	1	3

MACHINERY MANUFACT.

	Yes	No	Other
Hi (2)	5	2	4
Lo(I)	2	7	6

		Д	В	C	D	I.E.	F	G	Н	
:	Hi (2)	5"	10	13	7	می	2			: 1
OVERALL	Lo (1)	1	11	9	12	3	5			
								 -	·	
		a	b	С	d	e	f	g	l h	
FOOD &	Hi (2)	0	1	2	0	0.	0			
KINDRED PRODUCTS	Lo (1)	1	1	1	/	0	0		<u> </u>	
	<u> </u>	· ·	'	<u></u>	<u> </u>		! 			
	,	а	Ь	C	d	е	f	g	h	
WOOD	Hi (2)	7	2	3	0	1	0	<u> </u>	<u></u>	
PRODUCTS	Lo (1)	0	1	3	3	0				
		·		لستسا				·	<u> </u>	·
			l _h					1 0	<u> </u>	· · ·
01050	Hi (2).	<u>a</u>	b 0	<u>C</u>	d_	e 2	f	g	<u> </u>	
PAPER PRODUCTS	Lo (1)	0	2	2_	1	2	2			
	<u></u>)		-	لــــــــــــــــــــــــــــــــــــ		~			
	ı		 -	,				, .		
		а	b	C-	d	e	f	g	h	i
PRIMARY METALS	Hi (2)	2	/			0	0			
METALS.	Lo (1)	0	2.	/	0	/			`	
								_		,
		a.	b	Ċ_	d.	е	f	g	h	İ
FABRICATED METALS	Hi (2)	/	3	2	/	0	0			
MLIMES	Lo (1)	0	/	/	5	0	0			
										-
		а	b	С	d 🤄	е	f.	g	h	i
MACHINERY	Hi (2)	0	2	3	4	0	/			
MANUFACT.	Lo (1)	0	4	1	2	2	/	1		

The second second	, .									
		.Д	. B	- C	.D	E	F.	l G	H	
	Hi (2)	0	3	13	12	9	حی	0		
OVERALL	Lo (1)	0	6	4	12	12	6	1		
			· · · · ·							
		a	Ь	С	d	е	f	g	h	i
FOOD &	Hi (2)	0	0	2	1	0	0	0		
KINDRED PRODUCTS	Lo (1.)	0	1	1	1	1	0	U		
		•					,		,	
		а	b	С	d	е	f	g	h	i
WOOD +	Hi (2):	0	1	0	2	5/	0	0		
PRODUCTS	Lo.(1)	0	/	U	2	2	3	0		
•		·		<u> </u>				·	·	
4 9.0	•.•						<u> </u>		<u> </u>	· · ·
	H: (2)	a.	b	C	a	e	+	g	h i	
PAPER PRODUCTS	Hi (2)	0	10	2	2	0 7	2	S		
	[[[]]		0		,	7		<u> </u>		
			· · · · · · · · · · · · · · · · · · ·	,		· 				
		а	Ь	С	d	е	f	g	<u>h</u>	_i_
PRIMARY -	Hi (2)	U	1	2	2	0	0	0		
METALS	Lo (1).	0	1.	0	. /	_2_	1	٥		
				·						
		a.	b	- C	d	e	f	g	h	i
FABRICATED	Hi (2)	0	Q	3	2	2	Ó			
METALS	Lo (1)	0	٦	0	3	1	/	0		
e e e e e e e e e e e e e e e e e e e		а	Ь	С	d	е	f.	g	h	il
MACHINERY	Hi (2)	. 0	0	4	3	3	/	٥		
MANUFACT.	Lo (1)	0		1	4	2	./	. /		

QUESTION No. 66.

