AN ANALYSIS OF ACCIDENTAL INJURIES IN RESIDENCE HALL FOOD SERVICE UNITS AT MICHIGAN STATE UNIVERSITY

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Sister Mary Rosita Schiller, R. S. M.

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ABSTRACT

AN ANALYSIS OF ACCIDENTAL INJURIES IN
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AT MICHIGAN STATE UNIVERSITY

by Sister Mary Rosita Schiller, R.S.M.

The purpose of this study was to elucidate some primary factors of accidental injury occurring in Michigan State University residence hall food service units which could help determine types of programs best suited to decrease the number and severity of food service accidents. Although the food service industry is fourth largest business in the United States, it features an accident frequency rate which is three times greater than the all-industry average. The human element in job functions precludes total safety performance but 98 per cent of accidents are avoidable and should be prevented for humanitarian and economic reasons.

This study consists of an analysis of 212 accidental injuries sustained during the fiscal years 1963-64 and 1964-65 in four residence halls at Michigan State University: Shaw, Brody Group, Snyder-Phillips, and Mason-Abbot Halls. Data were derived from the "Supervisor's Field Report of Claimed Accidental Injury" form which managers file at the office of the safety engineer at the time of the accidental

injury. Data processing summaries compiled from these reports and the log of treatments at Olin Health Center were also sources of information. Factors of accidents which were considered in this study were basic causes of accidents, accident types, agencies of accidents, injury types, part of body injured and the time of day when the accident occurred. Factors relating to the persons sustaining injury included age and sex, job title, employment status and tenure.

Among the important findings were the following:

* The most frequently reported causes of accidental injury were the failure of employees to follow rules, regulations or instructions; mental attitude, improper use of tools or equipment; and improper design, construction or layout of the food service facility.

* Faulty handling of objects, especially cooking, baking and food heating equipment, were the most frequently occurring type and agency of accidents.

* Bruises, burns, and cuts were the types of injuries observed most frequently. Injury was inflicted to fingers, hands and arms in two-thirds of the cases.

* Young men between the ages of 18 and 25 sustained more accidents than females of any age; females between the ages of 36 and 60 sustained four times as many accidents as males of these same ages.

* Employees of both sexes experienced more accidents during the first five years of employment.

* Males employed as dishwashers, scrubbers, bus boys, etc. sustained slightly more injuries than females employed in cafeteria service and general kitchen duty; these combined groups accounted for 52 per cent of reported accidents. Cooks and bakers experienced a somewhat lower percentage of accidents (15%).

Students encounter fewer accident situations than full time employees on the basis of man hours worked even though more accidents occurred during meal service hours when part-time student employees were usually scheduled.

It is suggested that an awareness of multidimensional accident factors could stimulate deep concern on the part of all unit managers who would then cooperate more fully in safety programs which are conducted in an effort to reduce situations which predispose a person to accident occurrence.

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By

Sister Mary Rosita Schiller, R.S.M.

A PROBLEM

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INTRODUCTION

The marked upward trend in liability insurance and compensable accident cases has caused management to focus greater attention on accident prevention programs. Accidents may be of a variety of types but basically they are, either directly or indirectly, the product of human failure. Most common causes are not the obvious "dangerous situations" or powerful machines but rather, ordinary situations such as falling, stumbling, or faulty handling of objects.

Heinrich (19) has noted that 98 per cent of all accidents are preventable. The sustaining circumstances can be reduced to two: an unsafe act of a person and the existence of a mechanical or physical hazard. Total accident patterns seem to develop into a ratio of 1:20:200; for every fatal injury there are 20 disabling injury accidents and 200 dangerous incidents which do not cause disabling injury (2). Safety programs aim to discover and prevent those 200 "near accidents" which could become the cause of injury or even fatality.

Commercial food service has grown to the fourth largest industry in the United States. There is no evidence that safety programs have been developed within the industry

at this same rapid rate. Circumstances of injury and non-injury accidents must first be identified for the food service industry before purposeful accident prevention programs can be initiated.

On the Michigan State University East Lansing campus 50 per cent of the accidental injuries which were reported during the calendar year 1963-64 occurred in the food service division. This figure is of great significance since only 18 per cent of the full time nonprofessional employees were engaged in food services. An elucidation of primary factors which could help determine types of programs aimed at decreasing the number and severity of food service accidents would be of value to residence hall managers.

The aim of this study is to identify and record in rank order of frequency the direct tangible factors of accidents in selected food service facilities at Michigan State University for a period of two fiscal years: 1963-64 and 1964-65. Data collected will be developed into a cumulative circumstantial record of accidental injuries which could be useful as a point of departure in planning accident control programs.

REVIEW OF ACCIDENT FACTS

Employment which entails manual labor necessarily involves the possibility of accidents. The industrialization of work and present trend toward automation in every technological area have reduced the elements of human mishaps in work situations. Concurrently, employers have become responsible for the acts of employees, both safe and negligible, under Workmen's Compensation. As wages, employee benefits, costs of health care programs and insurance premiums increase, effective accident control programs aimed at limiting the losses due to preventable accidents should be developed by the food service industry.

Many accidents which occur are the result of an increasing attitude of independency depicted by the spirit of daring, disregard for company and safety rules, and the attitude that, since humans are involved, accidents must happen.

How Accidents Are Recorded

Accidents are defined here as any unforeseen incident which may cause property damage and/or personal injury and disrupt the general flow of work or production. Some accidents may cause serious injury or destruction of valuable

equipment while others are quite minor. Hence, pure numerical recordings are of limited value when accident experience is evaluated.

Accurate measurement tools used for comparative accident studies are frequency and severity rates. Such measures provide a uniform means by which industry can develop its own goals for the desired level of achievement, establish criteria for self-evaluation, note progress in accident control, make comparisons with other industries or other departments, and provide some detail for the gravity of accidents.

Frequency rate is expressed as the number of disabling or lost time injuries experienced per million man hours worked. The severity rate indicates the number of working days lost because of disabling injury per million man hours worked.

Frequency rates in various industries indicate that the rates correlate more with safety efforts of the firm or industry than with the natural hazards inherent in the activities. The Bureau of Labor statistics show that the accident frequency rate for the food industry is 17.8. The comparable figure for the steel industry is 3.5; for the chemical industry, 8.0; and for the automobile industry, 4.0 (33).

In a study of over 3,000 food service establishments, the Bureau of Labor found that in one year the average frequency rate was 18 (28). A survey of 130 members of the American Restaurant Association confirmed the average frequency rate to be 17 (28). This average, consistently high in each instance, is three times greater than the all-industry average.

Not all accidents entail injury nor are all sustained injuries of the same magnitude. A division is made to differentiate the various degrees of cases:

Lost time - Those accidents which are serious enough to prevent the injured worker from performing a regularly scheduled job the following day.

Doctor's - Those injuries which are serious enough to require a doctor's attention but permit the employee to remain on duty.

First aid - Sustained injuries not serious enough to require the attention of a physician.

No injury - Accidents which might have caused personal injury but did not, but which did cause $20.00 or more property damage or loss of 8 or more man hours.[1]

Only those cases which are recorded as lost time cases are considered in severity rates. Accordingly, frequency rates give a more accurate index of accident experience than do severity rates and are used as the primary indicator of safety status.

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[1] R. Simonds, "The Cost and Control of Accidents," Journal of The American Dietetic Association, XLII (June, 1963), 496-501.

Accident Losses

The most important reason for limiting frequency rates is a humanitarian one: the prevention of human injuries. Concern is placed, first of all, with the immediate suffering of the one hurt, and especially so if there is permanent impairment or death. The economic effects to the person and his family in terms of lost earnings and insufficient compensation are also to be noted. Of interest in the business aspect is the direct cost of accidents and the influence of safety on employee morale and efficiency.

Accident losses are borne both by the individual and the industry. Frequently only the monetary value of accidents is pointed out while, in fact, many disastrous results cannot be measured in financial terms. No cash settlement can repay for the loss of a loved one through a fatal accident, comfort a person suffering pain from a sustained injury, make replacement for a lost limb or provide satisfaction during permanent disability. Nor can a financial adjustment buy a good reputation for a safe plant having a safe environment which is publicly recognized, or substitute for low morale due to lack of personal interest on the part of management.

Costs of accidents are tangible; therefore, these statistics make a greater impression. Simonds (34) found that the elucidation of costs, both direct and indirect, was

the primary factor in convincing management of the need for a safety program. The current total annual cost of accidents in the United States is over $5 billion, almost half of which is borne by industry.

