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A STUDY OF THE UNIFICATION OF THE
POLICE AND FIRE PROTECTION SERVICES
OF MICHIGAN STATE UNIVERSITY

Thesis for the Degree of M. S.
MICHIGAN STATE UNIVERSITY
Allen Hastings Andrews, Jr.
1964

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ABSTRACT

A STUDY OF THE UNIFICATION OF THE POLICE AND FIRE PROTECTION SERVICES OF MICHIGAN STATE UNIVERSITY

by Allen Hastings Andrews, Junior

A number of United States and Canadian cities have unified their police and fire departments--commonly called "police-fire integration"--as a means of securing more adequate service at lesser cost. This study applies the unification concept to the police and fire protection of a large university which pays for its own police and fire protection. The study has value for institutions which provide or contract for their police and fire protection, and is a contribution to the literature of police-fire unification feasibility studies.

The purpose of the study was to determine whether a unified police-fire department is adaptable to university police and fire protection conditions and whether such an organization would offer financial advantages to the university. It was hypothesized that the nature and occurrence of police and fire incidents and called-for services on the campus are such that the same personnel of a single organization could effectively perform both types of duties. It was also hypothesized that performance of police and fire duties by the same personnel would provide a higher

level of service from the protection budget, allowing the university the option of increasing protection or reducing costs.

The study involved a detailed analysis of police and fire conditions during the five year period 1958-1962, including the incidence and severity of occurrences, service duties, personnel scheduling and time expended on various duties. A prominent, unified police-fire department was observed for extended periods of time over an eight year period. Police and fire protection literature was examined with particular emphasis on fire fighting methods and the pro and con of police-fire unification.

The study revealed unification to be feasible if the excessive police workload and personnel turnover conditions can be rectified, and pointed to unification as a means for remedying these problems. Fire fighting methods and minimum necessary manpower for fire fighting operations was determined, and from this a unified police-fire organization and a plan for its operations was designed.

The personnel expense of the design organization providing service equal to the existing separate agencies was shown to be 3.5% less each year with five fewer employees. A unified organization having the same number of employees as the separated departments would increase the police manpower by seven men (36%) at a 6.3% increase in salary expense. A unified department designed to operate at the same annual personnel cost as the separated departments

Allen Hastings Andrews, Junior

would increase police personnel 20% and provide improved fire manpower response.

The study pointed to the need for additional research into the possibility that provision by the city (possibly with a unified police-fire department) of both police and fire protection under a more specific contract with measurable standards for protection of university interests might be an attractive alternative to a university-operated agency. If the results of the additional study still revealed a university operated unified police-fire department to have superior operating or financial advantages, then the unified plan was recommended to the university as providing superior operational and financial benefits to the university than is obtainable from two separate police and fire departments.

A STUDY OF THE UNIFICATION OF THE
POLICE AND FIRE PROTECTION SERVICES
OF MICHIGAN STATE UNIVERSITY

By

Allen Hastings Andrews, Junior

A THESIS

Submitted to
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CHAPTER I

INTRODUCTION

In recent years the concept of unifying police and fire protection duties in one body of public employees--commonly called "police-fire integration"--has received a great deal of attention as a means for securing more protection from a given dollar expenditure. As salaries and fringe benefits increase, the workweek of firemen and policemen decreases, and all other costs of local government increase at a time when the public is tending to resist tax increases even as the increasing size of the urban population requires more service and protection. Because of these trends a number of cities have examined the effectiveness of their police and fire personnel.

Personnel expenses commonly run over 80% of the police and fire budgets¹ and police and fire budgets average eighteen per cent of the municipal budget.² Cities which have adopted some form of police-fire integration claim a definite financial benefit as a result.³

¹George H. Tryon, Editor, Fire Protection Handbook, Twelfth Edition, 1962 (Boston: National Fire Protection Association, 1962), section 10, p. 33.

²Compendium of City Government Finances in 1962 (Washington, D.C.: United States Department of Commerce Bureau of the Census, 1963), p. 4.

³Missouri Public Expenditure Survey, Combined Police

Like cities, colleges and universities commonly have police forces or guard or watchmen services. Efforts to find any large college or university which does not have expenses for police or security protection have been unsuccessful. A few colleges and universities also have expenditures for fire department protection. Among those known are Stanford, Illinois, Michigan, Notre Dame, Iowa State, State University of Iowa, Purdue, Alabama Polytechnic Institute, Brigham Young, and Michigan State University.⁴

Cost of police services for universities, in terms of personnel, can be very substantial, involving as many as 2.5 police employees per thousand enrolled students.⁵ Fire protection costs can also be considerable, exceeding \$100,000 at Michigan State University in 1961-62⁶ and involving a contribution of 18% by the University of Michigan

and Fire Services for Medium-Sized and Small Cities (Jefferson City: Missouri Public Expenditure Survey, February, 1960), p. 7; cites Evanston, Illinois; Oak Park, Michigan; Winston-Salem, North Carolina; Chicago Heights, Illinois; Oakwood, Ohio. See also: Perry Scott, A Decade of Public Safety (Sunnyvale, California: City of Sunnyvale, March 13, 1961), p. 1.

⁴James W. Harvey, The University and the City (Berkeley: Bureau of Public Administration, University of California, December, 1958), p. A-4-5.

⁵Calculated from figures by Nils D. Wagenhals, Evaluating a Public Service Function: The Large State University Campus Police Unit (Los Angeles: Bureau of Governmental Research, University of California, 1962), p. 20.

⁶A Report to the Citizens...City of East Lansing, 1962 (East Lansing, Michigan: City of East Lansing Annual Report, 1962), p. 19.

toward the Ann Arbor fire department budget.⁷

I. PURPOSE

It is the purpose of this study to determine whether the concept of police-fire integration can be applied to the police and fire protection needs of Michigan State University, and whether such an integrated organization would be in the economic interests of the university.

II. HYPOTHESES

The existence of two major sets of conditions are necessary if police-fire integration is to be appropriate for Michigan State University and these are hypothesized as follows:

1. The nature and occurrence of police and fire incidents on the Michigan State University campus are such that the same body of personnel can perform both types of duties.

2. Performance of police and fire duties by the same body of personnel will provide more service from the protection dollar, allowing the university the option of increasing protection or reducing costs.

III. IMPORTANCE OF THE STUDY

The rapidly increasing influx of college-age students into the universities is a severe strain on university finances. Michigan State University faces a potential

⁷Harvey, op. cit., p. A-4.

enrollment of 48,000 to 51,000 by 1972.⁸ The university has been extremely hard-pressed for funds and is likely to be increasingly so as the enrollment increases from its present East Lansing campus figure of 25,000.⁹ Any means which could reduce the university's public safety expenditures or retard the rate of growth of those expenditures would be greatly appreciated by the institution. If this study can point to such an efficiency measure it would be of value not only to Michigan State University but also may aid other universities which have expenditures for both police and fire protection.

IV. SCOPE AND METHOD

Preparation of this study has involved very detailed analysis of the police and fire protection of Michigan State University during a five-year period. This analysis has included the incidence and severity of police and fire occurrences, manpower scheduling and the personnel time expended in various activities. These factors were analyzed for a period of not less than three years for personnel, five years for police incidents and more than ten years for fire incidents. Various aspects of personnel, police and fire incidents were analyzed in even greater depth where

⁸State News (East Lansing: Michigan State University), April 5, 1963, p. 1.

⁹1963 Fall Term East Lansing campus enrollment obtained from the Michigan State University Registrar's office.

the information was available. The activities of the Oak Park, Michigan, Department of Public Safety have been observed for a continuous two-week period and for additional periods of time during the past five years. This department and the Sunnyvale, California, department are the two prominent completely unified departments in the United States, and the experience of Glenford Leonard, Oak Park's Director of Public Safety during this period of years, has greatly benefited this study.

Since 1954 the writer has been procuring data and material descriptive of the police-fire integration concept. This has been supplemented by access to the even more extensive library of Glenford Leonard, the specialized fire protection literature in the library of the University Department of Public Safety, and the Michigan State University Library.

Police and fire operations on the university campus have been closely observed for more than five years including, in particular, the tactical operations of the fire department and its state of training and leadership. Field research and experiments in operational methods have been conducted in the areas of officer availability, miniaturized communications equipment for individual officers, patrol car response time, problems of recruiting, training and supervising student assistants, and similar matters of importance to an integrated police-fire organization. Many of the techniques recommended in this study are supported

by research in use of the techniques.

It is not intended here to provide an extensive description of police-fire integration as it is now practiced in the United States and Canada since two recent works excellently accomplish this function.¹⁰ Further, this study does not present in detail the arguments for and against unification. Arguments against will be presented if they are pertinent to the decision process of the university in considering adoption of police-fire integration. Arguments for integration will generally be ignored with the thought that analysis of the application of the concept to the university's conditions should provide sufficient data for the reader to reach his own conclusions on the merits of police-fire unification for protection of Michigan State University.

The benefits from integration may be measured in terms of personnel efficiency and personnel costs, if protection conditions of the university are amenable to the use of the integrated scheme of organization and operation. Extensive analysis of the service and protection needs will determine the operational feasibility of unification in the university situation. The effect of unification on costs and numbers of personnel required will be demonstrated

¹⁰ Bruce, op. cit. See also Dale E. McNeil, An Inquiry into the Feasibility of Integrating the Police and Fire Services of an American Municipality (M.S. Thesis, Michigan State University, 1960).

by comparing with the existing separated organizations three different unified organizations designed to:

1. Secure maximum service from the same number of personnel as serving the separated departments.
2. Provide the same level of on-duty manpower service as provided by the separated department.
3. Show what level of increased service can be provided through unification at equal cost with the separated departments.

This study also recommends the structure and operational principles for an integrated public safety department on the campus to illustrate the principles of unification by describing its operating procedures. Development of this organizational model required analysis of the fire fighting manpower needs of the university for response to fire alarms and recommendation of a minimum on-duty fire fighting manpower strength. This strength was then related to the requirements for police on-duty manpower and recommended uniformed manpower strength established from these analyses.

V. SURVEY OF THE LITERATURE

The literature on police-fire unification theory and practice provides little opportunity for scholarly research, particularly the writings of those opposed to the concept.

Basic Theory

Charles S. James has written a pamphlet¹¹ and a book which are the basic references in the theory of police-fire unification. His book, A Frontier of Municipal Safety, is particularly noteworthy for its first four chapters which consider the broad spectrum of municipal safety activities with emphasis on the similarities in purpose and method.¹² In the last three chapters, he presents a design for integrated public safety departments in single-station cities and in a city of 75,000 population, and considers the problems involved in installation of a unified system. Both James' works are objective and cautious in approach, and suggest organizational patterns and operational methods drawn from accepted police and fire administration practices and experience and which are related to observed police and fire protection conditions, budgets and manpower typical of municipalities in the United States in the early 1950's.

Fundamental to unification theory in James' mind is the application of basic police and fire organizational theory to the integrated scheme.¹³ His suggested organizations

¹¹Charles S. James, Police and Fire Integration in the Small City (Chicago: Public Administration Service, 1955), 84 pp.

¹²Charles S. James, A Frontier of Municipal Safety (Chicago: Public Administration Service, 1955), 169 pp.

¹³Ibid., p. 79.

apply the basic police organization theory that, " . . . the field force, engaged in general duty work, is the primary element in furnishing service to the public and it should be assisted and supported by sufficient staff, service, and specialist units."¹⁴ The broader nature of the unified public safety organization's responsibility, " . . . does not alter the fact that the prime organizational requirement is to assign personnel to fill all necessary positions and to provide sufficient supervision and specialist assistance to the patrol force."¹⁵ James believes the value of unification lies in achieving a single purpose for the public safety activities, the potential increase in patrol personnel and, hence, an increase in preventive services.¹⁶ James' discussion of an integrated organization for a large city also points to the possibility that the minimum fire fighting crew manpower may be increased.¹⁷ The real financial incentive for use of the integration concept lies in the realization of greater productivity and higher quality performance from employees working fewer hours for more money and it is this use of unification which provides the real justification for police-fire integration in James'

¹⁴Loc. cit.

¹⁵Ibid., p. 80.

¹⁶Ibid., p. 81.

¹⁷Ibid., p. 109.

opinion.¹⁸

Descriptive Works

A reasonably large quantity of information on unified operations is available, primarily from the cities having integrated organizations. Interest in unified police-fire operations has been high and almost every city using the theory has been obliged to publish some form of descriptive literature. Two major efforts have been made to describe comprehensively the practice of integration theory in the United States, both done as theses in 1960.

Dale E. McNeil, a commissioned officer of the United States Air Force, doing graduate work at Michigan State University, described the integrated systems of eighteen cities and villages in the United States, discussed eight cases of abandonment of the plan, considered the arguments for and against police-fire unification and gave enough attention to the relationship between size of a municipality and the integration concept to make the reader wish more attention had been given the subject. McNeil then discussed the process of planning for a unified operation,¹⁹ and he concluded that police-fire integration is feasible and practical primarily because of the wide variety of organizational forms existing which have established its

¹⁸Ibid., pp. 159-160.

¹⁹McNeil, op. cit., footnote 10.

adaptability to a whole range of local conditions.²⁰ McNeil feels most arguments against integration are without merit,²¹ but emphasizes the importance of legal restrictions as obstacles to adoption of integration and the danger of subordination of one service to the other through the integration process.²² McNeil seems to agree with James that the primary virtue of police-fire unification is the increased patrol coverage and better inspection procedures which result in more effective prevention of crime, fire and accidents.²³

The descriptive survey of police-fire integration by Howard I. Bruce, originally a Master's thesis at Ohio State University, provides a good insight into the international and historical basis of integrated police-fire practices in Great Britain, France and Canada, as well as its development in the United States.²⁴ Bruce describes seventy-three cities and villages in the United States and Canada having some degree of police-fire unification as of January 1, 1961. Fourteen of the locations are in the state of Michigan, including Dearborn, Farmington, Garden

²⁰Ibid., p. 3.

²¹Ibid., p. 2.

²²Ibid., p. 129.

²³Loc. cit.

²⁴Bruce, op. cit., pp. 1-5.

City, Grosse Pointe Shores, Grosse Pointe Woods, Huntington Woods, Lapeer, Manistique, and Oak Park.²⁵ Bruce organized his study in terms of various functional considerations of integration including administration and organization, operations, personnel, economy, legal problems and abandonments. Bruce is in accord with James that the integration emphasis is on the patrol force and this must be supplemented by adequate specialized assistance following usual police and fire department administrative practice.²⁶ Bruce's detailed description of the unified operational practices of ten United States cities shows the extremes of integration theory as it has been adapted to local conditions and illustrates the wide variation of practices existing under the system. Evaluating the personnel factors in combined police-fire organizations causes Bruce to conclude that training is an important factor in success of unification, that complete utilization of individual employees' skills and time benefits morale and lowers the unit cost of protection, and that improved salaries accompanying integration improves the recruiting position of the agency.²⁷

Bruce gives careful consideration to the costs of police-fire unification and writes:

²⁵ Ibid., pp. 6-8.