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The same of the sa	· .	<u> </u>	B	C	<u>D</u>	JE.	F	<u>G</u>	<u> H</u>	
F.	Hi (2)	0	1	7	2/	13				
OVERALL	Lo (1)	0	1	4	16	17		1		
S. Commission of the Commissio	<u> </u>		<u> </u>	1 ′	1	1 7	<u> </u>	<u> </u>	<u> </u>	<u> </u>
					•					-
1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -		а	b	С	d	e	f	g	h	j
FOOD & KINDRED	Hi (2)	0	0	/	2	12		ļ		
PRODUCTS	Lo (1)	0	0	0	2	2			<u> </u>	
		•			•	,				
17 mg 1	e e e e	a	b	С	ď	е	f	g	l h	
WOOD	Hi (2)	0	1	0	3	4				
PRODUCTS	Lo (1)	0	1	1	2	4				
4. •			,	<u> </u>			····	А.,		ł
1			I. i	1	1 ,	1			· ·	١ ١
	H: (2)	0	b	C	d	e	f	<u>g</u>	h	
PAPER PRODUCTS	Hi (2)	0	0	/	4	2				
	[[0 (1)	1,0		1	2			<u></u>		<u></u>
		а	b	С	d	e	f	g	h	i
PRIMARY	Hi (2)	0	0	3	2	0				
METALS	Lo (1)	0	0	0	4	/				
· · · · · · · · · · · · · · · · · · ·	,	**	•			, .				÷
		a	Ь	С	d	е	f	g	h	;
FABRICATED	Hi (2)	0	0	0	6	1		- J		
METALS .	Lo (1)	0	0	/	2	3			<u>'</u>	
A 1							-	I		
			la.	<u> </u>	ا ر	- 1	r I		<u>L</u> 1	1
MACHINERY `		<u> a</u>	<u>b</u>	C	d	e	f	g	h	
MANUFACT.	Hi (2)	0	0	2	4	5	. [
•		10	0		4					

QUESTION No. 67 .

;		Α	В	С	D	E	F	G	H	
	Hi (2)	/	12	29	0	0	D			
OVERALL	Lo(I)	0	13	28	1	0	0			
*	L]	l		ـــــا	<u>. </u>	J	l. <u></u>	l	<u></u>
						· 			,	
		a	<u>b</u>	С	d	е	<u>f</u>	g	h.	
FOOD & KINDRED	Hi (2)	0	0	4	0	0	0		<u> </u>	
PRODUCTS	Lo (I)	0	2	2	0	U	0		<u> </u>	
					ı			-	A.i	
		q	b	С	d	е	f	g ·	h	i
WOOD	Hi (2)	0	3	5	0	0	0			
PRODUCTS	Lo (1)	0	3	5	0	U	0			-
** .										
			Ь		d		f	П	h	
PAPER	Hi (2)	0	/	. C	0	e	{ -	<u>g</u>	h	
PRODUCTS	Lo (1)	0	0	6	0	0	0			
	20 (17			لــــــــا	0			L		
			·							
		а	b	С	d	e	f	g	h	i
PRIMARY	Hi (2)	1	3	/	0	0	0			
METALS	Lo (1)	0	3	2	0	0	0		<u>. </u>	
•		•								
		а	b	С	d	е	f	ğ	h	i
FABRICATED	Hi (2)	0	3	4	0	O	O			
METALS	Lo (1)	0	2	5	0	0	0			
		a	b	С	d l	е	f	g	h	i
MACHINERY	Hi (2)	0	2	9	Ö	0	0		<u> </u>	<u> </u>
MANUFACT.	Lo (1)	0	3	7	7	0	Ü			

	•									,	
		P=/u	Α	В	C	D	E	F	G	Н	
	Hi	(2)	0	7	15	11	6	/	1	/	0
OVERALL	Lo	(1)	0	5	13	8	9	2	1	0	0
(数)		Tilly William William William								,	
	• • • •		a.	b	С	d	е	f	g	h	i
FOOD & KINDRED	Hi	(2)	0	2	/	_	0	0	0	0	0
PRODUCTS	LO	(1)	0	0	0	2_	ے	0	0	0	0
											,
	<u> </u>		а	b	С	d	е	f	g	<u>h</u>	i
WOOD PRODUCTS	Hi	(2)	0	/_	2	ح	2	/	0	0	4
* NOBOC.13	Lo	()	0	2	2_	2	0	/_	0	0.	0
											
		<u> </u>	a	b	С	ď	e	f	g	<u>h</u>	
PAPER PRODUCTS	Hi	(2)	0	2	ے	-2		0	0	0	4
	Lo	(1)	0		41		0	0	0	0	0
			,	,	- :						····
			·a	<u>b</u>	С	<u>d</u>	e	f	g	h	
PRIMARY METALS	Hi	(2)	0	0	3	2	0	0	0	0	_
METALO	Lo	(1)	0	0					0	0	ا٥
		_								_	
			а	Ь	С	d	е	f	g	h	
FABRICATED METALS	Hi		0	/	4	1	/	0	0	0	4
	Lo	(1)	0	0	3		2	0	0	0	0
						····					
			0	b	С	d	е	f	g	h	<u>i</u>
MACHINERY MANUFACT.	Hi		0	1	3	3	2	0	/	<u>/</u>	0
	LO	(1)	0	2	3	1	4	0		0	0