Many food service organizations do not keep records of the actual frequency rates or costs of accidents. To make a valid estimation of costs, Simonds (34) has developed a formula which was subsequently accepted and recognized by the National Safety Council in 1954. The estimated total cost of accidents may be calculated by adding known insurance costs and the costs of lost time, doctor's, first aid, and no injury accidents.

Insurance and compensation costs are readily available; uninsured costs are often hidden and may derive from several sources (33, 34).

* Costs of wages paid for working time lost by workers who were not injured.

* Net cost to repair or replace material or equipment damaged or disarrayed in an accident.

* Wages paid for working time lost by injured workers other than Workmen's Compensation payments. For example, many institutions pay wages for time lost by an injured worker during the waiting period of one to four days, depending on the state, before Workmen's Compensation payments begin. Also, an injured worker is usually paid for the balance of the day in which he was injured.

* Extra cost due to overtime necessitated by an accident.

* Wage cost of supervisor's time required to rectify the accident.

* Wage cost due to decreased output of injured worker after return to work.

* Cost of the learning period of new worker, when the injury required employing either a new employee or shifting a worker to an unfamiliar job.

* Uninsured medical costs borne by the employer.

* Administrative costs for investigating and processing forms in Workmen's Compensation payment cases.

* Miscellaneous unusual costs which occur in less than 2 per cent of accidents.

Through several samples of accidents Simonds (33) arrived at an average indirect cost of industrial accidents for each of the severity classifications:

Lost time cases	$ 130.00
Doctor's cases	35.00
First aid	7.00
No injury cases	290.00

This estimation of accident costs provides a foundation on which to base a financial motivation for an accident control program.

Role of Management Team in Accident Control

Each of the levels comprising the management team has a degree of responsibility for safety of the personnel. An institution in which safety practices are enforced tends to have higher morale since the employee feels the concern of management for his personal worth. Management, being

primarily concerned with plant organization and operation, must provide a safe working environment for its employees. Indifference on the management level, along with reluctance of employees to believe that most accidents are preventable, have delayed the necessary advancement of safety education (4). Some managers believe that accidents "have to happen" and are due to bad luck. However, Heinrich's theory advocates that 98 per cent of all accidents are preventable and only 2 per cent are "acts of God," and therefore unpreventable (19). Further, the majority of preventable accidents are due to the unsafe acts of humans rather than faulty design in construction or machinery.

Though safety, or the lack of it, is the product of personal activity of the employee, four basic positions in the organizational structure establish the framework for safety function in an institution: Top Management, Safety Director, Department Heads, and Safety Committee (30). In general, accident prevention depends on recognizing known accident-causing factors. The immediate supervisor can control men, machines, and work conditions daily; therefore he, rather than the safety engineer, is in a better position to take direct action. The manager who associates most accidents with proneness, psychosis, alcoholism and childhood background fails to accept his personal role in safety management which entails safety awareness and safety performance of the supervisors who are in turn responsible for

unsafe acts of employees and unsafe conditions in the physical plant (14).

When specific duties for each organizational element are clearly outlined they establish both line and staff responsibilities for safety as described below.

Top Management

Management declares its intent, designs the basic frame of action, sets limitations of authority, establishes goals or final objectives, appoints a responsible person to lead and guide the effort and allocates sufficient time for promotional activities.

Safety Director

The Safety Director is management's representative in all safety activities. He develops, implements, and administers the complete safety program in accordance with management's policy. The Safety Director's duties include the following (30):

* Provide the leadership and stimulation necessary to assure and maintain full employee interest and participation.
* Become familiar with the total plant operation to the degree that unsafe conditions can be recognized, discussed and corrected.
* Organize and maintain membership in a Safety Committee composed of department heads or line managers.
* Encourage and coordinate safety training activities for employees.

* Establish procedures for the completion and handling of accident reports.

* Maintain records on insurance data, Workmen's Compensation claims, and medical records of employees treated for accidental injuries.

* Review and select applicable safety materials for display or distribution.

* Apprise management of the development and progress of the Safety Program.

Department Heads

The Department Heads or line managers must assume the primary responsibility for making safety personalized among employees (11). The supervisor is the catalyst who makes work areas safe and creates a safe atmosphere for people who work with him. He establishes safe procedures, instructs employees in the use of procedures, investigates and reports all accidents.

Safety Committee

To assist the supervisor in the major task of accident prevention the establishment of a formal Safety Committee is the cheapest and most effective tool. Safety Committees were first advocated in 1913 as a counterstep to costly Workman's Compensations in New York State. At that time the compensations were applicable to only 12 dangerous occupations.

The Safety Committee acts directly to control employee injuries. Membership to the Safety Committee should be selected from the department head or supervisory level. The Committee should take an active part in promoting safety rules, reviewing accident reports and taking appropriate action, and assisting with safety training activities for employees.

Stallcup (35) has combined the functions of Safety Director, Department Heads, and the Safety Committee in a unique unconventional safety program which is meant to appeal to unconscious psychological factors in accident occurrence. The program is initiated in three phases. During the initial phase concentration is focused on overt themes: machines made safe, safety incentives, posters, and safety prevention programs. This first step is aimed at eliminating the two requirements for an accident, that is, (1) means of injury and (2) random stimulation from the environment such as the example or distraction of a fellow employee, supervision or faulty machinery. Both management and employees are made aware of safety goals, and motivational stimuli are activated. The management team participates in an intense workshop series concentrating on human relations and psychology. During the second phase stress is placed on the role of the supervisors in creating an appropriate atmosphere and satisfying the psychological needs of employees. Actually, this is an application of ideas and

methods taught during the first phase of the workshop for managers. The third phase consists of the removal of all safety posters and incentives since these tend to act as accident stimuli by drawing attention to the point of safety. There are no "do's and don'ts," but each supervisor continues attendance at the workshops and takes a positive, personalized and personnel-centered approach to safety. He simply expects good performance and gets it!

Primary Causes of Accidents

Simonds (33) points out three factors which have a negative influence on safety:

* The worker does not understand his job or his talents are inadequate for the position assigned to him.
* Employee works in an atmosphere of apprehension. This may be a temporary situation following a reprimand or other stress condition.
* The worker harbors a dislike for his job, his company or his supervisor.

A supervisor can reduce accidents markedly by establishing an atmosphere in which an employee feels confident, is accepted, complimented, and made to understand that his supervisor is interested in him.

To the psychiatrist no mishap is an accident unless it can be ascribed to purely mechanical causes, such as the malfunctioning of a machine. Stallcup (35) maintains that an individual frequently hurts himself deliberately. The

desire for self-inflicted pain may result from an employee's frustration, or his way of adjusting to it, which involves self-punishment, attention seeking, or venting resentment toward authority.

In a clinical study of 400 accidents Hersey (20) found that more than half took place when the worker was worried, apprehensive or in some other low emotional status. Satisfaction of individual goals such as personal freedom, economic status, prestige and extra privileges help to determine psychological climate. Thwarting of these goals is the basic cause for 30-40 per cent of accidents.

Credit problems also appear to have a marked effect on safety behavior (38). Employees who were involved in difficult credit situations were shown to have had 51.7 per cent more accident-connected medical visits than others who were free from these concerns. It was also noted that the highly educated tend to have more accidents than those who meet minimum educational requirements for specified jobs. Over-education may result in a mixture of boredom, apathy, and frustration which tends to reduce safety awareness.

Two aspects of work environment which encourage safe behavior are the probability of job promotion and a comfortable shop (24). Operations which require greater manual effort and in which a crew works as a unit show more frequent accidents. The presence of an obvious danger coincides with greater accident occurrence, but the accidents

do not necessarily involve the safety hazard. This enigma may result from the unconscious feeling that management allows unsafe conditions; the employee is extremely careful to avoid the hazard itself but tends to be less aware of safety procedures in other work situations. Job prestige, incentive programs, and the degree of operational congestion have no apparent effect on accident occurrence. External pressure from deadlines or a backlog of work may or may not have a significant effect on accident occurrence.

An increasing amount of stress is being placed on the psychological work climate as a preventive factor in safety. In this age of personal striving for greater independence and recognition of personal needs and goals, the supervisor's leadership role accents employee involvement. Significant employee participation in safety programs or other administrative decisions develops habits of awareness, problem raising and problem solving. The psychological work environment must reward the employee emotionally for being alert.