²⁶ Ibid., p. 22.

²⁷ Ibid., pp. 53-54.

The administrator should not expect financial miracles. . . . An immediate reduction in . . . expenditures . . . is unlikely. . . .²⁸

In a relatively stable environment the unification of departments should not be expected to reduce the size of the total force. . . .²⁹

If the city is in the midst of rapid growth, . . . it is possible that fewer men will have to be added. . . . Therefore, . . . a necessary increase in the budget . . . will be less than under the more conventionally organized concept. . . .³⁰

Of all writers to consider the subject, Bruce gives the greatest attention to the subject of a possible increase in fire insurance premiums and fire losses in cities using integrated organizations, as well as their crime experience, concluding:

Experience in both the United States and Canada has not borne out the contentions of the anti-integrationists. Crime and fire have not run rampant. Fire losses, insurance premiums, and crime losses have not increased as a result of unification.³¹

Bruce summarizes by saying:

Integration is a positive step; it is one that the administrator can take to improve both the present and future financial structure of the municipality as well as to improve the important, but intangible factor: service. Integration is not an end in itself; rather, it is a means of obtaining two desirable goals: improved economy and service.³²

²⁸Ibid., pp. 55.

²⁹Loc. cit.

³⁰Ibid., p. 56.

³¹Ibid., p. 64.

³²Loc. cit.

Individual City Evaluations

Studies of individual cities to determine their suitability for use of the integrated police-fire operation concept include some of high caliber containing excellent material. George E. Bean, presently city manager of Grand Rapids, Michigan, did studies of Peoria, Illinois,³³ and San Diego, California,³⁴ while he was city manager for these cities. Each study included analysis of police and fire incidents and duty time involved before recommending an integrated plan, and the San Diego study is particularly informative on the nature of police patrol workloads.

The Citizens Research Council of Michigan has done several studies on the application of police-fire integration theory to individual cities, including Port Huron,³⁵ Grosse Pointe Woods,³⁶ Lincoln Park,³⁷ and Oak Park.³⁸

³³George E. Bean, Integration of the Fire and Police Departments--A Report to the City Council (Peoria, Illinois: Administrative Report No. 22, June 24, 1957) (mimeographed).

³⁴George E. Bean and Howard L. McCalla, The Case for Better Utilization of Fire Manpower (San Diego: Report of the City Manager to the City Council, June 1, 1961), 47 pp.

³⁵Integration of Police and Fire Services in Port Huron, Michigan, Parts I and II (Detroit: Citizens Research Council of Michigan, Report No. 188, April 8, 1957).

³⁶A Survey of the Integrated Police and Fire Operations of the Grosse Pointe Woods Department of Public Safety (Detroit: Citizens Research Council of Michigan, Memorandum 191, June, 1957).

³⁷Integration of Police and Fire Services in Lincoln Park (Detroit: Citizens Research Council of Michigan, May, 1959).

³⁸Public Safety Services in Oak Park, Michigan (Detroit: Citizens Research Council of Michigan, May, 1959).

The Port Huron study is notable because it recommends integration in spite of the fact that,

Almost every obstacle to police and fire efficiency has been "built-in" to the city . . . long distances . . . international border . . . transients . . . river front . . . old buildings on small lots . . . railroad lines, drawbridges, short blocks with narrow streets . . . are a few of the more obvious problems. . . .³⁹

In spite of these conditions, the Council felt integration was desirable. The Oak Park study, while critical of a number of operational conditions, and particularly so of an inadequate number of staff, supervisory and command personnel to assist the Director, concluded that:

It is the opinion of the Research Council, as a result of this survey, that the citizens of Oak Park receive a substantially higher level of service from the integrated public safety department than would be possible for the same cost under the traditionally separate police and fire department.⁴⁰

Police and Fire Administration

Police administration literature is relatively abundant. Fire literature is essentially oriented to fire equipment, operations and prevention. The International City Managers' Association publishes two books which provide authoritative information on current practice and theory in police and fire administration.

³⁹ Integration...in Port Huron, Part I, op. cit., p. 21.

⁴⁰ Public Safety Services in Oak Park, Michigan, op. cit., letter of transmittal dated May 18, 1956, from Loren B. Miller.

Municipal Police Administration⁴¹ and Municipal Fire Administration⁴² are aimed entirely at the protective department administrators and concern themselves with the administrative interests of finance, budgeting, purchasing, organization, personnel, distribution of equipment and manpower and other administrative techniques. Each volume is written by acknowledged authorities in the respective fields and copy is reviewed by others before publication.

Municipal Police Administration states that the opportunities for improving public safety through unification are greatest in the field of prevention, using the eyes and ears of the patrolman in all public safety undertakings within his capabilities. Several organizational principles are set forth, including (1) generalization should be carried to an extreme only with respect to patrol officers; (2) there must be adequate specialist and staff facilities; and (3) there must be provision for use of specialists in situations beyond the knowledge or skill of the public safety officer.⁴³ Need, through proper supervision and dispatching, to avoid involvement of a large part of the force in an area on routine matters is mentioned.⁴⁴

⁴¹Municipal Police Administration (Chicago: International City Managers' Association, 1954).

⁴²Municipal Fire Administration (Chicago: International City Managers' Association, 1956).

⁴³Municipal Police Administration, op. cit., p. 87.

⁴⁴Ibid., pp. 87-88.

This volume suggests that the fire prevention inspector may be analogous to the traffic specialist and the fire fighting expert to the detective.⁴⁵

The companion volume on fire administration presents a very neutral discussion of police-fire integration involving long quotations from the NBFU Bulletin No. 300 on police-fire integration (the 1953 edition of the bulletin) and even longer excerpts from James' A Frontier of Municipal Safety. On balance, this volume takes no position on the subject of police-fire integration.

Patrol Administration is a 1961 volume of substantial size and authority describing the problems and practices of administering the police patrol force.⁴⁶ It describes the various methods and special systems of patrol, considers planning, manpower distribution, supervision, reporting methods, communications and equipment, and generally represents the most thorough examination of the subject available. The authors consider police-fire unification and state that successfully integrated organizations tend to maintain maximum patrol strength at minimum cost.⁴⁷ The authors state that reduction in crime cost would be

⁴⁵Ibid., p. 87.

⁴⁶G. Douglas Gourley and Allen P. Bristow, Patrol Administration (Springfield, Illinois: Charles C. Thomas, Publisher, 1961).

⁴⁷Ibid., p. 66.

the factor establishing any economy through integration in a community,⁴⁸ cite the advantage of manpower flexibility obtainable,⁴⁹ speak cautiously of the weakening effect necessary specialization would have on the integrated force,⁵⁰ and conclude that police-fire integration would be a satisfactory method of supplementing patrol strength in some communities with the decision based on crime and fire conditions, personnel and political factors and population attitudes.⁵¹

The Grading Schedule of the National Board of Fire Underwriters is the standard by which the fire protection of United States cities is measured.⁵² Its primary orientation is toward prevention of conflagration and large loss fires. The standards of the grading schedule are intended primarily as a tool for insurance rating, and are not intended as an administrative yardstick.⁵³ However, this very grading process amounts to use of the schedule as a yardstick since the economic pressure of the insurance

⁴⁸Loc. cit.

⁴⁹Ibid., p. 67.

⁵⁰Loc. cit.

⁵¹Ibid., pp. 67-68.

⁵²Standard Schedule for Grading Cities and Towns of the United States with Reference to Their Fire Defenses and Physical Conditions (New York: National Board of Fire Underwriters, 1956).

⁵³Municipal Fire Administration, op. cit., p. 26.

industry is constantly exerted against a city to comply with the schedule standards in order to prevent insurance premium penalties against its citizens. In fact, most of the provisions of the schedule seem appropriate for use as an administrative yardstick for evaluation of the fire administrator's understanding of and preparation for dealing with a city's fire defenses, as pointed out in a study of the economic effects of the schedule.⁵⁴

This study by the League of California Cities is the first effort to interpret the effects and meaning of the provisions of the grading schedule to municipal administrators and its discussions clearly emphasize the administrative yardstick use and value of the schedule.

Periodicals

Firemen and Fire Engineering frequently contain excellent articles on progressive developments in fire administration and fire operational methods. Public Management, published by the International City Managers' Association, frequently reports developments in the use of police-fire unification. The Special Interest Bulletins of the National Board of Fire Underwriters are published at random intervals and concern themselves with current problems of the fire service including a heavy emphasis on administrative,

⁵⁴The Fire Protection Grading Process as Related to the Economics of Fire Protection (Berkeley and Los Angeles: League of California Cities, April, 1961), p. 3.

manpower, training and prevention standards and discussions of trends developing in the fire service fields of interest. These bulletins are necessary to assist in interpretation of the use of the grading schedule published by the NBFU.

VI. PLAN OF PROCEDURE

Chapter II presents a discussion of the nature of the concept of integrating police and fire services. Included are discussions of integration history, major organizational forms, its definition, trends in development of integration applications and problems of its application.

The characteristics of police and fire protection at Michigan State University are presented in Chapter III.

Chapter IV describes the application of integration to Michigan State University by presenting a suggested unified police-fire department organization and discussing major features of unified operations and manpower needs.

The financial effects of unification are considered in Chapter V, including suggested salary scales, the cost of several different levels of integrated service contrasted with the cost of separated police-fire protection organizations and considers the future financial effects of the unified operation suggested in Chapter IV.

Chapter VI presents the conclusions drawn from this study and makes certain recommendations concerning adoption of the integrated plan of operation at Michigan State University.

CHAPTER II

THE CONCEPT OF POLICE-FIRE UNIFICATION

While the performance of police patrol and fire protection by the same personnel of a single organization may be traced back as far as the Vigiles of ancient Rome,¹ significant practice of the concept in the United States seems to be a post-World War II development, although it has been a fairly common form of organization in Canada for many years.² Significant in the discussions of the subject in the literature has been the problem of defining the concept.

I. THE CONCEPT

The most satisfactory definition of police-fire unification is in terms of its objective. The purpose of combining police and fire duties is to secure better manpower utilization--to utilize the time spent in fire stations by fire fighting personnel waiting for fires to occur for other, more productive purposes than merely waiting

¹A. C. Germann, Frank D. Day and Robert R. J. Pallati, Introduction to Law Enforcement (Springfield, Illinois: Charles C. Thomas, Publisher, 1962), p. 38.

²Bruce, op. cit., p. 2.

on "standby" duty.³

The Theory of Utilizing Fire Manpower

The concept of integrating fire fighting duties with other occupations is traditional in the history of fire fighting and to this day the largest number of fire fighters in the United States are the volunteer firemen supporting themselves by pursuit of their normal occupations until a fire occurs, when they adopt the role of fire fighters.⁴ This volunteer organization has generally proven very satisfactory in terms of effective fire protection as well as in terms of reduced costs.⁵ However, many volunteer organizations (which might be called multiple occupation-fire integration!) in urban and suburban situations have had difficulty in providing effective manpower response because their manpower may work away from the suburb in which they live or certain areas of larger cities may not have adequate numbers of volunteers properly distributed to provide protection at all times.⁶

³George E. Bean and Howard L. McCalla, The Case for Better Utilization of Fire Manpower (San Diego: Report of the City Manager to the City Council, June 1, 1961), p. 7, and letter of transmittal.

⁴Municipal Fire Administration (Chicago: International City Managers' Association, 1956), p. 42.

⁵J. C. Robertson, "The Combined Paid and Volunteer Fire Department--with Some Suggested Palliatives," Fire Engineering, Volume 115, No. 1 (January, 1962), p. 38.

⁶Ibid., p. 39.

Full-paid fire fighters were hired as the solution to this problem and to provide proper attention to increasingly complicated fire fighting equipment. The establishment of a full paid fire department, however, fails to provide the answer in many communities which simply are not large enough to justify employing the number of full-time employees to have an adequate fire fighting crew always on duty. The budget effect of hiring an adequate number would be overwhelming! These communities typically resort to combined paid and volunteer departments, and include among their number some sizeable cities in the northeast United States.⁷

The integration of many occupations with that of fire fighting is seen, therefore, not to be uncommon. In fact, fire administrators and city officials frequently have problems with firemen who want to "integrate" their fire fighting job with outside employment and controversies over "moonlighting" are not unusual.⁹

In the 1950's several cities adopted a "new" form of integration of occupations with fire fighting. Sunnyvale, California; Oak Park, Michigan; Glencoe, Illinois; Dearborn, Michigan; Elgin, Illinois; Evanston, Illinois;

⁷ Ibid.

⁸ Municipal Fire Administration, 1956, op. cit., p. 201.

⁹ Ibid., pp. 109-110.

Winston-Salem, North Carolina; and a number of less prominent cities¹⁰ integrated police duties with fire duties--and the police-fire integration controversy commenced and continued with great bitterness through the 1950's.¹¹

James pointed out that the historical fire department practice of assembling men at the fire station in anticipation of fire alarms is no longer necessary because modern radio communications in police and fire vehicles allows effective assembling of personnel at the scene of the occurrence.¹² He also pointed out that good police patrol manpower distribution provides rapid response to emergencies and that fire manpower could be placed on patrol performing crime and fire prevention activities until a fire alarm was received.¹³ Fire authorities feel police have an important role in fire prevention through their alertness to construction and remodelling conditions while on patrol and stress the necessity of dispatch of police

¹⁰ Bruce, op. cit., p. 2.

¹¹ Readers interested in the opposition to police-fire integration are referred to: Why We Are Opposed to Integration of Fire and Police Departments (Second Edition; Washington, D.C.: International Association of Fire Fighters, AFL-CIO, November, 1957). Also: Integration Fact Book, 1957 (Peoria, Illinois: Fire Fighters Local 544, 1957).

¹² Charles S. James, A Frontier of Municipal Safety (Washington, New York and Chicago: Public Administration Service, 1955), pp. xvi-xvii.

¹³ Ibid., pp. 24-26; pp. 50-51; pp. 71-74.

to fires for crowd and traffic control.¹⁴

James' suggestions that firemen be sent out into the streets for prevention duties did not represent an innovation in fire administration theory. The 1950 edition of Municipal Fire Administration in Chapter 7 attributed by the preface to Warren Y. Kimball and Horatio Bond, both nationally known fire protection authorities, described such a system as follows:

The fact that under present operating conditions an individual fireman in an average company goes to an alarm only about once in two days and does not work even at a trivial fire more than once a week does not prevent fire officials from keeping hundreds of men sitting idle, waiting for a call which may occur on the other side of the city, simply to keep up required paper strength in their scattered units. It is obviously extravagant to have large numbers of firemen sitting waiting for fires which they could go out and prevent.