Why do food service employees in particular sustain accidents at a high frequency rate? Several suggestions, undocumented but implied in the above studies, present themselves:

* Preoccupation of managers and supervisors with other tasks to the exclusion of safety.

* Failure of the supervisor to provide adequate instruction and training.

* Rapid employee turnover thus demanding more attention to continual training of new employees.
* High ratio of unskilled or mentally deficient employees.
* On campus, students who are over-educated for routine jobs.
* The persisting attitude that food service jobs are degrading and have low possibility for promotion within the industry.
* Low minimal wage scales for food service workers and the possibility of consequent credit problems.

Factors in Accident Occurrence

Statistical chance determines to some extent the occurrence of some factors in the accident phenomenon. Simply because a man works during the month of July he is more likely to have an accident than during February (32). There also appears to be a certain chain reaction which predisposes employees to have one accident following another. This may be due to the emphasis placed on accidents, or an unsafe condition, resulting in a disturbed state of mind and consequent accident occurrence.

Type of Accident

The accident type is the manner of contact of the injured person with an object or substance; or the exposure, or the movement of the injured person which results in an injury. A recent study of accidents among food service employees in Illinois indicated that slips and falls were

by far the costliest types of mishaps (15). Fifty-seven per cent of the food service accidents resulted from slipping, falling and tripping, costing almost $100,000 in compensations.

In a 1950 analysis of accidents by the New York Hotel Association, falls accounted for the greatest number of accidents and were responsible for 31 per cent of the total (4).

Type of Injury

In hotel kitchens and restaurants strains, bumps, bruises, cuts, and burns were found to constitute the most frequent accident categories (4). This finding is supported by data from 4,442 hospital food services (21) in which prominent injuries ranked in the following order:

Strains and Sprains	593
Bruises and Contusions	572
Cuts and Lacerations	539
Scalds and Burns	447
Fractures	282

Age and Sex

On a percentage basis young males have twice as many accidents as females (32). The most vulnerable ages for temporary disablement is 18-22 years for males and 40-50 years for females. Fatalities and permanent disability are

more likely to occur among persons of either sex over 58 years of age.

Work Experience

The greatest number of accidents occur during the first year of employment (32). These injuries are minor, however, as the greatest number of lost time accidents and lost time days occur in the 1-5 year work experience groups.

In studying the effects of age and work experience upon accident rate VanZelst (36) indicated that experience exerts a significant effect only during the first five months on a job. During this time the worker becomes familiar with proper work and safety habits. Those employees who are given specific orientation training show a leveling off in accidents at three months, and the future accident frequency rate achieved is lower than those who have been given no training. With a mean experience of 3.2 years, younger male workers (mean age 28 years) had fewer accidents than older men (mean age 41.1 years). However, older men with no previous experience who were trained when hired showed a lower accident rate than the younger group who had experience. Age apparently exerts a greater influence upon accident rate than does experience once the initial training is completed. There is also the variable of dismissing those employees who have a greater number of accidents so that, as a group, employees with tenure show a lower incidence rate.

Time Factor

In industry more accidents occur between the hours of 10:00 - 11:00 A.M. and between 2:00 - 3:00 P.M. than at other times during the day (32). In the food service industry this may not always be true because of heightened activity and stress directly before and during the actual service of meals.

Accident Repeaters

Accident proneness is largely a statistical artifact and not a major safety problem. Mere statistical probability allows for some to have no accidents, others to have one, two, three or more. Kirchner (27) found that when studies are extended over a long period of time accidents are not attributed to the same group of employees. When an unequal distribution of accidents is observed, variations are due to unequal liability on the basis of age, sex, states of physical or psychological stress, chronic accident proneness and chance. Schulzinger (32) made this conclusion after a 20 year study of 35,000 industrial and nonindustrial injury cases. This theory is supported by documented evidence of greater injuries for persons in specific age and sex groups; other predisposing factors being work experience and the influence of supervision.

Ahern (6) makes a distinction between accident repeaters and accident-prone individuals. Employees who possess physical and temporary emotional problems leading to accident recurrence are classified as "repeaters." One who is accident prone is a psychological accident repeater. In the first instance, accident series are limited in duration and cease once the individual solves or at least adjusts to his problem. A psychological repeater has had emotional difficulties during childhood and adolescence which are carried into adult life. He resents authority, has a fatalistic attitude and believes accidents "have to happen." All of these qualities are contributory in creating an atmosphere for unsafe behavior.

Kerr (26) maintains that if proneness does exist such tendency may be a group psychological phenomenon as well as an individual one. Specific departments have numerous accident prone individuals while others have none. In a comparison between these two types of departments Kerr concluded that accidents occur with greatest frequency in those departments which have lowest intracompany transfer mobility rates, smallest percentage of employees who are female and on salary, least promotion probability for the typical employee, and the highest noise level. High severity departments were heavily male in sex ratio for salary and production personnel; low in mean promotion probability,

low in fertility of suggestion field, low in employee suggestions contributed, high in average employee age levels and higher in average employee tenure. Since both the frequency and severity rates are adversely affected by low promotion probability, it appears that, over a period of time, the typical employee develops an indifferent attitude toward work environment.

If certain personality traits can be directly associated with accident proneness, this correlation can be used as a standard in the selection of job candidates. Jenkins (22) developed a Job Attitudes Survey in which 150 response items measure seven factors in the personality; scores are correlated with safety prediction. These measurable factors of intangible qualities applied to accident repeaters are an answer to the problem of a reliable criterion on which to base rejection or acceptance of the applicant. In summary these seven traits are listed with the way in which they are exhibited in the potential accident repeater.

* Attentiveness - more easily distracted.
* Judiciousness - relatively unaware of the need to act prudently.
* Group dissociative independence - less inclined to accept or comply with rules, standards, and social customs.
* Social sensitivity - feelings and attitudes easily swayed.
* Attitude toward pain - does not mind pain; may get a thrill out of it.

* Self-assurance - thinks complications are unlikely.
* Social orientation - aggressive, self-assertive; not amenable to teamwork.

Variations in accident repetition do exist. Ahern (4) reported a 20 year study in a company which employed 1,050 persons and reported 633 accidents by 364 individuals. Therefore, only 34.6 per cent of the employees reported compensable accidents. Furhter analysis showed that of these, 220 had only one accident and 144 sustained injuries in a range numbering from 2 to 10 each. Only 13.7 per cent of the total payroll accounted for 65 per cent of all accidents.

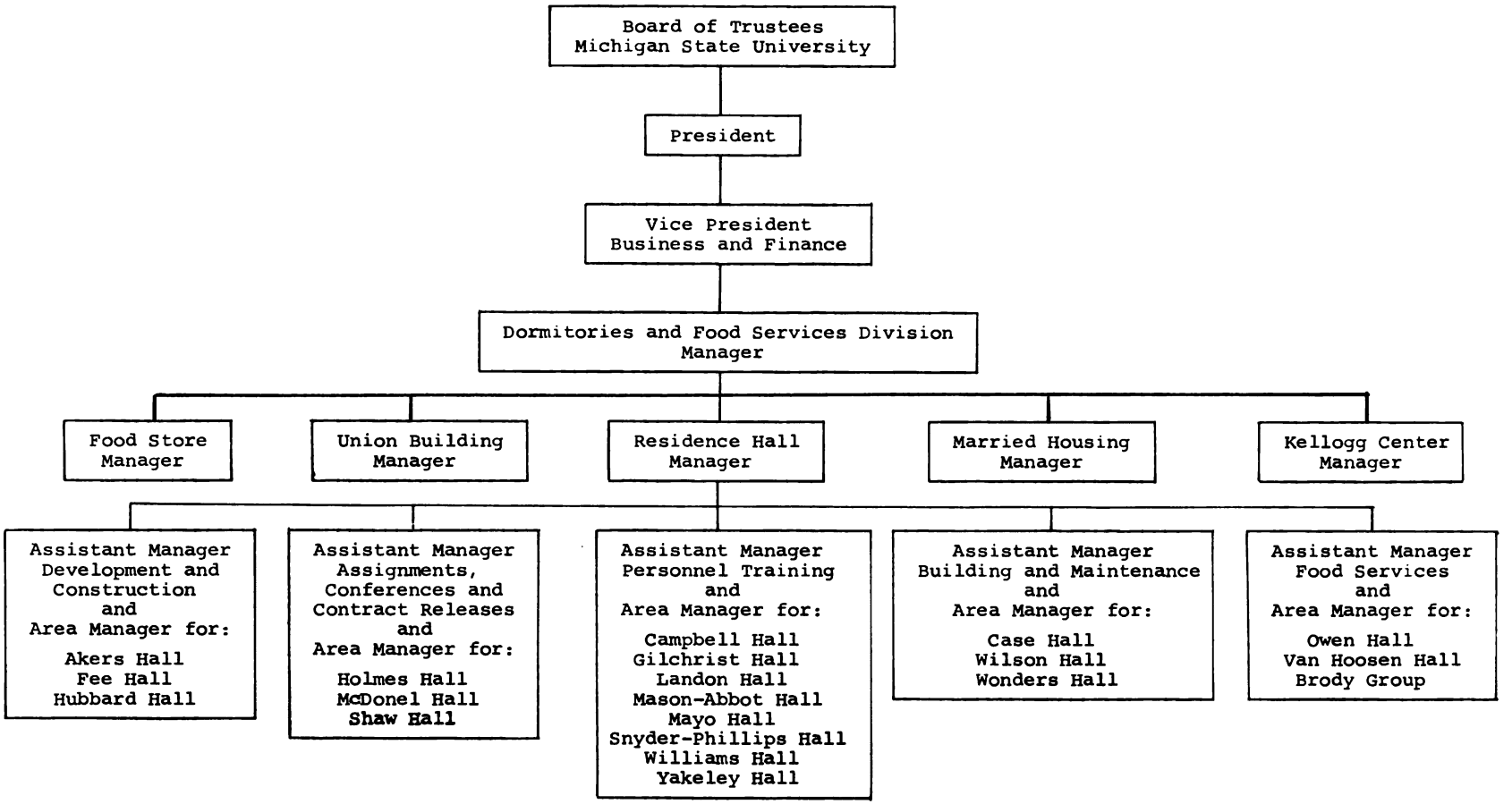
ACCIDENTS IN FOUR RESIDENCE HALL FOOD SERVICE UNITS

Each residence hall at Michigan State University is under the supervision of a unit manager who in turn is responsible to one of the five area managers. Area managers are subordinate to the Residence Hall Manager who is accountable to the Manager of Dormitories and Food Service Division. The Manager of Dormitories and Food Service Division is ultimately responsible for all residence halls and is organizationally subordinate to the Vice President of Business and Finance (see Exhibit 1).

At Michigan State University safety management is centralized in the Department of Public Safety. The Safety Engineer has a staff relationship to residence hall area and unit managers. He maintains records of reported accidents and compensable injuries and cooperates with the residence hall management personnel in accident prevention programs. The Safety Engineer also possesses university staff responsibilities for sanitation, fire prevention, and disaster and radiation safety.

Close cooperation is maintained between the Safety Engineer and the residence hall managers so that proper

EXHIBIT 1. Organization of residence hall department, dormitories and food services division, Michigan State University, East Lansing. Adapted from August, 1966 organization chart.



safety action can be taken and incidence of future accidents decreased. Residence hall unit managers are responsible for filing reports of accidents as they occur in their respective halls. Further records are kept by the Safety Engineer for persons who receive medical attention at Olin Health Center.

On the basis of accident occurrence trends or certain types of personal injury, safety programs are conducted in an effort to reduce accident losses, and consequential severity and frequency rates.

Study Procedure

Four residence hall food service units at Michigan State University were selected for this study: Brody, Mason-Abbot, Shaw and Snyder-Phillips. It was assumed that these would present comparable operational stress since each kitchen is approximately the same in function.

Data for the study were derived from three sources. The printed form used by unit managers to report accidental injuries provided information on age, sex, job title, time of the accident, work status, and term of employment (see Appendix). This Supervisor's Field Report of Claimed Accidental Injury form provides information for tabulation of accident facts by data processing. Print-out sheets were used to collect data showing the department in which the accident occurred, part of body injured, injury type, agency of the accident, accident type, and basic causes of the

accident. Complete data processing summary sheets of accident facts were only available from 1963-1965; consequently this study was limited to that period. Additional and supplemental information was derived from the log of accident cases treated at Olin Health Center.

From these data an attempt was made to construct an accident profile showing conditions in which accidental injury, accompanied by its most frequent characteristics, is most likely to occur in Michigan State University residence hall food service operations. However, the development of an accurate accident profile for food service workers necessarily demands an employment profile for each unit. Several limiting factors were involved in the university residence hall study presented in this paper. The age, sex, employment status, job classification, and tenure for each male and female employee is beyond the scope of this study because such information was not readily available for the food service units studied. Therefore relationships or differences in the incidence of accidents within these groupings cannot be stated authoritatively. Since the sample was restricted to a two year period and because these data are specific to Michigan State University residence hall food service units, these data cannot be used to make valid generalizations.

Analysis and Interpretation of Data

Data for the two fiscal years selected for study, 1963-64 and 1964-65, provided a total of 212 accidental injuries. The breakdown of accidents by residence hall for each year is shown in Exhibit 2.

The selected sample represents 22 per cent of all accidents in the university food service areas and 11 per cent of the total number of employee accidents sustained on the campus during this period.

EXHIBIT 2. Total incidence of accidental injuries for fiscal years 1963-64 and 1964-65 in food service units of four residence halls at Michigan State University

Residence Halls	1963-64	1964-65	Total No.	%
Brody group	29	47	76	35.9
Mason-Abbot	21	38	59	27.8
Shaw	23	16	39	18.4
Snyder-Phillips	20	18	38	17.9
Totals	93	119	212	100.0

Employment Characteristics

The average age of full time food service employees in the Michigan State University residence halls is 50 years. The ages of part time students range from 19 to 24 years.

Female employees account for 80 per cent of the full time work crew and about 60 per cent of the part time student employee force. The numerical ratio of part time students to full time employees is 3:1, though all student employees are not scheduled for work every day. Students are generally scheduled to work 20 hours per week so that two student workers are considered as one full time employee equivalent. For the most part, students are scheduled to work during the meal service periods.

The majority of full time employees have considerable tenure with only 20 per cent of the workers having less than 18 months service. Length of service for student employees varies from an academic term or two to several academic years. Students are employed on an academic term-by-term basis and continuity of employment depends, in part, on the student's academic schedule and desire for continuous employment.

Basic Causes of Accidents

The ten basic causes of the 212 accidental injuries studied and their frequency of occurrence are shown in Exhibit 3. These data indicate that the most frequent cause of accidents (34.4%) was failure of employees to follow rules, regulations and/or instructions. Types of negligible activity reported were:

EXHIBIT 3. Basic causes attributed to 212 accidental injuries during a two year period in four residence hall food service units at Michigan State University.

Basic Causes	Incidence	% of Total
Failure of employee to follow rules, regulations and/or instructions	73	34.4
Mental attitude, make-up or knowledge	36	17.0
Failure to use or improper use of tools, equipment or protective devices provided	33	15.5
Improper design, construction or layout	32	15.1
Physical conditions or handicap	15	7.0
Use of defective tools, equipment or protective devices having defects not known	11	5.2
Failure of person in charge to make proper inspection, or to give adequate instructions	5	2.3
Proper tools, protective devices, equipment or material not provided	4	1.9
Failure of the person in charge to properly plan or conduct work	2	0.9
Agencies outside the University	1	0.7
Totals	212	100.0

* Failure to follow established general safe practice rules.
* Failure to follow established safe work procedures for a specified job.
* Failure to obey direct orders, or instructions or to heed warnings of danger.
* Working without permission or authority.
* Failure of the employee to inspect tools or equipment.

Three other important reasons underlying unsafe acts reported were mental attitude (17.0%), improper use of tools or equipment (15.5%), and improper design, construction, or layout (15.1%). The combined contributions of these four basic causes accounted for 82.0 per cent of the accidents reported. Of these, the three causes which concerned employee performance accounted for 66.9 per cent of the reported injuries whereas 15.1 per cent of the injuries were caused by factors related to administrative responsibility. The six remaining causes ranged from 7.0 to 0.7 per cent and accounted for a total of 18.0 per cent of the accidents reported.

Accident Type

Faulty handling of objects was the most frequent accident type resulting in 25.5 per cent of accidents. Falls, the primary accident type reported in other studies (4, 6, 15), accounted for only 9.4 per cent of accidents.