Use of Radio

The fact that under a consolidation of stations a substantial part of the on-duty fire force would be out of quarters on active fire-prevention work would not reduce the potential fire-fighting force of the department. Each district fire prevention crew would work within a limited area under the command of an officer. They would be in constant touch with headquarters by two-way radio the same as police cruisers on patrol. Should a fire occur the inspection force would be quickly rounded up by blowing the siren on their patrol vehicle. Where the fire alarm operator finds his in-quarters force becoming depleted by simultaneous calls he can order certain patrol units to return to their stations

Defense
Special

¹⁴ Police Department Cooperation in Municipal Fire
(New York: National Board of Fire Underwriters,
Interest Bulletin No. 304, April, 1958).

or dispatch them to cover other districts.¹⁵

Here is the blueprint for police-fire integration operations written in 1950 by fire authorities. All one has to do is change some of the duties advocated by the fire authorities to include police patrol duties.

Studies of fire department operations lend much support to the concept of integration. Various studies in Los Angeles,¹⁶ San Diego,¹⁷ Peoria, Illinois,¹⁸ Greensboro, North Carolina,¹⁹ as well as Evanston, Illinois, experience,²⁰ show that less than 2% of firemen's duty time is spent in fire fighting activities.

¹⁵Municipal Fire Administration, 1950 Edition, op. cit., p. 251. It should be noted that the 1956 edition, written at the height of opposition to integration by the NFPA and NBFU, IAFF, IAFC and others, did not include these paragraphs.

¹⁶Missouri Public Expenditure Survey, Combined Police and Fire Services for Medium-Sized and Small Cities (Jefferson City: Missouri Public Expenditure Survey, February, 1960), p. 7, footnote 7.

¹⁷George E. Bean and Howard L. McCalla, The Case for Better Utilization of Manpower (San Diego: City of San Diego, Office of City Manager, June, 1961), p. 11.

¹⁸George E. Bean, Integration of the Fire and Police Departments--A Report to the City Council (City of Peoria, Illinois, Administrative Report No. 22, June 24, 1957), p. 3.

¹⁹Missouri Public Expenditure Survey, Combined Police and Fire Services for Medium-Sized and Small Cities (Jefferson City, Missouri: Missouri Public Expenditure Survey, 1960), p. 7, footnote 7.

²⁰Kent MacDougall, "Integration of Police-Fire Forces Spreading," The Herald-News (Passaic-Clifton, New Jersey), January 24, 1957.

The trend toward shorter work weeks for firemen has been a major factor in encouraging adoption of police-fire integration, and many cities having integration in Illinois adopted the plan after the state legislature responded to the urgings of firemen and required a maximum work week of 56 hours.²¹ Integration offers a good chance to give fire-fighters a shorter work week and a duty routine which is more nearly typical of our society by bolstering the work forces of both police and fire departments through combined duties. A shorter work week is the major goal of the fire fighters union and the work week continues to be shortened in many cities each year.²²

What to do with the non-fire-fighting time of firemen is a subject which has not received adequate attention. Repair of parking and water meters, repair of motor vehicles, police protection and fire prevention are some duties which have been suggested. Increasing police patrol protection in this day of expanding population and increasing crime problems and police costs is one frequently expressed solution. The concept of integration holds promise of providing

²¹Maurice W. Scott, Illinois Tax Facts (Springfield, Illinois: Taxpayers' Federation of Illinois, Column #528, January 17, 1958). Also: MacDougall, op. cit., January 23, 1957. Also: Bruce, op. cit., p. 2.

²²The Municipal Yearbook (Chicago: The International City Managers' Association), Vol. 29 (1962), pp. 386-387; and Vol. 24 (1957), pp. 354-55.

a substantial increase in police patrol protection for a relatively low increase in cost. For example, Peoria, Illinois, in 1957 could have increased its police patrol force from 67 to 89 men²³ at an annually recurring cost of \$20,340.²⁴ Fire prevention is an activity strongly favored by James, who states:

No longer will any competent fire official argue that his sole job is to put out fires; rather, he is likely to maintain stoutly that prevention is his first responsibility. This change in attitude and objective strikes straight at the heart of the factors that previously made for police and fire separateness. If firemen are basically preventive personnel, then obviously they cannot do their jobs in a fire station. . . . If prevention is the goal, social aspects are introduced into the fire service through the work of men engaged in home inspections, public education, and even law enforcement. If fire prevention is to be taken to the people, as crime and accident prevention are, then the duties of policemen and firemen have identical objectives--to stimulate and provide leadership in the community safety effort.²⁵

Fire prevention is now recognized by most writers in the fire protection field as the only fire department activity likely to have much success in halting the rise in fire losses in the United States. The emphasis on fire prevention is so strong that the National Board of Fire Underwriters makes no deduction of credit for on-duty

²³George E. Bean, Integration of the Fire and Police Departments--A Report to the City Council (Peoria, Illinois: Administrative Report No. 22, June 24, 1957), Chart XIII.

²⁴Ibid., Chart XIV.

²⁵James, A Frontier of Municipal Safety, op. cit., p. xvii.

manpower for those men out of the fire station inspecting buildings.²⁶

The attractions of police-fire integration are great even in the absence of prospect for reducing police and fire protection costs. Large increases in protection for relatively minor increases in salaries and equipment would be a source of satisfaction to most administrators. A number of cities now have some form of police-fire unification. Their administrators originally were notably cautious in predicting reductions in police-fire expenditures and generally estimated police-fire expenditures might rise in the initial stages of the combination process. All these administrators were quick to report a substantially better level of service received from their expenditures.²⁷ Recent literature on the subject of the economy of the integration concept describes savings of large sums of money in terms of the numbers of personnel (primarily firemen) not needed because of unification, but the literature does not reflect any city which reported a reduction in actual expenditures for police-fire protection, with the possible exception of Peoria, Illinois, the success of whose integrated program cannot yet be evaluated.²⁸

²⁶ Standard Schedule for Grading Cities and Towns of the United States with Reference to Their Fire Defenses and Physical Conditions (New York, Chicago and San Francisco: National Board of Fire Underwriters, 1956), p. 55.

²⁷ Bruce, op. cit., pp. 55-56.

²⁸ Peoria Journal-Star, January 24, 1962, p. 1.

Forms of Unified Organizations

The outstanding characteristic of the use of the police-fire integration concept is the great variety of organizational forms which have resulted. Almost no examples of duplicating organizational pattern are to be found, indicating that so long as sound organizational and administrative principles are followed, the community may tailor its use of the concept of police-fire unification to its local conditions. McNeil,²⁹ Bruce,³⁰ the Missouri Public Expenditure Survey,³¹ Michigan Municipal League,³² and others describe three major forms of integrated organization and point out that few departments falling within the general class actually operate in a similar manner. These three forms are characterized as: 1) functional; 2) partial; or 3) complete unification.

Functional Unification. The functional form of integration involves preservation of two separate departments with provision for personnel of one department to perform duties commonly thought of as "belonging" to the other, and for this reason is frequently referred to as

²⁹McNeil, op. cit., p. 4.

³⁰Bruce, op. cit., p. 13.

³¹Missouri Public Expenditure Survey, op. cit., pp. 2-5.

³²Police-Fire Integration in Michigan (Ann Arbor: Michigan Municipal League Information Bulletin No. 95, December, 1960), pp. 2-3.

"cooperative" integration. Several versions of this scheme exist. Glencoe, Illinois, policemen fight fires--its firemen do not perform police patrol duties, although they do perform certain station duties.³³ Evanston, Illinois, uses police officers to provide additional manpower for large fires. Its firemen do no police work.³⁴

Partial Unification. A partially unified organization generally involves establishment of a third force of employees performing both police and fire duties. It is a logical scheme for a city with established police and fire departments whose personnel are opposed to integration, for it allows employment of all new employees as public safety officers and provides a means for gradual conversion to total integration. Under this plan, the "unified" personnel are considered police patrolmen between fires and assigned to the fire department as fire fighters when an alarm is received until they are released by the fire chief to become patrolmen again.³⁵ It would also appear that under this classification lies the integrated police-fire arson squad used by Detroit for so many years and regarded as a model arson organization.³⁶ Cities using this scheme

³³Bruce, op. cit., p. 15.

³⁴Ibid., p. 16.

³⁵McNeil, op. cit., p. 6.

³⁶Municipal Fire Administration, 1956, op. cit., p. 334.

for police-fire patrol and fire fighting duties are Dearborn, Michigan,³⁷ Winston-Salem, North Carolina,³⁸ and Peoria, Illinois,³⁹ among others.

Total Unification. The significant characteristic of total integration is the combination of the police and fire departments into one organization commonly called a public safety department. Oak Park, Michigan,⁴⁰ and Sunnyvale, California,⁴¹ are the two prominent examples of this system.

Unification Defined

From the foregoing description of the various forms of integrated police-fire operations, it is apparent that a number of differing definitions could be derived. Some definitions would appear to be too all-encompassing to provide a basis for effective discussion of police-fire integration. McNeil, for example, describes the direction of

³⁷Missouri Public Expenditure Survey, op. cit., p. 4.

³⁸John M. Gold, et al., Report of Fire-Police Cooperation (Winston-Salem, North Carolina: Report of City Manager, May 14, 1958), pp. 1-2.

³⁹Personal observation of the writer and from conversations with the Peoria police and fire chiefs, Bernard Kennedy and Lester Manace.

⁴⁰Public Safety Services in Oak Park, Michigan (Detroit: Citizens Research Council of Michigan, May, 1956), p. 5.

⁴¹Scott, op. cit., p. 2.

completely separated police and fire departments by a single Director of Public Safety as a form of unification.⁴² While this may be so in terms of pure logic, classifying the many cities having such administrative and policy coordinating systems as "integrated police-fire departments" would not clarify any discussion of the nature or extent of police-fire unification. Nor does citing Detroit's police-fire arson squad as an example of police-fire integration further the clarity of unification discussions.

The absence of controversy over this type of administrative and functional organization, as is the case for a single dispatcher providing radio service to separate police and fire departments, indicates these types of cooperation do not encompass the basic issues underlying the controversy.

It is only when one proposes to put the bulk of the firemen on patrol as policemen, use policemen on patrol as fire fighters and/or contemplate a possible reduction in the total number of employees assigned to police patrol and fire fighting that the heart of the unification controversy is reached. For it is this version of integration which raises the questions concerning the ability of the unified organization to provide adequate protection and service. These questions cover many aspects of police and fire operations and merit carefully considered appraisal.

⁴²McNeil, op. cit., p. 6.

In view of this discussion, it is not difficult to derive a definition of police-fire unification for this study which is based on the idea that manpower assigned in a fire station to wait for a fire alarm is manpower wasted--manpower which could more profitably be employed in fire and crime prevention by assignment to patrol restricted areas of a jurisdiction performing all the accepted functions of police patrol and the additional function of fire prevention education and inspection.

Unification is, therefore, defined as the performance of police patrol and fire fighting and routine fire prevention inspection duties by the same body of employees rather than by two separate groups of employees.

It should be understood that the writer does not contemplate that integration will necessarily affect the specialist positions found to be necessary in traditionally organized police and fire departments. Fire inspectors, investigators, training officers, records and communications specialists would be required in an integrated organization as in separate organizations. If the conditions of the specialty performance are such as to warrant establishment of a full-time specialist, it is unlikely that unification would change the requirements.⁴³

⁴³James, A Frontier of Municipal Safety, op. cit., pp. 61-62.

II. THE PROBLEMS OF UNIFICATION

Integration has produced one of the most bitter controversies in the field of public safety administration. The police, after being told that unification will tend to ensure high salaries, will produce immediate pay raises, will mean very little additional work for them and may tend to better the public image of the policeman, have generally still been opposed to the idea but have not fought integration with the energy and bitterness characteristic of the opposition of the fire service personnel.⁴⁴

Firemen have done everything in their power to stop unification in any place it has been proposed. The International Association of Fire Fighters provides financial and legal support to any of its locals fighting integration. The issue is a real one for the firemen, for they see in integration the end of their profession in its traditional form.

Arguments for Unification

Only a brief summary of arguments in favor of police-fire unification will be presented here in the belief that the study itself will develop the advantages which are significant to the university.

Most frequently cited advantages claimed for the police-fire unification concept are:

⁴⁴Michigan Municipal League, op. cit., p. 4.

1. Elimination of the time of firemen wasted while they **wait** in fire stations for alarms of fire.

2. Opportunity to increase police protection by use **of** the time of the firemen for the minor cost of retraining, **equipment** and salary increases.

3. The potential that combining the duties of the firemen and policemen will attach to the police some of the **favorable** public images of firemen and remove from firemen **the** unfavorable image of the public employee paid to play **checkers** and watch television.

4. The opportunity to provide a challenging and stimulating occupation to both firemen and policemen by **replacing** some of the tedium of the job with worthwhile activity.

5. The opportunity to provide a work week for firemen **more** favorably comparable to prevailing work weeks of other **public** employees.

6. The opportunity to increase the level of fire **prevention** activity.

7. The existence of a larger pool of personnel **adaptable** to whatever the current public safety urgency may **be** rather than limited to the more infrequent major **problems** of the fire or police service alone.

8. Through payment of higher salaries to fewer men, **it** is possible to attract a better caliber of personnel **who**, in turn, may provide a more enlightened, imaginative and competent service to the public.

Arguments Against Unification

Because arguments and discussions of police-fire unification by fire service personnel have commonly been very emotional and unsupported by verifiable statements, many of these arguments against integration will not be discussed in the following material considering arguments and reasons against police-fire integration. Only those arguments will be considered which appear to have some possible basis in fact or which would have significance to the university will be presented, in the topics below.

"Unification Will Hurt Fire Insurance Ratings."

It has been stated⁴⁵ that effecting a unified police-fire operation will result in higher fire insurance rates. Fire insurance rates are determined by statewide loss experience, the insurance class rating assigned a city by application of the grading schedule of the National Board of Fire Underwriters and the local hazards, construction, occupancy exposure and private protection of the individual property being insured.

The statement has usually meant that the grading schedule application will penalize a city that unifies its police and fire departments. This is not the case, according

⁴⁵Charles Chambers, Integrated Police and Fire Departments as Operated in the City of Oak Park, Michigan, as printed in Integration Fact Book, 1957 (Peoria, Illinois: Fire Fighters Union, Local No. 544, 1957), p. 21.

to the N.B.F.U.⁴⁶

"Unification Has Not Worked." Opponents of integration have pointed to a number of cities and villages which have discarded the unified scheme of organization after various levels of experience and trial and cited these to "prove" that the concept will not actually function satisfactorily. McNeil and Bruce gave careful attention to these claims.