One reasonable answer for the reverse in the ratio of types of accidents lies in training and recognition of the problem. Michigan State University food service employees are required to wear shoes having anti-slip soles and heels. The finish on floors is carefully controlled because floors are known to be a potential hazard in kitchens.

Exhibit 4 indicates that the second ranking accident type (15.6%) was impact of moving objects, such as carts, falling utensils, mobile equipment or swinging doors. The five accident types ranging from 9.4 to 6.6 per cent of the total accounted for 40.1 per cent of the accidents studied. This percentage approximates the percentage (41.1%) attributed to the two primary types of accidents. The six remaining types of accidents ranged from 4.7 to 0.5 per cent and totaled 18.8 per cent of the 212 accidents reported.

Agency of the Accident

The sixteen agencies of accidents in the selected study are shown in Exhibit 5. Employees who sustained accidents were most susceptible to injury from cooking, baking, and food heating equipment with this agency being involved in 16.0 per cent of the accidents reported and showing an increase of 62 per cent during the second year of the study. Hot substances, the second ranking agency (13.4%), were reported two-and-one-half times more frequently in 1964-65 than in the previous year. The frequency of

involvement of working surfaces including floors, glassware etc., knives, machines and food were each within the range of 7.5 to 5.7 per cent of the total cases. Incidental agencies, observed in less than 3 per cent of cases, accounted for 9.2 per cent of the total. Miscellaneous groups of agencies were involved in nearly 30 per cent of the reported injuries.

EXHIBIT 4. Occurrence of thirteen accident types causing 212 injuries during a two year period in four residence hall food service units at Michigan State University

Type of Accident	Incidence	% of Total
Handling objects (tools, etc.)	54	25.5
Struck by moving objects	33	15.6
Contact with hot substances	20	9.4
Exposure to temperature extremes	19	9.0
Striking against (includes slipping)	17	8.0
Fall of person on same level	15	7.1
Lifting and overexertion	14	6.6
Caught in or between	10	4.7
Contacts with poisons or irritants	8	3.8
Slip causing strain	7	3.3
Fall of person to different level	5	2.3
Inhalation, ingestion	1	0.5
Unclassified	9	4.2
Totals	212	100.0

EXHIBIT 5. Incidence of agencies of 212 accidental injuries sustained during a two year period in four residence hall food service units at Michigan State University

Agency	1963-64		1964-65		Total	
	No.	%	No.	%	No.	%
Cooking, baking, food heating equipment	13	6.1	21	9.9	34	16.0
Hot substances	8	3.9	20	9.5	28	13.4
Working surfaces, including floors	7	3.3	9	4.2	16	7.5
Glassware, dishes, ceramic products	10	4.7	6	2.8	16	7.5
Knives	5	2.4	8	3.9	13	6.3
Machines	5	2.4	7	3.3	12	5.7
Food	7	3.3	5	2.4	12	5.7
Vehicles	4	1.8	2	0.9	6	2.7
Chemicals	1	0.5	4	1.8	5	2.3
Prime Movers	2	0.9	2	0.9	4	1.8
Boilers, steamers, pressure vessels	0	...	2	0.9	2	0.9
Radiations and radiating substances	0	...	1	0.5	1	0.5
Hand tools	0	...	1	0.5	1	0.5
Electric apparatus	1	0.5	0	...	1	0.5
Miscellaneous agencies	30	14.1	31	14.6	61	28.7
Totals	93	43.9	119	56.1	212	100.0

Injury Type

Numerically, two types of injuries in the residence halls (thermal or chemical burns and cuts) differed markedly between the years 1963-64 and 1964-65 as shown in Exhibit 6. Although the total numbers of bruise and of thermal or chemical burn injuries were the same for the two year period, the number of thermal or chemical burns for 1964-65 shows an increase of 162 per cent over those recorded in 1963-64. Injury from these burns for 1964-65 are the leading injury type for either of the two years. Cuts, the third most frequent injury type reported (21.7%), also showed an increase of 70.6 per cent in 1964-65. With the limitations in sample size it is understandable that figures could fluctuate from year to year without having a significant effect on accident trends.

When combined, the three primary types of injury (bruises, burns and cuts) accounted for nearly two-thirds (65.9%) of all injuries. Strains and lacerations, ranked as 8.9 and 6.6 per cent respectively, accounted for 15.5 per cent of total injury types. The twelve other types of injuries were the results of accidents in only 18.6 per cent of the cases.

EXHIBIT 6. Occurrence of injury types resulting from 212 accidents experienced during a two year period in four residence hall food service units at Michigan State University

Type of Injury	1963-64		1964-65		Total	
	No.	%	No.	%	No.	%
Bruise (contusion)	24	11.3	23	10.8	47	22.1
Burns - thermal or chemical	13	6.1	34	16.0	47	22.1
Cuts	17	8.1	29	13.6	46	21.7
Strain	10	4.7	9	4.2	19	8.9
Lacerations	8	3.8	6	2.8	14	6.6
Poisoned or irritated	3	1.4	4	1.9	7	3.3
Sprain	4	1.9	3	1.4	7	3.3
Puncture	3	1.4	3	1.4	6	2.8
Abrasion	3	1.4	1	0.5	4	1.9
Foreign object in eye or ear	3	1.4	1	0.5	4	1.9
Simple fracture	2	0.9	1	0.5	3	1.4
Multiple injuries	1	0.5	1	0.5	2	1.0
Dislocation	0	...	1	0.5	1	0.5
Burns, electrical	0	...	1	0.5	1	0.5
Hernia	1	0.5	0	...	1	0.5
Shock	0	...	1	0.5	1	0.5
Others	1	0.5	1	0.5	2	1.0
Totals	93	43.9	119	56.1	212	100.0

Part of Body Injured

One-half of the accidental injuries in the four residence hall food service units during this two year period were suffered to fingers and hands (see Exhibit 7). Injuries sustained to the upper extremities (fingers, hand and arms) were reported in almost two-thirds (62.0%) of the cases. Injuries to lower extremities (legs, feet, toes) occurred in only 17.4 per cent of the cases studied. These figures are a striking contrast to those published by industry in which the upper extremities account for only 18 per cent of injuries while leg, foot and toe injuries average 49 per cent of all injuries (32).

In this study of residence hall food service accidents only 7.1 per cent were designated as back injuries. This finding does not support a hospital food service study cited earlier (21) in which strains and sprains were indicated as the leading types of injury and that, in the majority of cases, these resulted in back injury.

Each of the seven remaining body part injuries were observed in less than 3 per cent of the cases and, as a group, accounted for only 13.5 per cent of the reported injuries.

EXHIBIT 7. Rank frequency of body part injuries during a two year period in four residence hall food service units at Michigan State University

Body Part Injured	1963-64		1964-65		Total	
	No.	%	No.	%	No.	%
Finger	20	9.6	40	18.8	60	28.4
Hand	24	11.3	22	10.4	46	21.7
Arm	8	3.8	17	8.1	25	11.9
Foot	12	5.6	11	5.2	23	10.8
Back	8	3.8	7	3.3	15	7.1
Leg	4	1.9	7	3.3	11	5.2
Joints	2	0.9	4	1.9	6	2.8
Multiple	3	1.4	3	1.4	6	2.8
Eye	3	1.4	2	0.9	5	2.3
Head	2	0.9	2	0.9	4	1.8
Toe	1	0.5	2	0.9	3	1.4
Neck and Face	2	0.9	1	0.5	3	1.4
Chest	1	0.5	0	...	1	0.5
Other	3	1.4	1	0.5	4	1.9
Totals	93	43.9	119	56.1	212	100.0

Age and Sex

As shown in Exhibit 8, only 153 (72.3%) of the 212 accident reports studied contained complete data with respect to employee age and sex. Despite this limitation, it appeared that at least 33.5 per cent of the 212 reported accidents were sustained by employees under 26 years of age whereas, when all other age groups were combined, employees aged 26 to 65 accounted for 38.8 per cent of the total number of cases studied.

Of the accidents reported with complete age and sex data, males aged 18 to 25 were involved in nearly 5.5 times as many accidental injuries as females of this same age group. Similar data for employees over 25 years of age indicated that females were involved in nearly 4.0 times as many accidents as males and that a high proportion of these injuries were sustained by females between the ages of 36 and 60.

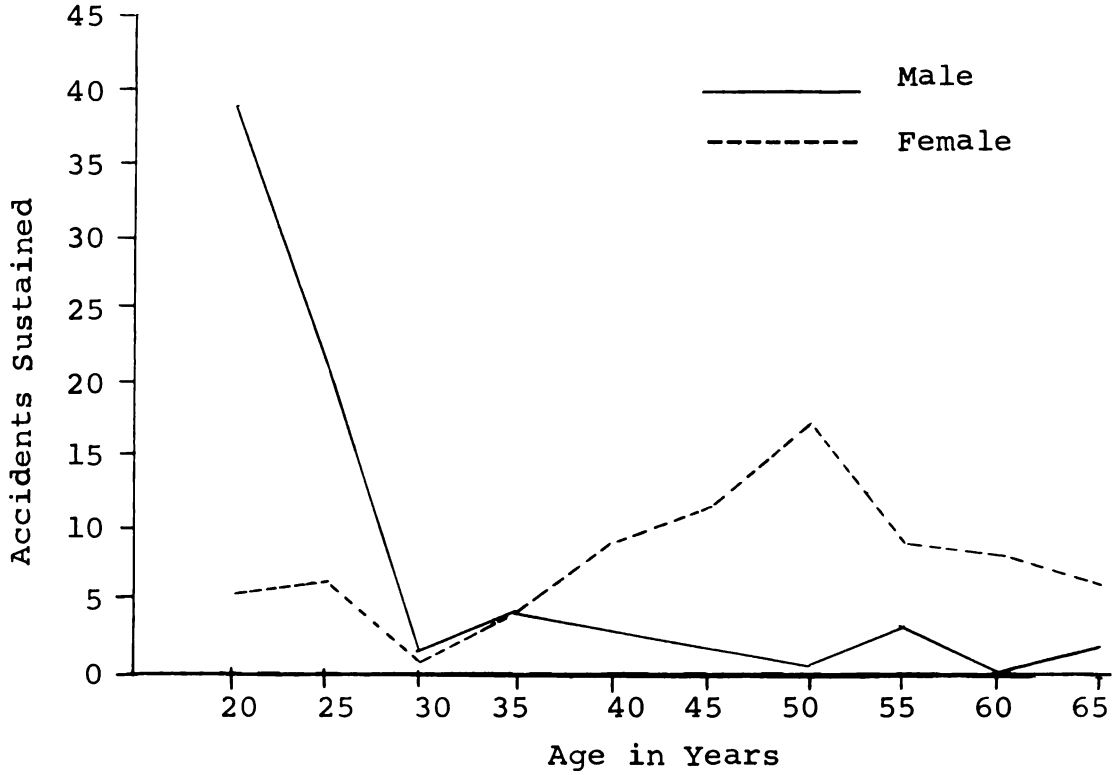
It is acknowledged, however, that the lack of age and sex data for 27.7 per cent of the cases studied greatly limits the certainty of these findings. Furthermore, since the approximate ratio of male to female student workers employed in the residence hall food services was about 40:60, it is apparent that factors other than age and sex have contributed measurably to the relatively high incidence of male injuries in the 18 to 25 year age group.

EXHIBIT 8. Incidence of reported accidental injury according to age and sex of employees during a two year period in four residence hall food service units at Michigan State University

Age Group	Male		Female		Total	
	No.	%	No.	%	No.	%
18-20	39	18.4	5	2.4	44	20.8
21-25	21	9.9	6	2.8	27	12.7
26-30	2	1.0	1	0.5	3	1.5
31-35	4	1.9	4	1.9	8	3.8
36-40	3	1.4	9	4.2	12	5.6
41-45	2	1.0	11	5.2	13	6.2
46-50	1	0.5	17	8.0	18	8.5
51-55	3	1.4	9	4.2	12	5.6
56-60	0	...	8	3.8	8	3.8
61-65	2	1.0	6	2.8	8	3.8
Totals on complete data	77	36.5	76	35.8	153	72.3
Incomplete data	...	...	...	...	59	27.7
Grand Totals	...	...	...	...	212	100.0

Exhibit 9 graphically compares the incidence of injuries for male and female employees categorized by age groups. Data used in the construction of the graph were necessarily limited to the 153 accident reports which

EXHIBIT 9. Relationship of sex and age to occurrence of 153 accidental injuries during a two year period in four residence hall food service units at Michigan State University



contained both age and sex information for the employees involved.

Length of Employment and Sex

Completed data for this comparison were available from only 181 (85.5%) of the 212 accident reports studied. As shown in Exhibit 10, persons employed 5 years or less were involved in 67.6 per cent of the reported accidents while only 17.9 per cent of the accidents were experienced

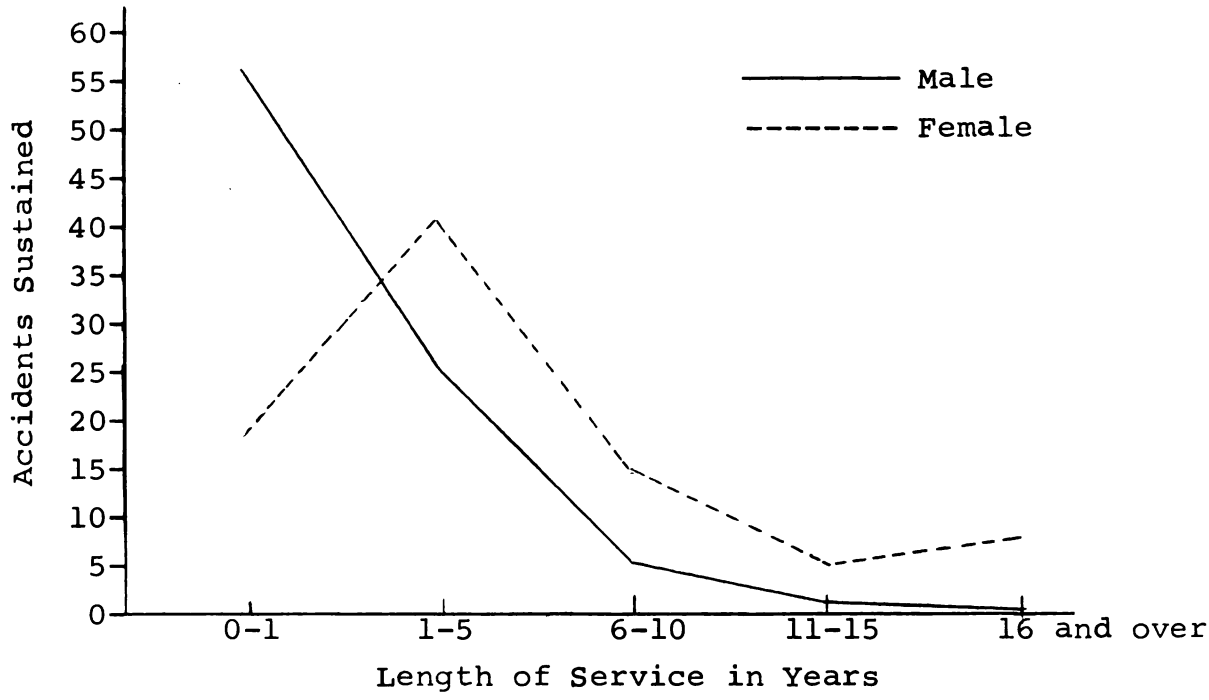
by persons of longer tenure. At least one-third (35.9%) of the accidents studied involved persons with less than one year of service and, of these, males sustained three times as many injuries as females. Nearly one-third (31.7%) of the reported accidents were experienced by employees with 1 to 5 years service. In this latter service category injuries to females were 1.6 times greater than injuries to males. From these limited data it appeared that accident frequency was influenced more by term of employment than by the sex of the employee.

EXHIBIT 10. Incidence of reported accidental injury according to sex and length of employment during a two year period in four residence hall food service units at Michigan State University

	Male		Female		Total	
Term of Employment	No.	%	No.	%	No.	%
Less than 1 year	57	26.9	19	9.0	76	35.9
1-5 years	26	12.3	41	19.4	67	31.7
6-10 years	6	2.8	15	7.1	21	9.9
11-15 years	2	0.9	6	2.8	8	3.7
16 years and over	1	0.5	8	3.8	9	4.3
Totals on complete data	92	43.4	89	42.1	181	85.5
Incomplete data	...	...	...	...	31	14.5
Grand Totals	...	...	...	...	212	100.0

As shown in Exhibit 11, frequency of accidental injury to females exceeded that of males except in the less than 1 year service category. However, it seems more likely that this relationship is a result of the imbalance of traditional food service female vs. male work roles than of term of employment.