McNeil cites lack of public acceptance, opposition by fire and police personnel, and city and department administrators who " . . . were not behind the program, did not support it, and did not give it a chance for success."⁴⁷

Bruce demonstrates that a number of the supposed abandonments of the unified operational concept never really happened for the cities never actually operated an integrated organization, and concludes:

Where integration has failed the causes can be readily observed: poor operational policies, inadequate preparation, poor personnel relationships, strong political and union pressures, and above all, weak administration. These particular problems are not indigenous to just integration, but can be observed under any form of organization.⁴⁸

The Missouri Public Expenditure Survey study paid

⁴⁶Fire and Police Departments--Combining of (New York: National Board of Fire Underwriters, Special Interest Bulletin No. 300, August, 1961).

⁴⁷McNeil, op. cit., p. 35.

⁴⁸Bruce, op. cit., p. 76.

scant attention to this argument, commenting:

. . . Of the six cities reported as having rejected or abandoned an integration plan, only three have been integrated on more than an experimental basis.⁴⁹

It seems obvious that where "unification has not worked," a major factor has been an unstable political atmosphere which could not ensure an adequate trial of the plan, because of weak or unwilling administrators, or the inability to maintain control of the police and fire employees involved.

"Fire Response Time Is Unfavorably Affected." This argument, presented by the International Association of Fire Fighters, raises a potentially serious objection to integration. Its validity rests entirely on whether there are enough patrolmen-fire fighters properly distributed through the community in relation to the total number of police and fire incidents and the location and time of their occurrence to provide adequate assurance of prompt response by the necessary number of fire fighters.

However, if this argument validly applies to policemen-firemen on patrol, it equally applies to the practice of sending an entire fire company out on property inspection, or the equally approved practice of sending individual members of a fire company out on fire inspections. The delay in returning to the apparatus and the possibility

⁴⁹ Missouri Public Expenditure Survey, op. cit.,
p. 11.

that the apparatus will be at a greater than normal distance from the alarm location is just as likely (if not more so) in these cases as it is that a radio-equipped patrolman will be so delayed. Yet the fire authorities do not regard this as an obstacle to company fire inspections. Municipal Fire Administration states:

The rules of the fire department should prescribe that fire company officers must arrange to have inspections made. . . . Frequently up to 50 per cent of the fire companies are given inspection assignments each week-day. . . . Experience has shown that with the use of two-way radio there is little delay in answering alarms and frequently response has been speeded up where units on inspection have been near the location of the fire.⁵⁰

It seems obvious that with 50 per cent of the companies having inspection assignment, even when care is taken to " . . . see that enough men are in quarters for immediate response to fire calls in every district,"⁵¹ there will be many companies short of men when the men are sent out alone from the station, other companies will be delayed while they assemble their men for response and others will have longer running distances to the alarm--exactly the situation that would prevail with a unified operation. It would seem that if firemen are away from their apparatus on fire business the fire authorities have no objection, but if they are away from their apparatus on other types

⁵⁰Municipal Fire Administration, 1956, op. cit., p. 290.

⁵¹Loc. cit.

of public safety business such as police work, then the practice is undesirable and unsafe.

From the fire literature on the subject of inspections, it seems apparent that if patrolmen are equipped with individual radio receivers on their person as they go about their business, and if department regulations establish clear-cut priorities favoring fire alarms over non-life-threatening police incidents, and if there are adequate numbers of patrolmen-firemen for workload conditions, there is no reason why the unified operation system should not be entirely acceptable and practicable.

Little information is available on the actual experience of unified departments, and there seems to be some variance between the experience of large and small communities in the response time of their integrated patrol cars. Evanston, Illinois, reports that in five months' experience police arrived before or simultaneously with the pumper in 61.8% of the occasions.⁵² Sunnyvale, California, reports that the first two public safety officers on patrol showed an average response time to alarms shorter than the fire apparatus in residential and commercial locations and equal in time in industrial areas and averaged half a minute slower than the apparatus at vehicle fires.⁵³ Winston-Salem, North

⁵²Bert W. Johnson, "Evanston's Fire-Police Cooperation," The American City, LXXV (September, 1960), p. 175.

⁵³Scott, op. cit., Appendix B, p. B4.

Carolina, experienced the arrival of the fire-police patrol car with or before the fire apparatus 79.6% of the time in a six-month period.⁵⁴ Peoria, Illinois, reports its "Cooperating Patrolmen" arrived ahead of or with the fire apparatus in 60.7% of the 1,694 fire alarms in the first six months of their integrated operation, stating that they deliberately de-emphasized response speed by patrol cars as a safety measure.⁵⁵

These figures apparently satisfy the public officials who must satisfy the public, indicating that in practice (and probably because so few fires are actually serious) such a response pattern is acceptable when balanced against all the other pressures of public safety administration.

"Balance Between Fire and Police Suffers." This is an argument against unification which has a valid basis, as McNeil points out.⁵⁶ It is incontrovertible that there are very few individuals trained in both police and fire administration. Equally true is the fact that many firemen are completely uninterested in police work and that the corollary is true for many policemen. However, the coordination of diverse specialties in an organization is

⁵⁴Gold, et al., op. cit., p. 8.

⁵⁵August A. DeBard, Jr., Report on Police and Fire Departments (Peoria, Illinois: Report of City Manager to City Council, No. CMD-26-63, undated), p. 8.

⁵⁶McNeil, op. cit., p. 75.

not new to the field of public administration. Mayors, city managers, public safety commissioners, and public safety directors in cities with separated departments have always had the problem of securing proper balance of attention between the police and fire services with generally successful results over a period of time. This problem can be resolved by employing a professionally-prepared administrator as director of police-fire activities, recognizing that administrative skill is the prime concern, not his performance as a fireman or policeman.

"Police and Fire Emergencies Conflict." This argument focusing on simultaneous emergencies can be easily disposed of since the problem exists even when separated departments are provided. If a city has a major fire or conflagration, the traffic and crowd control and building evacuation problems of the police are very substantial. Should they have a bank robbery at the same time, what would they do in a small community? They would do the best they could under the conditions by doing what seemed most important at the time.

If simultaneous emergencies occur frequently, then the on-duty manpower must be adequate " . . . to handle efficiently any work load that may be reasonably anticipated."⁵⁷ This statement in an authoritative handbook on

⁵⁷Tryon, op. cit., section 10, p. 10.

fire protection also applies to police operations and, therefore, applies to combined police-fire operations.

Beyond the question of adequate forces on duty for prevailing conditions, is the question of certain policy judgments. Reading the anti-integration literature published by the fire service gives one the impression that police work is one emergency after another, or at least this appears to be the opinion held by the fire people.

Actually, relatively few of the thousands of police calls handled each year represent emergencies in the sense that fire alarms represent emergencies.⁵⁸ For the definition of "emergency" when considering the possibility of conflicting demands and, therefore, the necessity for establishing a priority policy, is obviously centered almost entirely on the degree of apparent or likely threat to life or safety or destruction of the city.

Fire alarms, unless the lack of life threat is clearly known when the alarm is received (and this, based on fire protection experience, is limited almost entirely to fire situations reported outside a building), obviously represent an emergency. Calls for inhalator-resuscitator service also represent an obvious emergency as do reports of suicide attempts, muggings, armed robberies, injury vehicle accidents and the like. It seems unlikely, except

⁵⁸James, A Frontier of Municipal Safety, op. cit., p. 50.

in isolated communities (which must, therefore, strengthen their on-duty force because of their isolation) that in these days of mutual aid fire agreements, and increasingly cooperative police work that suitable priorities and procedures cannot be implemented which will deal with most simultaneous emergencies in a manner satisfactory to the citizens being served.

"Police and Fire Duties Dissimilar." Reference to the large number of volunteer and industrial fire departments of high caliber easily refutes this argument. Competency of a fire department appears more related to quality of administration than to the occupations or backgrounds of those performing fire duties. Director Leonard of Oak Park, Michigan, has frequently described to the writer the relative ease with which men having competence in police work have adapted to fire fighting duties. This would appear to be related to the flexibility of thinking which is essential to competent police performance, making the transition to learning fire fighting skills not too difficult if the willingness exists.

However, it is apparent that any organization will have individuals who cannot (or will not) adjust to changing demands which their occupations make of them. Solutions to this problem, such as separation from the service, transfer to other duties or departments, re-education and indoctrination are problems of personnel administration and not

pertinent to this discussion. Again, the problem is an administrative one, for to contend that the members of the police and fire service are generally of such low ability that they cannot learn firefighting and police work, in the face of the navy wartime fire fighting experience and the example of the thousands of volunteer fire departments in the United States, is to hold a low opinion, indeed, of our police and fire service personnel--an opinion which is contrary to existing knowledge of human capabilities.

"Training Is Adversely Affected." This argument merits serious consideration. Few police chiefs are satisfied with the level of training they are able to provide and it seems that few fire chiefs are satisfied, either. When carefully analyzed, a comprehensive training program in either branch of the public safety services is an expensive program which requires skillful and competent management.

Of the two public safety services, police training at the generalist (patrolman) level appears more complex than does the fire training at the comparable rank (fireman, hoseman, etc.). For police work deals to a much greater degree with intangibles such as human nature, trends in court decisions and social science concepts, while the fire service is dealing in its fire fighting activities with a subject matter primarily physical and mathematical in nature.

Ladders are raised at certain angles, hydraulic

systems operate in a predetermined manner, water supply through hose streams and the performance of pumps are well understood, as are most of the matters such as knots, forcible entry, use of tools and appliances and the like which the fireman-level of the fire service hierarchy must understand. Indeed, fire training involves primarily skills for the lowest level fire fighter and fire training activities at this level of employee have been referred to as "drill" for years with good reason, since repetitive drill is probably the best way in which to teach these matters originally and then maintain a level of proficiency and teamwork necessary for effective performance of essentially manipulative skills.

Command and direction of fire fighting operations, pre-planning of fire fighting at target hazards, and technical fire inspections are subjects which require considerably more ability and interest than does learning the basic fire fighting manual skills. These are specialist areas which should be performed by specialists and the importance of their successful performance probably justifies even the smallest communities having at least one full-time fire protection specialist. It would appear that recruit training in both services is less a problem than is advanced training in specialties, supervision and administration, and refresher in-service training.

Because of the undeniable importance of adequately

trained public safety personnel, the public safety administrator must determine the necessary training time and then convince his policy and budget making superiors of its importance so that adequate funds and personnel and facilities may be allocated.

III. TRENDS IN POLICE-FIRE UNIFICATION

It cannot be categorically asserted that something as geographically diffused and involving such a relatively small number of cities and embracing such a wide variety of organizational and operational schemes as does the concept of police-fire integration is showing a trend, and yet, certain indications exist which are suggestive of several trends.

The controversy over police-fire unification which was fanned to its highest heat by national fire protection organizations in the middle 1950's seems to be dying and the opposition to the concept is manifesting itself at the local level with each new proposal for use of the concept, rather than nationally.

McNeil points in his thesis to a trend toward use of the concept by increasingly larger cities, and recently Peoria, Illinois, a city of 100,000 population, has become the first to use police-fire integration to reduce costs and personnel outright.

Opposition Weakening

Except for opposition from the International

Association of Fire Fighters AFL-CIO and its locals and certain regional fire chiefs associations, resistance to the integration concept by the professional fire protection agencies appears to be lessening. An illuminating example of this is obtained by comparing the first and second versions of the NBFU special interest bulletin on the subject of combining police and fire departments. Following side by side are excerpts from the November 30, 1953, issue and its revision of August, 1961.⁵⁹

1953

Fundamentally, a fire department must be in constant readiness to answer an alarm. . . . This prime requisite cannot be accomplished when firemen are out performing the duties of a policeman.

. . . It seems evident that the two types of work . . . are quite incompatible. No community has yet developed a plan of combined fire-police service which has proven feasible and practical.

1961

A fire department must be constantly available to respond to an alarm. . . . Such conditions generally cannot be met when personnel are performing police duties. . . .

. . . no community has yet developed a combined fire-police service which has provided a properly manned and adequately trained fire force.

The 1961 statement on inadequate manpower must be evaluated in light of other authoritative statements on the subject of fire department manning. For example, Special Interest Bulletin No. 230 published September, 1959:

⁵⁹Fire and Police Departments--Combining of (New York: National Board of Fire Underwriters, Special Interest Bulletin No. 300, November 30, 1953); superseded by revision published August, 1961.

. . . No departments are adequately manned today except for those in a few of the larger cities. . . . Between 1950 and 1959 the strength of paid fire departments has been reduced to an average of 0.43 members on duty per thousand population, and 3.4 members per company; only 11 of the 308 departments were maintaining an average of 5 or more members on duty with all companies.⁶⁰

Special Interest Bulletin No. 300 then goes on to say in its revised 1961 version:

In those municipalities in which there is some form of combined fire-police service, fire defenses are evaluated by the National Board of Fire Underwriters on the basis of the protection furnished, irrespective of the specific plan in use for providing manpower. The important factor is the ability of the city to provide an adequate number of properly trained and readily available fire fighters, rather than the specific plan under which these men are organized.⁶¹

It can be seen that the NBFU has greatly modified its stand on integration from outright opposition to a determination to measure its results. In practice, the application of the grading schedule by the NBFU to the unified police-fire departments has not been revised to conform with Bulletin No. 300. The grading schedule counts police-fire officers on patrol as paid call-men and gives credit for them on the basis of four police-fire officers on duty equalling one fireman on duty in the station.⁶²

⁶⁰ Fire Department Manning--On-Duty Strength (New York: National Board of Fire Underwriters, Special Interest Bulletin No. 230, September, 1959).

⁶¹ Fire and Police Departments--Combining of, op. cit.

⁶² Statement to the writer by Oak Park Director of Public Safety Glenford Leonard, commenting on the grading of his department by the NBFU.

If the prestige of the national fire protection organizations is removed from the opposition to unification, it would appear likely that other cities may be encouraged to attempt the plan.

The police organizations, apart from some local opposition, have generally not taken a definite stand on unification, as McNeil shows.⁶³

Use by Larger Cities

McNeil pointed out the change in thinking concerning the supposed relationship between size of city and feasibility of integration.⁶⁴ Originally most persons supposed it was a "small town" system not adaptable to larger cities, even though James had hinted at its adaptability to larger cities in his work on the small city⁶⁵ and had then presented a specific model for a city of 100,000 population in A Frontier of Municipal Safety.⁶⁶

Recently, Peoria, Illinois, with over 100,000 population, has adopted a scheme of integration,⁶⁷ joining such cities as Evanston, Illinois; Dearborn, Michigan; and

⁶³McNeil, op. cit., p. 62.

⁶⁴Ibid., pp. 100-101.

⁶⁵James, Police and Fire Integration in the Small City, op. cit., p. 62.

⁶⁶James, A Frontier of Municipal Safety, op. cit., pp. 101-141.

⁶⁷Peoria Journal-Star, February 14, 1962, p. 1.