EXHIBIT 11. Relationship of sex and length of service to occurrence of 181 accidental injuries during a two year period of four residence hall food service units at Michigan State University



Job Classification

Before making a comparison of accidental injuries among job classifications it is necessary to differentiate among the four categories of Food Service Helper. Food Service Helper I consists of group leaders and kitchen supervisors of either sex. Food Service Helpers II and III perform tasks related to cafeteria service and general kitchen duty. These classifications are usually held by female employees and the distinction between the two categories is promotion from Food Service Helper III to Food Service Helper II based on merit and length of service. The classification Food Service Helper IV consists primarily of male employees engaged in dishwashing, scrubbing and bussing of food and/or dishes.

In stating the job classifications, several unit managers were inconsistent in their use of employee titles in their reports. In some reports unit managers specified work area assignments such as cafeteria worker, bus boy, or receptionist, while in others they used the more inclusive terms of Food Service Helper I, II, III, or IV. Before meaningful summarization of these data could be made, it was necessary to reclassify employee job designations related to positions of food service helpers according to the established work categories of Food Service Helper I, II, III, or IV.

Of the 212 reports studied, only 187 (88.2%) contained completed data with respect to job classification and sex (see Exhibit 12). Over half (55.8%) of the reported accidents occurred among employees in the Food Service Helper classifications. Accidental injury occurred more frequently (27.0%) among employees classified as Food Service Helper IV than any other group. Of the accidents sustained by persons performing these utility tasks of dishwashing, pot washing, scrubbing, etc., 24.2 per cent were experienced by male employees. Accidents experienced by persons within Food Service Helper II and III classifications contributed 25.0 per cent of the reported accidents with nearly all of these being sustained by female employees. Food Service Helper I employees were involved in only 3.8 per cent of total accidents.

Secondary to accidents sustained by food service helpers injury incidence was most frequent for cooks and bakers who experienced 15.6 per cent of the total accidents reported. The remainder of accidental injuries occurred among persons specified as cafeteria workers (5.6%) or kitchen helpers (3.7%) or those performing tasks of janitor, food trucker or porter (7.5%).

Although these data indicate that a much higher proportion of injuries were sustained by employees classified as Food Service Helpers, assessment of the relative importance of this finding must include consideration of the

proportion of food service workers so classified. In the food service units studied more than two-thirds of the workers were listed in one of the food service helper classifications.

EXHIBIT 12. Occurrence of accidental injury during a two year period among males and females in different job classifications in four residence hall food service units at Michigan State University

Classification	Male		Female		Total	
	No.	%	No.	%	No.	%
Cook and Baker	17	8.1	16	7.5	33	15.6
Food Service Helper I	4	1.9	4	1.9	8	3.8
Food Service Helper II	0	...	22	10.4	22	10.4
Food Service Helper III	3	1.4	28	13.2	31	14.6
Food Service Helper IV	51	24.2	6	2.8	57	27.0
Kitchen Helper	5	2.3	3	1.4	8	3.7
Miscellaneous (Janitor, Porter)	14	6.6	2	0.9	16	7.5
Cafeteria Worker	5	2.3	7	3.3	12	5.6
Total on complete data	99	46.8	88	41.4	187	88.2
Incomplete data	...	...	...	...	25	11.8
Grand Totals	...	...	...	...	212	100.0

Time of Day

The time of day at which the accidental injury occurred was reported in only 119 (56.1%) of the 212 cases studied so that supporting data for consideration of the influence of this factor are very limited (see Exhibit 13). From the available data, however, it appeared that accidents were most prevalent during the luncheon and dinner meal service hours of 11:00 A.M. - 1:00 P.M. and 5:00 - 7:00 P.M., respectively. In addition to the influence of heightened activity for full-time workers during meal service periods, the scheduling of part time, relatively inexperienced student workers to meet the manpower needs during these periods may have contributed to the increased number of accidental injuries which occurred during these time intervals.

The time intervals with the next highest accident frequencies were 1:00 - 3:00 P.M. and 3:00 - 5:00 P.M. which, for full-time employees may, in part, reflect the influence of fatigue on employee performance.

Employment Status

In terms of man hours worked, accidents are more likely to be experienced by full-time employees than student workers. Of the 212 accidental injuries only 60 (28.3%) were sustained by part-time student employees. This is in contrast to two other findings of this study: (1) student workers are usually in the age category in which accidents

are most likely to occur (18 to 25 years) and (2) students are usually employed during meal service hours when more mishaps seem to occur.

EXHIBIT 13. Accidental injuries which occurred during a two year period in four residence hall food service units at Michigan State University grouped into two hour work intervals

Time Intervals	Total	% of Total
Before 9:00 A.M.	13	6.1
9:00 - 11:00 A.M.	7	3.3
11:00 - 1:00 P.M.	33	15.6
1:00 - 3:00 P.M.	22	10.3
3:00 - 5:00 P.M.	16	7.6
5:00 - 7:00 P.M.	28	13.2
Totals on complete data	119	56.1
Incomplete data	93	43.9
Grand Totals	212	100.0

Incomplete Reports

A total of 80 reports or 37.7 per cent of the total number studied failed to give complete data on the accidents. Seventy-two per cent of the incomplete reports were submitted by one unit manager while 5, 8, and 15 per cent were reported

by the three other unit managers. It was of interest to relate these facts with the stated basic causes of accidents in the residence halls. Unit managers who failed to complete the forms in the greatest number of cases gave "failure of employee to follow rules, regulations, and/or instructions" more frequently than other causes. This is particularly striking for the 1964-65 reports where the unit manager with the greatest number of incomplete reports indicated this basic cause in 66 per cent of the cases, while the unit manager who submitted the greatest number of completed reports used "failure to follow rules, etc." as the basic cause in 34 per cent of the accidents. The other two unit managers gave this reason in 31 per cent and 22 per cent of their cases. It is possible that the completeness of accident reporting may reflect, in part, the degree to which a unit manager is actively concerned with the real causes of accidents in his food service operation.

Accident Repeaters

Of the 212 reported injuries for the two year period studied, 88 (41.5%) were the result of accident repeaters. Thirty-five employees reported more than one accident; 27 had 2 accidents, 5 employees reported 3, 1 had 4, 1 reported 5, and 1 cook experienced 10 accidents. Interestingly, 43 per cent of the repeated accidents occurred in the residence hall mentioned earlier as possibly showing limited safety awareness or concern on the part of the unit manager.

SUMMARY OF FINDINGS AND IMPLICATIONS

Programs for safety management in the food service industry have not been developed at a rate corresponding to the rapid and technological growth within the industry. Eleven per cent of all accidents which occurred at Michigan State University during 1963-1965 were experienced in four food service units selected for this study. Some factors which contribute to accident occurrence can be controlled; others cannot. However, the findings from this study may prove useful to residence hall managers in planning safety programs for Michigan State University food service operations. This sample of selected residence hall food service workers is probably reflective of other educational institutions, but the findings of this study would not necessarily apply to the food service industry as a whole.

The most frequently reported cause of accidental injury was the failure of employees to follow rules, regulations and/or instructions. Three other important causes were mental attitude; failure to use, or improper use of tools, equipment or protective devices; and improper design, construction or layout of the food service facility. Faulty handling of objects and impact of moving objects (falling

utensils, mobile equipment, swinging doors) were the two most prevalent accident types reported. Cooking, baking, and food heating equipment and hot substances were the two most important accident agencies cited.

Of the 212 cases studied, the most common types of injuries were bruises, thermal and chemical burns, and cuts. Sixty-two per cent of the injuries sustained involved upper extremity body parts (fingers, hands, arms) whereas only 17.4 per cent involved lower extremity body parts (legs, feet, toes). With respect to the two-year period studied, the number of cuts and burns experienced by food service employees increased substantially during 1964-65. These data substantiate the need for requiring increased use of equipment safety devices and protective hot pads and gloves by employees.

Young males age 18-25 sustained more accidents than females of any age and 5.5 times as many as females in the same age category. Female employees age 26-60 sustained nearly 4.0 times the number of accidents as males in this age grouping; a high proportion of these injuries were sustained by females between the ages of 36 and 60. The 40:60 male to female student employee ratio substantiates the finding that factors other than age and sex have contributed to the high proportion of injuries for 18-25 year old males.