Winston-Salem, North Carolina; which are other cities of this population group using some form of police-fire unification. The Peoria operation is still in effect as of the time of this writing, although under heavy political attack which has continued from its beginning.⁶⁸

Unification to Reduce Costs

Occasionally integration has been discussed as a means of reducing manpower in a stable public safety situation. The idea has usually been rejected as unrealistic although possible.⁶⁹ The political implications of layoffs and public demands for better levels of service are commonly cited as reasons why unification should not be used in this manner. Recently, Peoria, Illinois, defied unification tradition and did just this. Peoria firemen, commenting on the abolition of 39 fireman positions, in a statement to the city manager, correctly labelled the plan as " . . . unlike any other effort of consolidation of Fire and Police Departments ever proposed before."⁷⁰ A Cooperative Police Officer Division was established and volunteer police officers were trained in fire fighting. Ten firemen

⁶⁸Peoria Journal-Star, March 4, 1963, editorial page.

⁶⁹James, A Frontier of Municipal Safety, op. cit., p. 160.

⁷⁰August A. DeBard, Jr., Police-Fire Partial Combination (Peoria, Illinois: Report of the City Manager to the City Council, March 8, 1963), p. 1.

were transferred to the police department and assigned duties such as wagon driver, turnkey and the like not involving exercise of police arrest authority. Nine firemen retired or resigned and twenty were laid off.⁷¹ The money saved was used to provide a 4-6% salary and wage increase to all city employees.⁷²

Peoria started considering unification in 1955 when George E. Bean was city manager. His report on November 7, 1955, pointed to the trend of increasing personnel costs, an upcoming 56-hour firemen's work week and the gradual erosion of the city's capital improvement budget to meet increasing salary costs.⁷³ The plan was rejected, and then revived again in 1957 after the state legislature adopted a mandatory requirement for the 56-hour work week for firemen.

The 1957 plan proposed a 32% increase in the patrol force by transfer of firemen to policing, adoption of a 56-hour fire work week and a 40-hour police work week, and no decrease in on-duty fire manpower at a conversion cost of \$25,000 and annually recurring cost of \$20,340.⁷⁴ The

⁷¹Ibid., p. 3.

⁷²Peoria Journal-Star, January 24, 1962, p. 1.

⁷³George E. Bean, A Report on the Request for Reduced Hours and Increased Pay for Police and Fire Personnel, op. cit., pp. 4-6.

⁷⁴George E. Bean, Integration of the Fire and Police Departments/A Report to the City Council (Peoria, Illinois: Report of the City Manager to the City Council, June 24, 1957), Charts XIII and XIV.

cost for work week reductions under the traditional separated-department system was estimated at \$143,000 annually after the second year.⁷⁵ The plan was rejected; and then adopted in 1962, as related above, but required the lay-off of 29 men to provide the same cost advantage to the city. This is the first known time that unification has involved lay-off of existing employees. The significance here is that a plan for integration was presented demonstrating significant savings. It was rejected as too radical until citizen resistance to tax increases and an obvious need for additional revenue and employee salary increases caused its revival and adoption.

From this discussion it can be seen that unification of the police and fire protection functions in a single organization has been adopted successfully by a number of cities in various states of the United States. These cities have generally measured "success" in terms of more efficient service and in terms of dollar value. The value of this concept of unification for a university has not been studied and the following chapter will begin such a study by considering the nature of police and fire protection at the East Lansing campus of Michigan State University.

⁷⁵Ibid., Chart VI.

CHAPTER III

THE NATURE OF PUBLIC SAFETY PROTECTION AT MICHIGAN STATE UNIVERSITY

The general public seems unaware of the similarity between cities and large universities in their operations and public service responsibilities. Most large universities perform many or all the functions of cities of comparable population, including police protection, water supply, street construction and maintenance, operation of parking facilities, sewage disposal, and utility services such as steam and electrical distribution, as well as the maintenance of sidewalks, grounds and buildings to an extent which exceeds the responsibilities of a city of similar population or area. A few institutions maintain fire departments,¹ although most rely on the protection of municipal fire departments if adequate municipal protection is available.² Police protection is invariably a function of any sizable college or university, although many prefer not to describe their protective agency as a police department.

¹Among them, Stanford, University of Maryland, University of Illinois, Oklahoma State University, University of Notre Dame.

²James W. Harvey, The University and the City (Berkeley: University of California Bureau of Public Administration, December, 1958), p. A-2.

I. UNIVERSITY CHARACTERISTICS

The pioneer land grant college, Michigan State University, has an area of more than seven square miles with an on-campus resident population of approximately 18,500 persons in Fall, 1962. The campus at East Lansing is actually located in the cities of Lansing and East Lansing, and in four townships--Lansing, Meridian, Alameda and Delhi. The built-up area of the campus occupies approximately 900 acres and is expected to expand into an additional 900 acres within a very few years. The campus includes 422 permanent and 128 temporary buildings as well as 40 miles of roadway, 55 miles of sidewalk, 3 1/2 miles of bicycle path and more than 12,000 surfaced parking spaces.³ University buildings, equipment and land had an at-cost value of \$168,280,620 in June, 1962,⁴ contrasted with the assessed valuation of East Lansing property of \$39,047,200 and estimated true cash value of East Lansing property in 1962 of \$117,000,000.⁵ Currently (June, 1963) nine major buildings are under construction, including a

³ John Green and Jerry Moskal, "MSU 'Sun' Sheds Light Across Mid-Michigan," The State Journal (Lansing, Michigan), May 21, 1963, p. B-8.

⁴ Michigan State University Publication: Financial Report 1961-62 (East Lansing: Michigan State University, Volume 57, No. 7, December, 1962), p. 3.

⁵ A Report to the Citizens...City of East Lansing, 1962 (East Lansing, Michigan: City of East Lansing Annual Report, 1962), pp. 18-19.

1,000-car parking ramp, and additional buildings already authorized will bring the value of buildings under construction in Fall, 1963, to \$56,000,000.⁶

The university has the largest resident population on its campus of any university in the United States and also has the largest resident female population of any United States college or university. The population includes 6,600 persons in 203 married-housing apartment structures. The balance of the population lives in 23 dormitory buildings and two dormitories are being opened each Fall to add a designed capacity of 2,400 new residents to the campus every year through 1965.⁷ The 1962 Fall Term enrollment exceeded 25,000 students on the East Lansing campus and total enrollment could exceed 40,000 by 1970 or go even as high as 48,000 in that year, although the university would prefer to hold its enrollment at not more than 35,000 if adequate facilities are built throughout the state to provide for the expected enrollment demand.⁸

Traffic is a major problem for the university. It is the largest single attraction for state trunkline traffic in the Lansing Metropolitan Area which included a population

⁶The State Journal (Lansing, Michigan), July 10, 1963, p. 1.

⁷Green and Moskal, op. cit., p. B-8.

⁸Michigan State News (East Lansing: Michigan State University), April 5, 1963, p. 1.

of almost 300,000 in 1960.⁹ Traffic volumes peak on the hour throughout the academic day and produce more traffic congestion than a city of similar population would experience. Manual direction of traffic at intersections has been maintained for years and traffic-actuated traffic signals are being planned for two problem intersections. University planners have concluded that construction of additional parking ramps in the future may be the only feasible means for providing adequate parking while still providing a reasonably compact academic area. Campus planners are also studying the use of an intra-campus bus system for future use which would be a greatly expanded version of the present intra-campus bus service.

Fall Term, 1963, will witness the opening of Interstate freeway 496 along the west border of the university with a major interchange on university property. Within five years construction is planned for the extension of a high-volume crosstown arterial highway through the campus, expected to carry in excess of 32,000 average daily traffic vehicles by 1980.¹⁰ The state highway department expects 25,000 vehicles to enter the campus each day from this single highway route by 1980.

⁹Lansing Area Trunkline Plan (Lansing, Michigan: Michigan State Highway Department, September, 1961), unnumbered page discussing "Proposed Trunkline Relocation Across M.S.U. Campus."

¹⁰Ibid.

The university traffic characteristics resemble those of a central business district in a metropolitan area in contrast to the traffic characteristics of the usual city of 20,000--the university is the destination for high traffic volumes rather than an artery for these high traffic volumes passing through the city enroute to the central business district of the core city.

The population of a university community is unlike that of the typical city of comparable size, if for no other reason than the proportionately high number of young adults and older adolescents. The community exists to educate thousands of youngsters just starting an independent life of their own away from home. The education process requires an exceptional degree of freedom from disorder and the threat of violence so that the students may circulate about the campus as their educational needs require.

Police protection is a primary function of any city, but the bulk of a university population seems to doubt the need for police protection in a university, and time and funds are not available to impress the university population with its police problems. The educational problems of the university have far greater priority in the university communication process and police protection must always remain an auxiliary function of the educational community.

Regulating a population such as this under these

conditions is a difficult and exasperating task. University police personnel have a human and public relations problem which is not faced by most other law enforcement agencies. The artificial environment of the educational process and the regulatory duties of university police combine to make the police the personification of all the varied "evils" which the students, faculty, staff and visitors see in the administration of a major university. The frustrations of thousands of youngsters who encounter all the complex social and regulatory controls of a large residential university (instead of the "adult freedom" they had expected) add to the police problems.

II. FIRE PROTECTION AND SERVICE

The prevention, fire fighting and service activities commonly associated with municipal fire protection activities are all necessary at a university. A written fire protection agreement and financial support to the city secures the fire fighting protection of the East Lansing Fire Department for university property, and also secures inhalator-resuscitator service. The university provides its own fire prevention service.

Fire Protection Agreement

In September, 1946, the university and the City of East Lansing entered into a written agreement for provision of fire protection to the university by the city--

an agreement authorized by special act of the legislature, although the city and university had jointly undertaken maintenance of a fire department since a fire department was established by the city in 1924.¹¹ The full text of the agreement is included as Appendix A, but it is worth noting here that the agreement may be terminated by either party with three months' notice and with appraisal and settlement of all fire fighting equipment purchased subsequent to the agreement, and that the university is obligated to pay one-half the fire department expenditures except those for fire prevention activities.

This agreement has several obvious defects in light of present conditions. These include:

1. The absence of any standard for measuring whether the "adequate and ample" protection provided for in the agreement is actually being furnished.

2. The fire department is specifically relieved of any obligation for making fire inspections on the campus--yet it is an axiom of the fire service that " . . . fires will be much more readily controlled when fire fighters are familiar with the premises."¹²

3. The university is committed to a "blank check" expense each year without participating in any process to

¹¹A Report to the Citizens...City of East Lansing, 1962, op. cit., p. 6.

¹²Tryon, op. cit., section 10, p. 100.

determine in advance the value of the expenditure to the university.

4. The 50 per cent university share of fire department expense might also be questioned after sixteen years of growth and change by the city and the university.

Fire Protection Agency¹³

According to the fire protection agreement, the East Lansing fire chief is responsible for fire fighting activities on the university property. He directs a department that has grown to 31 men and eight vehicles (including three automobiles) since its establishment in 1925. The 31 personnel include the chief, an assistant-chief-fire marshal, three lieutenants, four sergeants and twenty-two firemen. The chief and assistant-chief-fire marshal work eight-hour days, five days a week, and provide vacation relief for the lieutenants. The lieutenants work twenty-four-hour shifts on a 56-hour week which amounts to approximately one day on duty and two days off duty.

Organization. The sergeants and firemen are divided into two shifts of 24 hours on--24 hours off, with a standard "Kelly Day" off every twelve days to provide a 70-hour work week. Each shift in the campus fire station

¹³Data about the fire department taken from: Interviews with the Chief and Assistant Chief in March, 1963, and annual reports of the fire department, unless otherwise cited.

has a sergeant and six firemen assigned. A sergeant and five firemen are assigned to each shift in the city's fire station. Allowing the standard 10% for vacation, sick leave and other scheduling problems, there should be nine men on duty at the two fire stations every day if vacations are properly scheduled.¹⁴ In addition, a lieutenant or chief officer is on duty at all times, providing ten men on duty and available for fire fighting on any normal day.

Should the work week of personnel with less than the rank of lieutenant be reduced to 56 hours per week, comparable to the hours of the lieutenants and of the Lansing fire department, six additional firemen would be necessary to maintain the present on-duty strength. The shortage of company officers existing under the 70-hour work week would be further aggravated and two additional company officers would have to be designated.

In terms of the 50% financial support from the university, excluding the fire marshal as provided by the agreement, the university can be said to "employ" 15 fire fighting personnel of various ranks, and would employ 18 men if the 56-hour work week prevailed.

Fire department records reveal that fire personnel spent approximately 0.8% of an estimated 46,800 available

¹⁴Based on work week factor of 2.59 for a 72-hour work week, modified to 2.66 for a 70-hour work week. Factor taken from: Tryon, op. cit., table 10-27B.

man hours in 1959 in response to fires and fire alarms. This figure of approximately 1% spent on alarm response seems in accord with the reported experience of other fire departments.¹⁵

Equipment. The fire department has purchased a considerable quantity of apparatus in recent years. A 750-gallon per minute pumper and a service ladder truck are housed in first line service in the city station along with an inhalator car, a command officer's car and a station wagon used by the fire marshal.

The campus station houses two 750-gallon per minute pumpers and an aerial ladder truck with 85-foot aerial ladder.

Except for water carrying capacity for rural fire fighting, the basic types of apparatus are adequate for the varied fire protection responsibilities of the fire department, which range from very large rural buildings in the university farms through single family dwellings in the city to multiple-story residential and laboratory buildings on the campus. Equipment carried on the apparatus is adequate and appropriate for the normal fire fighting activities of the fire department in one or two story residential structures, but the equipment needed for effective and efficient fire fighting in large, multi-storied buildings is not generally available as measured against the

¹⁵ See p. 14, Supra.

standards of the National Board of Fire Underwriters.¹⁶ Items of equipment most noticeably lacking on the fire apparatus are those essential for efficient handling of 2 1/2-inch hose streams at large fires including hose clamps, hose jackets, hose holders or portable deluge guns. "Cost of such equipment when measured against its useful life and its great utility at such fires makes such expenditures a good investment in fire protection and effective utilization of limited fire fighting manpower."¹⁷

Fire Prevention Agency

Fire prevention on the campus is the responsibility of the Director of Public Safety exercised through the fire safety officer in four major functional areas:

1. Review of proposed building and remodelling blueprints and submission of recommendations for fire safety features.
2. Routine and continuous inspection of structures for discovery and abatement of fire hazards.
3. Planning, inspection and patrol of public events to secure adequate attention to fire safety.
4. Conducting educational programs among the employee

¹⁶Specifications for Motor Fire Apparatus (Boston: National Fire Protection Association standard No. 19, May, 1961), pp. 48-53.

¹⁷The Fire Protection Grading Process as Related to the Economics of Fire Protection (Los Angeles, Berkeley: League of California Cities, April, 1961), p. 22.

and student groups.

The department of public safety also maintains all fire extinguishers, standpipe hose and inspects local fire alarms in university buildings, using two men in 1961-62 responsible for 4,300 fire extinguishers, 52 fire alarm systems and 36 sprinkler systems--an increase of 1,000 extinguishers (30.3%) since the fiscal year 1958-59.¹⁸

Fire Incidence and Conditions

The lack of comparability between university and fire department records of fires and fire alarms because of the different uses which the agencies make of their records forces referral to both records systems in analyzing university fire conditions. Wherever necessary, the information used has been reconstructed to produce data of reasonable reliability and accuracy and to produce comparability where necessary either for presentation in this report or for ensuring a reasonable standard of accuracy. Generally, fire department records have been used for analysis of fire runs and alarms and for actual fires and university records have been used for analysis of the causes of actual fires involving large losses and for arson records.

Fire Incidence. Tables I and II show the principal characteristics of fire runs made by the fire department

¹⁸Annual Reports of the Department of Public Safety, Michigan State University.

TABLE I
Eight-Year Fire Alarm Experience¹⁹

	1955	1956	1957	1958	1959	1960	1961	1962
Actual Fires								
Apartment buildings	2	2	5	2	2	2	5	0
Dormitories	0	5	3	4	7	4	12	6
Hotel/Hospital	0	0	0	0	1	0	0	1
Class/Laboratory	3	1	0	1	1	0	2	4
Farm Structure	0	3	0	1	2	1	1	1
Other Structure	2	3	3	4	2	0	1	3
Sub-total	7	14	11	12	15	7	21	15
Vehicle	3	3	1	5	5	8	6	9
Other Non-structure	15	11	12	17	13	16	15	28
Total Fires	25	28	24	34	33	31	42	52
No Fire Involved								
False, accidental alarms	4	4	8	8	5	10	5	5
Smoke, odors, ballasts	28	33	34	59	53	75	79	77
Overheated oil burners	14	25	24	19	8	0	0	0
Miscellaneous & Service	16	25	55	41	29	30	43	33
Total Non-fire	62	87	121	127	95	115	127	115
Total Fire Runs	87	115	145	161	128	146	169	167
Inhalator Runs	34	31	21	27	26	32	27	53
	121	146	166	188	154	178	196	220

¹⁹Annual Reports, 1955-1962 (East Lansing: East Lansing Fire Department, 1955-1962).

TABLE II
Cause of Fire Run Incidents and Fires²⁰

	Fire Run Incidents										Fires	
	1955	1956	1957	1958	1959	1960	1961	1962	Total Incid.	No. Fires	% of Total	
Careless smoking	3	6	7	12	11	12	19	15	85	62	23.2	
Vehicles	5	3	4	7	9	9	12	17	66	40	15.0	
Unknown	7	4	3	4	5	1	6	8	38	27	10.1	
Burning rubbish, trash	6	1	1	2	2	2	1	7	22	22	8.2	
Electrical appliances	15	14	21	41	34	48	37	35	245	14	5.2	
Construction equip. & pract.	2	3	7	2	1	2	2	2	21	13	4.9	
Housekeeping, carelessness	1	0	1	4	2	2	3	4	17	13	4.9	
Children & matches/flame	1	3	1	1	3	0	0	2	11	11	4.1	
Spontaneous ignition	0	0	2	4	0	0	1	2	9	8	3.0	
Railroad equipment sparks	1	0	1	0	1	1	1	3	8	8	3.0	
Arson	0	0	0	1	1	4	2	1	9	7	2.6	
Food, grease on/in stove/oven	2	8	6	3	3	3	5	1	31	6	2.3	
Miscellaneous	0	11	11	10	2	5	2	8	51	6	2.3	
Heating, drying equip./controls	0	2	3	0	2	0	0	1	8	4	1.5	
Flammable liquid spills, leaks	5	1	5	7	3	4	8	8	41	4	1.5	
Explosions, experiments, processes	1	1	0	0	1	0	1	1	5	3	1.1	
Oil burners	14	25	26	19	9	0	0	0	93	3	1.1	
Defective wiring	0	2	2	1	2	1	0	0	8	3	1.1	
Incinerators	6	8	11	1	8	14	21	31	100	3	1.1	
Smoke, odor, gas	13	13	14	24	26	18	24	18	150	2	.7	
Engines, machinery	0	0	0	0	0	2	1	0	3	2	.7	
	82	105	126	143	125	128	146	164	1021	261		
Services, assists, false alarms, chemical & gas leaks	14	16	14	16	8	18	17	8	111	6	2.3	
	96	121	140	159	133	146	163	172	1132	267	99.9%	

²⁰ Ibid.

on the campus. Actual fires are defined by the fire department as fires at which fire department personnel performed extinguishment or salvage activity. Therefore, these "actual fire" figures are not comparable with university figures which include all fires regardless of how extinguished, including many fires never reported to the fire department.

Fire losses in the eight years of fire department records studied are summarized below.

TABLE III

Eight-Year University Fire Losses²¹
(rounded to nearest \$100)

Year	Structure	Contents	Total Building	Miscell. & Vehicle	Total Loss	Fires over \$1,000 Building Loss
1955	\$2,300	\$4,300	\$6,600	\$100	\$6,700	3
1956	14,700	4,700	19,400	500	19,900	2
1957	300	1,000	1,300	3,800	5,100	2
1958	4,300	4,700	9,000	1,300	10,300	3
1959	15,800	10,700	26,500	1,300	27,800	5
1960	4,300	1,500	5,800	1,300	7,100	1
1961	8,800	12,800	21,600	1,300	22,900	1
1962	10,600	5,000	15,600	900	16,500	2
					<u>\$116,300</u>	<u>19</u>

Fire Conditions. The figures presented above indicate that university expansion brings with it an increasing number of fires in spite of improving structural conditions on the campus. The years covered have seen the removal of the barracks married housing units, removal of a number of older farm structures (and construction of very much larger

²¹Ibid.

farm structures), removal of a number of temporary instruction and office buildings with the complete removal of such structures probable within three years. The frequency of fires in terms of both resident population and building area protected would seem to be decreasing steadily, as shown by reference to the dormitory and apartment fire figures and to the total fires shown by both fire department records and the university records. It is possible that the sudden increase in 1962 may indicate only an unusual year, although it would not be surprising to see this increase continue in future years as the resident population increases.

The following figures provide an interesting insight into the nature of the fire problem on the campus. Taken from the annual reports of the university Department of Public Safety, they indicate that the proliferation of fire extinguishers and standpipe hoses in university buildings is a very effective and inexpensive fire department. One can also conclude that the lack of a central fire alarm system offers potential for a serious, if not disastrous, fire since the university records indicate that most fires extinguished without fire department aid were also fires at which the fire department was not called or was called only after some extended delay.

Set fires, including arson and pranks, represent a severe hazard potential in the university community.

TABLE IV

Total Fires Known and Method of Extinguishment²²

Extinguished by:	1959-60	1960-61	1961-62	Total	Per Cent of Total
Fire Department	23	28	63	114	40
Building fire equipment	30	39	34	103	36
Other means/burned out	36	22	10	68	24
Total fires known	89	89	107	285	100%

Without an automatic fire detection and alarm system, the university is vulnerable to serious losses. Further, the tendency of students to use fire in their pranks can nullify a great deal of the protection which the university builds into its buildings through good design and circumvent the prevention and inspection program. The following table shows the known incidence of arson fires.

TABLE V

Incidence of Arson Known

Year	Police Records ²³	Year	Fire Dept. Records ²⁴
1953-54	14	1954	1
54-55	8	1955	0
55-56	7	1956	0
56-57	14	1957	0
57-58	13	1958	1
58-59	9	1959	1
59-60	10	1960	3
60-61	9	1961	2
61-62	20	1962	1
	104		9

²²Annual Reports of the Department of Public Safety, Michigan State University, 1959-60 - 1961-62.

²³Ibid., 1953-54 - 1961-62.

²⁴Annual Reports, 1955-1962 (East Lansing Fire Department), op. cit.

TABLE VI

Incidence of Major Building Fires

Date	Building	Cause	Loss
2/22/55	Agriculture Hall	electric hot plate	\$1,728.42
5/14/55	Horticulture Bldg.	unknown	1,350.00
*12/8/55	Animal Husbandry	propane gas leak	3,097.36
** 1/27/56	Home Economics	transformer failure	4,896.00
* 1/30/56	Anthony Hall	arc welding	1,000.00
12/15/56	Animal Disease Barn	overheated stove	16,090.00
* 2/2/57	Student Services	overheated stove	996.65
* 8/6/57	Stadium	welding	3,716.00
?/?/57	Berkey Hall	defective fuse panel	1,200.00
* 1/8/58	Farm Lane Pump House	salamander	3,805.00
3/3/58	Fairchild Theatre	clothing near light	1,363.40
4/19/58	Federal Poultry Plant	lightning	2,700.00
1/25/59	906-C Maple Lane	defective wiring	4,130.28
7/22/59	939-D Cherry Lane	children & matches	3,500.00
***10/29/59	Kedzie Chemical Building	explosion	10,000.00
12/28/59	Quonset Post Office	arson	4,700.00
12/31/59	Federal Poultry Plant	defective oil burner	4,000.00
4/29/60	3974 College Road	sparks on roof	3,195.10
* 8/19/60	Owen Graduate Dormitory	welding	6,000.00
2/10/61	Federal Poultry Plant	heater motor	19,750.00
3/2/62	Horticulture Barn	spontaneous ignition	7,800.00
7/25/62	WMSB-TV	defective wiring	6,678.24

*building under construction.

**fire department not called.

***laboratory experiment exploded; one killed, three injured;
loss figure does not include medical or similar expenses.

The incidence of serious loss fires, deaths and injuries is low, as might be expected under the structural conditions found in the university. Table VI (page 72) presents information on major loss fires compiled from both fire department and university records.

Analysis of fire causes and fire losses reveals that six of the 22 large loss fires involved buildings under construction and six involved buildings on university farms and the Federal Poultry Research installation.

TABLE VII

Distribution of Major Fire Losses by Month

January	4 fires	\$13,831.28 loss
February	3	22,475.07
March	2	9,163.40
April	2	5,895.10
May	1	1,350.00
June	0	
July	2	10,178.24
August	2	9,716.00
September	0	
October	1	10,000.00
November	0	
December	4	27,887.00

The winter months of December, January and February experience 52% of the fires and 58% of the losses, a not unusual pattern in most cities due to heating plant difficulties. This is also the case at the university where the eleven winter-month fires were attributed to:

heating systems	6
electric hot plate	1
transformer failure	1
welding	1
defective wiring	1
arson	1

Fire Alarm Incidence Distribution. The incidence of fire alarms is a matter of vital concern in any study of integration, because it must be determined whether fire alarm response will be compatible with police manpower distribution needs. Table VIII indicates the distribution of fire alarms by time of day, month and day of week. Other analyses have shown that fire alarms during rush hour traffic volumes are surprisingly rare, that an average of four occasions each year will present the conflict of a second fire alarm being received while fire apparatus is at a previous alarm and that on only one of these four occasions will they occur so close together that they are actually simultaneous and would call for a mutual aid response under an integrated police-fire scheme.

Inhalator Alarms. The fire department provides inhalator service to the university from its East Lansing fire station--stripping two of the men on duty in the station to make each inhalator run. Following is the occurrence of inhalator calls in the years 1955-62 showing rank order and per cent occurring by time of day, month and day of week. Detailed yearly showing of these figures is presented in Appendix IV.

The monthly figures show the effect of the school terms, and the July and August conferences. Saturday reflects the football games. In general, these alarms follow closely the population shifts on the campus.

TABLE VIII

Distribution of Fire Alarms (1955-1962)²⁵

Hour	Beginning	Number	Rank	Per Cent	Month	Number	Rank	Per Cent
12:00 M		38	16	3.2	Jan.	111	4	9.3
1:00 A		19	18	1.6	Feb.	91	9	7.6
2:00		15	20	1.2	Mar.	109	5	9.1
3:00		11	21	.9	Apr.	127	3	10.6
4:00		7	23	.6	May	129	2	10.8
5:00		7	24	.6	Jun.	109	6	10.6
6:00		10	22	.8	Jul.	57	12	4.8
7:00		19	19	1.6	Aug.	63	11	5.2
8:00		37	17	3.1	Sep.	67	10	5.6
9:00		62	11	5.2	Oct.	130	1	10.8
10:00		73	4	6.1	Nov.	100	8	8.3
11:00		62	12	5.2	Dec.	106	7	8.8
12:00 N		60	13	5.0		<u>1,199</u>		<u>100.0%</u>
1:00 P		68	8	5.7				
2:00		69	9	5.7				
3:00		55	14	4.6				
4:00		72	6	6.0				
5:00		73	5	6.1				
6:00		93	1	7.7				
7:00		74	3	6.2				
8:00		81	2	6.8				
9:00		71	7	5.9				
10:00		69	10	5.7				
11:00 P		54	15	4.5				
		<u>1,199</u>		<u>100.0%</u>				

Day	Number	Rank	Per Cent
Sun.	108	7	9.0
Mon.	207	1	17.3
Tue.	177	3	14.8
Wed.	195	2	16.3
Thu.	176	4	14.7
Fri.	170	5	14.2
Sat.	166	6	13.8
	<u>1,199</u>		<u>100.1%</u>

²⁵Ibid.

TABLE IX

Distribution of Inhalator Alarms (1955-1962)²⁶

Hour	Beginning	Number	Rank	Per Cent	Month	Number	Rank	Per Cent
12:00 M		10	13	4.0	Jan.	21	6	8.5
1:00 A		6	18	2.4	Feb.	19	9	7.7
2:00		2	20	.8	Mar.	23	3	9.3
3:00		1	24	.4	Apr.	26	2	10.5
4:00		2	21	.8	May	22	4	8.9
5:00		2	22	.8	Jun.	21	7	8.5
6:00		2	23	.8	Jul.	11	11	4.4
7:00		6	17	2.4	Aug.	21	8	8.5
8:00		7	16	2.8	Sep.	11	12	4.4
9:00		10	11	4.0	Oct.	38	1	15.3
10:00		13	8	5.2	Nov.	22	5	8.9
11:00		14	7	5.7	Dec.	13	10	5.2
12:00 N		19	3	7.7		248		100.1%
1:00 P		21	2	8.5				
2:00		28	1	11.3				
3:00		12	10	4.8	Day	Number	Rank	Per Cent
4:00		19	4	7.7	Sun.	31	6	12.5
5:00		14	6	5.7	Mon.	39	2	15.7
6:00		16	5	6.5	Tue.	33	5	13.3
7:00		13	9	5.2	Wed.	37	3	14.9
8:00		9	14	3.6	Thu.	29	7	11.7
9:00		4	19	1.6	Fri.	35	4	14.1
10:00		8	15	3.2	Sat.	44	1	17.7
11:00		10	12	4.0		248		99.9%
		248		99.9%				

²⁶Ibid.