Employees of both sexes experienced a high incidence of accidents during the first five years of employment.

Over two-thirds of the reported cases, equally divided between males and females, were sustained by workers with less than six years experience. Accidents sustained by employees with more than 5 years work experience were more frequently the result of mishaps to females than males, but it seems likely that this relationship is a result of the traditional roles of females in the food service industry.

Accidents were reported most frequently for employees classified as Food Service Helpers. Accidents reported for Food Service Helpers IV, primarily sustained by males, were slightly greater than the combined groups of Food Service Helpers II and III where the injuries were sustained almost totally by females. Cooks and bakers were responsible for about 15 per cent of the accidents reported and an equal number were sustained by employees in ancillary positions.

Approximately one-third of the reported accidents occurred during hours of meal service. This finding is greatly limited in its application since only 56.1 per cent of the case data were usable for this comparison. Even though a greater number of accidents occurred during the time intervals of meal service, the influence of heightened activity at meal times and the scheduling of part time, relatively inexperienced workers during these intervals must be considered. The element of fatigue for full time employees is also apparent since there were somewhat more injuries during the afternoon than during the morning hours. Of the 212

accidental injuries studied only 60 (28.3%) were sustained by part time student employees.

Incomplete reports were submitted for over one-third of the accidents with one unit manager filing incomplete reports for 72 per cent of his cases. Forty-one per cent of the reported accidents were the result of accident repeaters and of these, 43 per cent occurred in one residence hall.

Before accidents in food service units can be measurably curtailed, residence hall managers at all levels must become seriously concerned with the importance of safe practices and the effects of their absence. Attention to pertinent findings in this study could arouse the interest of residence hall managers and therefore contribute to safety awareness.

Many food service employees are not of such a caliber that self-discipline in safety performance can be expected; unit managers must supply the required leadership. It is hoped that this analysis of accidents in the food service units of four residence halls at Michigan State University will create an awareness of some factors which influence the frequency of accidents, and that this awareness will stimulate unit managers to cooperate fully in safety programs which are conducted in an effort to reduce situations which have a predetermining effect on accident occurrence.

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APPENDIX

SUPERVISORS FIELD REPORT OF CLAIMED ACCIDENTAL INJURY

CO-WO-5

MICHIGAN STATE UNIVERSITY

Please fill in completely.

This Form is Designed to Help the Supervisor Gather Information Which He Can Use to Prevent Similar Accidents.

PERSONAL INFORMATION

Name of Injured

Social Sec. #

Home Address

Marital Status

Date of Accident

Time

Dept. A/C #

Major Division or College?

Dorm & Food Service ☐ Physical Plant ☐ Other

Department or Hall

Age

Male ☐ Female ☐ University Student ☐

Name & Title of Person in Direct Charge of Work

Injured Works in or From What Building

Job Title or Description

Years on Present Job

DESCRIPTION OF INJURY

TREATMENT

Treated at Hospital ☐

When

Admitted ☐

Name of Hospital if Other Than Olin

DESCRIPTION OF ACCIDENT

TELL HOW INJURY OCCURED. INCLUDE PERTINENT PHOTOS, SKETCHES, AND EQUIPMENT DATA.

LOCATION Please Describe in Detail

Complete Next Line and Report Return to Work on "Accident Disability Time Sheet - Return to Duty Report"

Estimated Length of Disability

Names of Witnesses and Dept. or Address

PLEASE DO NOT WRITE IN THIS SPACE

Dates Absent	No. of Work Days	No. of Calendar Days

AFTER REVIEWING THE ACCIDENT, WHAT ARE THE SUGGESTED PREVENTIVES?

By Injured:

By Supervisor:

Action to Be Taken

Signature of Supervisor

Signature of Dept. Head

Date

Date

☐ WORK INJURY ☐ NOT A WORK INJURY ☐ DON'T KNOW ☐ VISITOR

PLEASE CHECK ONE BOX IN EACH SECTION

PART OF BODY

- ☐ 1. Abdomen
- ☐ 2. Arm
- ☐ 3. Back
- ☐ 4. Chest
- ☐ 5. Eye
- ☐ 6. Face
- ☐ 7. Finger
- ☐ 8. Foot
- ☐ 9. Hand
- ☐ 10. Head
- ☐ 11. Int. Org.
- ☐ 12. Joints
- ☐ 13. Leg
- ☐ 14. Multiple
- ☐ 15. Neck
- ☐ 16. Other
- ☐ 17. Toe

INJURY TYPE

- ☐ 1. Abrasion
- ☐ 2. Amputation
- ☐ 3. Animal Bite
- ☐ 4. Bruise
- ☐ 5. Burns Electrical
- ☐ 6. Burns Thermal
- ☐ 7. Compound Fracture
- ☐ 8. Crush
- ☐ 9. Cuts
- ☐ 10. Dislocation
- ☐ 11. Exhaustion (Heat, etc.)
- ☐ 12. Foreign Objects (Eye, ear)
- ☐ 13. Hernia (Rupture)
- ☐ 14. Infections
- ☐ 15. Lacerations
- ☐ 16. Multiple
- ☐ 17. Other
- ☐ 18. Poisoned or irritated
- ☐ 19. Puncture
- ☐ 20. Shock
- ☐ 21. Simple Fracture
- ☐ 22. Sprain
- ☐ 23. Strain

LOCATION OF ACCIDENT

- ☐ 1. Admin. Bld.
- ☐ 2. Classroom
- ☐ 3. Dairy
- ☐ 4. Farm Area
- ☐ 5. Food Service Area
- ☐ 6. Grounds Dept.
- ☐ 7. Not Univ. Prop.
- ☐ 8. Other Bldgs.
- ☐ 9. Other Univ. Prop.
- ☐ 10. Physical Plant
- ☐ 11. Residence Hall
- ☐ 12. Salvage
- ☐ 13. Stadium
- ☐ 14. Stores
- ☐ 15. Streets, walks, & Grds.
- ☐ 16. Student Services
- ☐ 17. Theater

AGENCY OF ACCIDENT

- ☐ 1. Animals
- ☐ 2. Boilers
- ☐ 3. Chemicals
- ☐ 4. Dusts
- ☐ 5. Elec. Appar.
- ☐ 6. Elevators
- ☐ 7. Food
- ☐ 8. Glassware
- ☐ 9. Hand Tools
- ☐ 10. Hot Subst.
- ☐ 11. Machines
- ☐ 12. Poison Ivy
- ☐ 13. Prime Movers
- ☐ 14. Radiation Subs.
- ☐ 15. Unclassified
- ☐ 16. Vehicles
- ☐ 17. Work Surf. Floors

ACCIDENT TYPE

- ☐ 1. Auto accident (Motor vehicle)
- ☐ 2. Bitten by animal
- ☐ 3. Caught in or between
- ☐ 4. Contact with electric current
- ☐ 5. Contact with poison or irritant
- ☐ 6. Exposure to temperature extremes
- ☐ 7. Fall of person, on same level
- ☐ 8. Fall of person to different level
- ☐ 9. Handling objects, tools, materials
- ☐ 10. Inhalation, absorption, ingestion
- ☐ 11. Lifting and overexertion
- ☐ 12. Other (Explain)
- ☐ 13. Slip (not fall) causing strain
- ☐ 14. Striking against, kneeling or slipping on
- ☐ 15. Struck by (flying, sliding or mov. obj.)

BASIC CAUSES OF ACCIDENT

- ☐ 1. Agencies Outside of the University
- ☐ 2. Lack of Adequate Instruction
- ☐ 3. Mental Attitude, Makeup, or Knowledge
- ☐ 4. Physical Condition or Handicap
- ☐ 5. Unsafe Act
- ☐ 6. Unsafe Mechanical or Physical Condition

Send this Form to Department of Public Safety

7-1-66

O-5351

SUPERVISORS FIELD REPORT OF CLAIMED ACCIDENTAL INJURY

CO-WO-5

MICHIGAN STATE UNIVERSITY

Please fill in completely.

This Form is Designed to Help the Supervisor Gather Information Which He Can Use to Prevent Similar Accidents.

PERSONAL INFORMATION

Name of Injured	Social Sec. #
Home Address	Marital Status
Date of Accident / Time	Dept. A/C #
Major Division or College? / Dorm & Food Service ☐ Physical Plant ☐ Other	Department or Hall
Age / [redacted] / ☐ ☐ ☐ Name & Title of Person	Injured Works in