III. ADEQUACY OF FIRE PROTECTION

The provision in the fire protection agreement for "adequate and ample units" indicates the intention of the university to secure effective fire protection, though quantity of fire fighting units as a measure of fire protection adequacy would leave much to be desired even if the term "units" were defined. The inference that the university intends to secure adequate protection is inescapable, however.

Determining adequacy of protection could be a very controversial process if absolutes were to be proposed. However, if minimum standards of adequacy were proposed in terms of the output to be expected related to the likely fire experience of the university, then the process would seem to be possible.

Experience in fire protection would indicate that minimum standards could be developed for the university by adapting the National Board of Fire Underwriters' Grading Schedule for municipalities to the university.

The NBFU Grading Schedule

The grading schedule, as it commonly is referred to, represents an attempt by the NBFU to provide an objective evaluation of local fire defenses based upon fire experience throughout the country.²⁷ Although some deficiency

²⁷Standard Schedule for Grading Cities and Towns of the United States with Reference to Their Fire Defenses and Physical Conditions (New York, Chicago, San Francisco: National Board of Fire Underwriters, 1956), p. 1.

point weightings and the manpower requirements have been criticized very strongly, few have questioned most of the other features evaluated. Major features of the schedule include water supply, fire alarm system, building and structural conditions, police department, fire prevention and the fire department.

The requirements of the grading schedule are appropriate for evaluating adequacy of fire departments except for the schedule's manning standards and deficiency point weightings. Therefore, use of the grading schedule has been limited herein to comparing the fire protection conditions, equipment and practices of university fire protection with the provisions of the grading schedule and the fire protection literature for areas where the grading schedule is not explicit, supplemented by NBFU Special Interest Bulletins and the fire protection literature.

Water Supply

Application of the formula for determining the required water flow for individual buildings, as given in the NBFU Special Interest Bulletin No. 266, indicates that the university water works system should supply somewhere in the neighborhood of 3,500 gallons per minute for fire fighting purposes over and above the volume of water required for normal university use.²⁸

²⁸Water Works Requirements for Fire Protection (New York: National Board of Fire Underwriters Special Interest Bulletin No. 266, May 4, 1948), p. 3.

The combination of inadequate pumping station capacity, long runs of eight-inch water main with inadequate cross-connecting on north campus, and the possibility of failure in portions of the system which are not adequately duplicated shows that the university system will not deliver this volume of water for fire fighting purposes even in the face of the expected condition that a major fire in a university building would attract a large crowd and might decrease the normal use of water.

However, this is not necessarily a serious problem, since the large pumping capacity of fire department pumpers immediately available in the two cities and townships can provide good water volumes from the river if adequately prepared drafting locations were constructed. Such drafting points have not been prepared because of the expressed view of the fire chief that they were not needed and he preferred to use fire hydrants.²⁹ Some of the university fire hydrants in critical locations have four-inch barrels and are located on four-inch extensions from the eight-inch main system. Thus they not only have an inherently weak delivery potential but also are located on mains which are relatively distant from the pumping station and vulnerable,

²⁹ Related to the author by Norman Steere, Assistant Director of Public Safety for Safety Services, Michigan State University, during various conversations concerning fire protection provisions for planning and construction of Bessey Hall.

because of inadequate cross-connecting, to a serious drop in capacity should any single hydrant or main develop a leak of consequence during fire fighting requiring large water volumes.

Fire Alarm System

The university has no fire alarm system although it has local evacuation alarm systems in many buildings which ring only in the building and do not summon the fire department. The sprinkler systems also are not connected to a central alarm system and the university has suffered several damaging water losses to buildings and contents due to breakages in sprinkler systems which were not discovered for substantial periods of time.

Lack of a fire alarm system is more important in the university than in most communities of similar population because its buildings are locked at night and on holidays, have relatively few persons in them during these times (although some of these may be working on hazardous experimental processes), and persons discovering a fire after it had progressed to the point it would attract attention from outside the building have to travel long distances before reaching a telephone. The lack of a central alarm system encourages delayed reports or a complete failure to report fires, since many persons assume that activating the local alarms also calls the fire department. The

university should display prominently signs informing the citizenry otherwise. Related to this is the difficulty of locating the fire in a large building, causing long delays in placement of apparatus, selection of proper standpipe and assembling of fire fighting manpower when the fire is finally located. Until now, this has not resulted in serious losses although the fire on May 14, 1955, in Agriculture Hall illustrates the potential. Fire and police personnel were distributed throughout the building seeking the location of the fire. It was found by police who attacked the fire and had to send a man to the attic to find the firemen.³⁰ Fire detection systems have been installed in many buildings around the country to counter these problems and the even more dangerous problem of delayed alarms in unoccupied buildings--a major cause of large loss fires. The university should consider installation of this type of alarm system since it accomplishes several of the most important fire protection objectives at once by discovering the fire, transmitting the alarm without delay to the fire department and showing the exact location of the alarm to arriving fire units.

Building and Structural Conditions

The university buildings, although of large area

³⁰Related by former university police sergeant Lester Jones.

and increasingly of greater height, have very favorable fire protection characteristics. Although the university does not install sprinkler systems in its new construction except in below-grade storage areas, incinerator rooms and areas of some unusual hazard, installations of fire department hose line standpipes have been good in recent years, and, except in below-grade areas, should be entirely adequate for fire fighting if the fire department is thoroughly familiar with the buildings and knows the location of the fire. Lack of the elaborate fire alarm system frequently found in industry means that the fire department rarely has specific information on fire location in the larger buildings and increases the delay in reporting the fire, since many persons try to determine the exact location when the local alarm system sounds before calling the fire department.

The difficult fire fighting caused by heat, smoke and gases, and difficulty of ventilation and access in below-grade building areas warrants the installation of a complete sprinkler system in all such building areas, especially since the occupancies of such spaces tend to change rapidly in the expanding and flexible university community and expansion of storage or other fire hazards into unsprinklered spaces in below-grade areas of a building is not likely to be accompanied by the expansion of the sprinkler system

into the rooms.³¹

The separation of buildings from each other on the campus in all but one area of older buildings on north campus ensures that the worst fire loss would involve only one building at most. Ultimate planning of the university calls for demolition of the old buildings placed very close together on North campus which presently constitute a serious exposure loss hazard. The volumes of water necessary to prevent the exposure in these old structures are barely available in the water main system, as far as fire flow tests of individual fire hydrants in 1959 would indicate, and well planned use of the river for water supply would be necessary if one of these buildings became fully involved in fire.

The central heating plant system of the university is its major asset in fire protection after building separation is considered, followed by the generally good house-keeping practices of management and the nature of the structural materials used in newer buildings

Police Department

The police force of the university routinely

³¹Cellar Fires (New York: National Board of Fire Underwriters Special Interest Bulletin No. 67, September, 1953); also Ventilating as an Aid in Fire Fighting (New York: National Board of Fire Underwriters Special Interest Bulletin No. 225, November, 1945); also Basement Pipe Inlets (New York: National Board of Fire Underwriters Special Interest Bulletin No. 242, February, 1947).

dispatches officers to every fire alarm in sufficient quantity to shut off traffic on the streets affected by fire fighting operations. The officers, through their training and indoctrination as public safety officers, are exceptionally alert for fire and safety hazards of all sorts and report these whenever they suspect such a condition exists. The rules of the department and its procedures comply in all respects with the NBFU recommendations and all officers are trained in use of rescue breathing equipment which is available in the department and in critical building locations.

Fire Prevention

Fire prevention activity is generally good, but inadequate in the inspectional area. Additional inspection manpower should be assigned in view of the increase in building area to be inspected.

The recent expansion of building construction on the campus has severely restricted routine fire prevention inspection of existing structures because of the time required for review of plans and inspection of construction sites. Because fire extinguishers are distributed according to building area and hazards, the 30.3% increase in fire extinguishers on the campus since 1958-59 presents a good indication of the increased need for fire prevention inspection. It seems clear that the university should have

the time of more than one man devoted to fire prevention inspection alone and the time required for construction programs should be in addition to and not interfere with the routine, consistent and on-going prevention of fire in existing buildings.

The university's lack of fire prevention ordinances would be regarded as a deficiency under the grading schedule, but can be overlooked because of the central administrative authority relationship enjoyed by the Department of Public Safety.

Fire Department

Evaluating the equipment and procedures of a fire department is made relatively simple by use of the grading schedule and related explanatory literature. The only significant area of controversy over grading schedule standards for a fire department is the standard of manpower required for manning apparatus and for response to fires. This controversy is not applicable to the university's fire protection situation since the minimum small department fire fighting manpower for effective performance is generally agreed upon and the rationale for the figure is obvious even to laymen in the field of fire protection. The following discussion of the fire department effectiveness is based on the equipment and procedures called for in the grading schedule, supplemented by appropriate fire protection

literature, and represents a selection of grading schedule items under which the author rates the fire department as being deficient. Controversial items such as company manning are excluded from the discussion.

Number of Engine and Hose Companies and Apparatus.³²

East Lansing should have five engine companies in service. It has three pumpers, which is more pumping capacity than it has manpower or large stream appliances to utilize. This apparent apparatus deficiency can be fully offset under the grading schedule without additional apparatus if the city will secure written mutual aid agreements with neighboring fire departments. Ultimately, the city should have a reserve pumper of adequate capacity to remove completely a deficiency under this item.

Number of Ladder Companies and Apparatus.³³ East

Lansing should have no deficiency under this item if it has proper mutual aid arrangements. It is mentioned only in order to note 1) the value of mutual aid arrangements, and 2) that the city would not need an aerial ladder truck except for the existence of the university's buildings over three stories in height.

Powerful and Special Stream Appliances.³⁴ This

³²Standard Schedule for Grading Cities and Towns of the United States with Reference to Their Fire Defenses and Physical Conditions, op. cit., pp. 46-50.

³³Ibid., pp. 50-51.

³⁴Ibid., pp. 62-63.

item requires siamese connections, monitor nozzles on apparatus, portable deluge sets or turret nozzles, large spray nozzles, cellar pipes, distributing nozzles, foam equipment and ladder pipes. This is equipment necessary for handling large fires, fires in basements and sub-cellars and flammable liquid fires such as are experienced in tank truck accidents. East Lansing apparatus has only the ladder pipe and its accessories and limited siamese equipment. The League of California Cities concluded from its consideration of this item that

These appliances will permit the city to do a more effective job of fire fighting. Since the service life of most of these appliances is 20, 30 or even 50 years, a long amortization period makes their purchase worthwhile in that a single outlay of funds can erase as many as 50 [deficiency] points.³⁵

Small Stream Appliances.³⁶ This item is complied with in all respects with the exception of 300 feet of pre-connected 1 1/2-inch fire hose, a deficiency easily remedied without significant expense.

Amount of Hose.³⁷ While the exact amount of hose footage on pumpers and in reserve is not known in relation to the required 1,200 feet of 2 1/2-inch hose on each pumper

³⁵The Fire Protection Grading Process, op. cit.,
p. 21.

³⁶Standard Schedule for Grading Cities and Towns of the United States with Reference to their Fire Defenses and Physical Conditions, op. cit., p. 63.

³⁷Ibid., p. 64.

and an equal amount in reserve, observation of the apparatus indicates that the hose bodies are not fully loaded.

In view of the fact that hose footage loaded on a pumper in excess of the footage required is counted as spare hose, and because long lays of hose may be necessary in event of serious structural or farm fires on the campus or in areas of weak water supply, good practice is to load fire pumpers with all the large volume hose they will carry on the theory that spare hose in the station which is not loaded on a vehicle is of no value at the fire.

Minor Equipment.³⁸ This includes items listed in the NBFU Pamphlet 19 on specifications of fire apparatus. The following discussion is pertinent:

Hose line appliances are considered to be of particular importance. Also, a deficiency here, as in other gear items, can influence the charge when Fire Methods (item 31) are evaluated. Again the necessity in good fire control operations provides every justification for the purchase of this required minor equipment and, also, 50 points of deficiency are present.³⁹

Training.⁴⁰ This item requires training facilities which the East Lansing fire department does not have, but for which university structures and particularly the new

³⁸Ibid., p. 65.

³⁹Fire Protection Grading Process, op. cit., p. 22.

⁴⁰Standard Schedule for Grading Cities and Towns of the United States with Reference to their Fire Defenses and Physical Conditions, op. cit., p. 67.

parking ramp being constructed would provide adequate substitutes.⁴¹ Use of such structures for drill training is essential and required by the grading schedule,⁴² if a fire department expects to achieve an effective state of training and readiness.

Effective fire fighting cannot be left to an intensive training of the rookie and the actual experience of fires. Years may pass before a fire company will be called upon to use its pumper to full capacity or to place its longer ladders for rescue work . . . there must be continuous training . . . with operations of the nature actually used at fires, and with detailed study of the general conditions existing in the particular community.⁴³

Similar statements abound in the fire protection literature.

Lectures on methods of taking hose lines to the roof are a good basis, but practise in these evolutions is of greater value. . . . Training for the fire to come must be an every-day affair; it must include detailed inspection of buildings, the making of outline plans showing the stairs, elevators, fire escapes and other structural features; . . . knowledge is necessary of the storage of flammable and other hazardous materials; and the strategy to be employed at the fire will have to be planned ahead.⁴⁴

⁴¹The Education of Firemen, Part II: Equipping a Fire School (New York: National Board of Fire Underwriters Special Interest Bulletin No. 235, August, 1946).

⁴²The Fire Protection Grading Process, op. cit., p. 23.

⁴³Training (New York: National Board of Fire Underwriters Special Interest Bulletin No. 136, January 1, 1942).

⁴⁴Fire Department Efficiency (New York: National Board of Fire Underwriters Special Interest Bulletin No. 131, December, 1960).

The municipality does not receive the full benefits of large expenditures for manpower and equipment unless the men are trained to work as a team and effectively use the equipment available.⁴⁵

Planning a system of training is important, but carrying forward this program religiously is even more important.⁴⁶

A fire department is a success or failure depending on its training program, as no other one factor has as much ultimate effect on the department's operation. . . . The best departments devote part of every day to drill and training work.⁴⁷

It should be ingrained in all fire department officers that the efficiency of fire fighting operations is directly proportional to the effectiveness of the training program. . . . A plan that will prove outstanding in solving the problem is pre-arranged schedules prepared by the training division officers. This plan assigns topics covering several subjects . . . further assigns drill periods which include fire fighting problems and evolutions. . . . There is a training session scheduled daily. . . .⁴⁸

Application of this section of the grading schedule by the grading engineer includes the following requirements:

1. Designation of a training officer.
2. Existence of a drill manual geared to department problems, equipment, manpower.

⁴⁵Ibid.

⁴⁶Industrial Fire Brigades Training Manual (Boston: National Fire Protection Association, International, 1954), pp. 3-4.

⁴⁷Municipal Fire Administration, op. cit., pp. 91-92.

⁴⁸Officer Training: Fire Fighting Facilities, Planning and Procedures (Stillwater, Oklahoma: Oklahoma State University Department of Fire Technology, 1962), pp. 33-35.

3. Existence of a complete training program covering all levels of training from recruits through chief.
4. Pre-fire planning.
5. Examination of the department records of training to determine type of training provided and amount of time involved.⁴⁹

Of all factors considered in evaluating the quality of fire protection the university is receiving, the lack of training, together with other deficiencies which are attributable to the lack of training orientation in the fire department administration, presents the most striking weakness in the fire department's role in university fire protection.

Any evaluation of the training program of the department in the light of the well established understanding of what fire department training should be requires the conclusion that a training program as a planned and continuing process does not exist. There is no drill manual established. The company officers are not required to conduct any minimum level of training activity. Hose and ladder evolutions on actual buildings have almost never been held in recent years. Company members do not inspect university buildings as part of a pre-fire planning program--in fact, there is no pre-fire planning program.⁵⁰

⁴⁹ The Fire Protection Grading Process, op. cit.,
pp. 23-24.

⁵⁰ Personal interviews with the fire chief, and personnel of the campus fire station, during January, February, and March, 1963.

From this lack of training program can be traced some of the deficiencies in department operations observed by the writer, including:

1. Inability of campus-based apparatus drivers to find the building at which the fire was reported, primarily married housing.

2. Apparatus drivers taking longer routes to a fire alarm than necessary.

3. Fire personnel not able to find their way about inside campus buildings when given specific room numbers.

4. Fire personnel, when given sufficiently accurate locations of fire alarms, failing to spot their apparatus properly in relation to the location due to unfamiliarity with building layout.

5. Statements and observed actions of firemen to the effect that they would not enter rooms containing radioactive research materials because of the hazard to themselves, although the department has radioactivity measuring equipment provided by civil defense funds, and the "hazard" is almost non-existent with most materials being used.⁵¹

The lack of serious fires on the campus, the very large area and complexity of interior layout of its buildings, the nature of certain special hazards on the campus such as radioactive materials, botulism cultures, and highly toxic research materials of various sorts, the irreplaceable value of research materials which may be destroyed in fire, as well as some buildings which could produce dangerous and difficult fires require a full-scale, highly competent, continuing and imaginative training program for

⁵¹Degree of hazard estimation provided by university Radiation Safety Officer Richard Nocilla.

the fire fighters who are to protect the university.

Response to Alarms.⁵² This grading schedule item requires a pre-determined response of men and apparatus to all parts of the fire department's jurisdiction and ensures an automatic, pre-planned dispatch of apparatus by requiring use of "running cards" which specify which companies shall respond to every location based upon the fire protection problems at the location. The fire department does not have a pre-determined response system. The dispatch of apparatus is decided upon by the fire lieutenant on duty at the time the alarm is received, based upon the information given him by the East Lansing police desk officer. It can be truly said that at least three separate dispatching systems exist since there are three lieutenants, and a fourth and fifth system can be considered added when the chief and assistant chief provide relief for the lieutenant or make the decision in his stead.

This dispatching method leaves a great deal to be desired and results in conditions such as the following:

1. The aerial ladder truck responded to only 11 fire alarms in 1962 for both the campus and city, only 12 times in 1961, and only 12 times in 1960.⁵³

⁵²Standard Schedules for Grading Cities and Towns of the United States with Reference to their Fire Defenses and Physical Conditions, op. cit., pp. 68-69.

⁵³Annual Report of the East Lansing Fire Department for years 1960, 1961, and 1962.

2. The aerial ladder did not respond to fire alarms reported to the fire department for upper floors of dormitories when the occupants were momentarily trapped in their room because the only door was involved in the blaze. Another time, when informed an actual fire was in progress, the aerial ladder was not originally dispatched, was called for by the assistant fire chief, but could not be sent because there was no man left in the station to drive it to the fire.

It can be seen from the number of runs the ladder truck makes that the routine practice of the fire department is not to send the ladder truck to alarms. Normally, they leave a driver in the station in case it is needed, which amounts to having neither the ladder at the first critical moments of a fire when rescue problems may be pressing or having the necessary services of its driver as a fireman if the ladder is not needed but a working fire is in progress. This system, or lack of it, is not consistent with good fire apparatus dispatching nor is it in the interests of the safety of the students and property entrusted to the university.

Another defect in the dispatching procedure is the fire department practice of sending campus-based fire units to campus fire alarms without regard to the distances involved to the alarm. This results in the campus-based apparatus travelling 1 1/2 miles to the Union Building, Cowles House or Gilchrist Hall when the East Lansing-based apparatus is only three blocks from the fire. The likelihood that the university and citizenry will incur unnecessary property damage in this situation is obvious, as is the

potential risk to life.

The lack of a pre-determined dispatching system has also resulted in sending East Lansing-based apparatus 1.3 miles travel distance to a fire alarm located only a few blocks from the campus fire station. This situation was a human error--but illustrates the defective nature of a system in which this kind of error is inherent.

Standard practice of the fire department is to send the complement of one fire station or the other to an alarm of fire unless the seriousness of the situation is obvious at the time the alarm is received. Therefore, the typical response in terms of manpower is four-six men including the fire lieutenant, except for the few times each year the ladder truck driver responds, adding another man for fire fighting duty.

In actuality, the maximum effective manpower sent to most university fire alarms is one two-man hose team including a company officer, one pump operator, a lieutenant to coordinate the activities of several companies and provide command and direction rather than fire fighting assistance, a second engine with an operator to provide water from a hydrant when the tank of the first pumper needs replenishing and a ladder truck operator, if the ladder truck is dispatched.

It could be argued under the grading schedule that because the city is under 50,000 population ladder companies

are not needed on response, but the schedule requires "adequate" ladder equipment for structural conditions.⁵⁴ Arriving at a fire without ladders able to reach the roof of the structure would not be regarded as adequate in most situations, since the ability to effect rescues and conduct fire operations in upper stories, attics and roofs is severely limited without ladders. The ladders of the pumpers are not adequate above the third floor of a building.

The effect of the fire apparatus dispatching procedure of the fire department is to operate the department as if it were two separate fire departments under the command of a single administration; the campus station protects the campus and East Lansing residents south of the river and the East Lansing station protects East Lansing with the units of each station acting as "second alarm" support for the other station.

Fire Methods.⁵⁵ In combating small incipient-type fires, the methods used by the fire department are excellent in terms of equipment. The men are adequately equipped with breathing masks, small-line fog streams are used very effectively, and the personnel are unusually quick to institute salvage operations to prevent smoke and water damage.

⁵⁴Standard Schedule for Grading Cities and Towns of the United States with Reference to their Fire Defenses and Physical Conditions, op. cit., p. 68.

⁵⁵Ibid., p. 69.

Direction and coordination of the fire fighting efforts in university buildings is lacking, in the writer's observation. A major problem is the dispersal of the small number of men responding to alarms in tall buildings of large areas--making it very difficult for company and command officers to communicate with the apparatus or men. This has resulted in substantial delay in securing movement and placement of apparatus, misunderstood orders when they are shouted at distances and has made it difficult to assemble the men to secure coordinated operations on upper floors.

If the fire department were to use miniature two-way radio equipment, command and supervisory officers could issue instructions by radio which would be heard by each first-alarm fireman and would be repeated through the loudspeakers on the fire apparatus. This system, along with a standard operating procedure for handling this type of alarm in tall buildings, would greatly improve fire department efficiency and aid in overcoming the difficulties caused by lack of an elaborate fire alarm system in the buildings. The investment in such equipment would be minor when compared to the cost of additional manpower which would be necessary to provide the same efficiency.

Other deficiencies in fire department operations which would be penalized a second time under grading schedule fire methods requirements include the lack of equipment

for developing powerful streams for use at large fires, the inadequacy of ladder equipment at the university's tall buildings because the ladder truck is not dispatched, the general practice not to connect to fire hydrants at a fire unless it appears the apparatus tanks are being emptied, general failure to use standpipes provided in university buildings, and the lack of training of fire companies, since these deficiencies weaken or negate otherwise good fire methods.⁵⁶

In buildings such as the university's, the lack of pre-fire planning would be considered a deficiency under fire methods, especially in view of the limited manpower available, potential water supply problems if both sprinklers and pumpers are to be operated, the rural locations of relatively large-area farm structures and similar "target hazard" conditions.

Pre-fire planning involves three different types of planning: (1) a standard operating procedure for common fire alarm and structural situations, (2) pre-planning for a specific area giving special attention to exposure conditions, water supply available and physical conditions conducive to defense from exposures, and (3) specific operating plans for individual structures or structural complexes, usually termed target hazards because of concentrations

⁵⁶The Fire Protection Grading Process, op. cit.,
pp. 24-25.

of hazards, life threat, unusual values or irreplaceable materials.⁵⁷

The desirability and great value of pre-fire planning is now an accepted matter in fire protection administration and is obvious even to the layman. Fuller details are available in standard works on the subject.⁵⁸

Building Inspections.⁵⁹ Direct quotation from the grading schedule presents the position of fire protection experts on the subject.

Systematic and frequent inspections of buildings shall be made by company members and department officers to acquaint them with local fire hazard conditions. Records of such inspections shall be kept both by notes and sketches, and be available for use in company training.⁶⁰

Similarly, the explanatory interpretation provided by the League of California Cities for the guidance of city administrators in understanding and evaluating the grading schedule is explicit.

The foregoing lengthy list of bulletins on the subject attests to the importance of regular and

⁵⁷Officer Training, op. cit., pp. 47-49.

⁵⁸Lloyd Layman, Fire Fighting Tactics (Boston: National Fire Protection Association, 1953), also Officer Training: Fire Fighting Facilities, Planning and Procedures, op. cit., Section Two, Pre-Fire Planning, pp. 47-73, inclusive.

⁵⁹Standard Schedule for Grading Cities and Towns of the United States with Reference to Their Fire Defenses and Physical Conditions, op. cit., p. 71.

⁶⁰Ibid.

systematized building inspections. It is of most import that each company keep adequate records of its building inspections, complete with sketches and notes on each floor of each building inspected. This is an item where Effort expended will pay off far more in effective fire control than it does in deficiency points possible to be removed.⁶¹

Summary of Fire Protection Adequacy

Building and structural conditions are exceptionally good from the fire fighting point of view; water supply would need supplementing from the river for a major building fire, especially in the high exposure hazard area on the east end of West Circle Drive; a central fire alarm system and fire detection system would prevent the condition most likely to cause a serious fire loss--delayed fire discovery and alarm transmittal; but all things considered, the opportunity for effective fire protection and prevention on the campus is exceptionally good. Fire department operations leave much to be desired from the standpoint of applying effort and progressive fire administration techniques to the protection of the campus, particularly in the area of training and preparedness.

Considering that preparing for the worst is an inherent responsibility of the public safety services of a community and that the worst only rarely happens, the lack of an imaginative and consistent training program

⁶¹The Fire Protection Grading Process, op. cit.,
pp. 25-26.

coupled with adequate building inspection and pre-fire planning procedures labels the fire department as either deficient in essential knowledge of current fire administration practices or for some reason unwilling or unable to implement them.

Whatever the reason, the conclusion is inescapable that the weak link in university fire protection is the fire department--a department which is fifty per cent supported by the university, but which uses methods of fire alarm dispatch, apparatus manning, and training preparedness which can be acceptable only in a small city of a residential nature with few large structures. It is not difficult to form the opinion that university financial support has produced a fire department which provides superior protection to city residents but has failed to orient itself to produce an equally superior level of protection to the university.

Finally, it is apparent that the growth of the university requires additional manpower devoted to fire prevention inspection--the job is simply too large for one man. Whether this additional inspection is provided by a full-time inspector or by part-time use of existing public safety department personnel or by use of fire department personnel is a matter warranting additional consideration of the nature of the workload and the costs and benefits of the various methods, but additional fire prevention inspection is necessary.

IV. POLICE PROTECTION AND SERVICE

The university Department of Public Safety is responsible for all public safety interests and responsibilities of the university except fire fighting. The policing portion of the department will be referred to as the university police or the police service. The Director of Public Safety is responsible to the president of the university and has under him three distinct areas of department operations: the police service under the direction of a lieutenant, a centralized records and clerical service, and the non-police safety service functions of the Safety Engineer, Radiation Safety Officer, Fire Safety Officer, Pest Control Officer, Sanitarian, and two safety equipment maintenance men. These safety service personnel report to the Director individually.

The Police Service

The line police functions are performed under the direction and control of the lieutenant who is responsible to the Director for prior approval of all policy matters but otherwise exercises relative independence in directing the affairs of the police service. In the absence of the Director, the lieutenant functions in his place with all authority of the Director except alteration of existing policies or implementation of new policies not made necessary by urgent or emergency conditions.

Organization and Supervision. Four sergeants report to the lieutenant and supervise police activities; one is the supervisor of two patrolmen assigned as investigators and is himself a working investigator; three sergeants each supervise a uniformed shift (or platoon, as they are known in the department) on a three-month rotation scheme. Each platoon also has a corporal assigned to act as supervisor in the absence of the sergeant and function as a patrolman when the sergeant is on duty.

One patrolman (public safety officer is the official job title) is detached from the police service and supervises the central clerical service provided the entire Department of Public Safety.

Thus, nine of the 25 officers below the rank of Director are assigned to administrative, supervisory or staff ranks, two are assigned as specialist investigators and the remaining 14 are patrolmen assigned to the uniformed force platoons. Following is a tabulation of the distribution of police personnel.

TABLE X

Distribution of Police Personnel (1962-63) (excludes Director)

Rank	Staff & Invest- Command	gation	First Platoon	Second Platoon	Third Platoon	Total	Per Cent
Lieutenant	1					1	4%
Sergeant		1	1	1	1	4	16%
Corporal			1	1	1	3	12%
Patrolman	1	2	2	5	7	17	68%
Total	2	3	4	7	9	25	
Per Cent	8%	12%	16%	28%	36%		100%

Uniformed Force. The uniformed force, excluding the lieutenant, has an authorized strength of 20 men, and is provided with continuous supervision at all times except the day shift on certain holidays when school is not in session. Following is a breakdown of platoon manpower distribution, showing a normal weekday with school in session.

TABLE XI

Uniformed Police Personnel on Duty
(excludes Lieutenant)

	Author. Men	On-duty Weekday*
First Platoon (11:30 p.m.-7:30 a.m.)	4	3
Second Platoon (7:30 a.m.-3:30 p.m.)	7	4-5
Third Platoon (3:30 p.m.-11:30 p.m.)	6	4
" " (7:30 p.m.-3:30 a.m.)	3	2

*Assumes no position vacancies; records show two position vacancies are common at one time for extended periods.

The working schedule of officers frequently varies from day to day in terms of the number of men on duty at a given time, reflecting a basic characteristic of the police service in a large university--the extreme variability of university activity.

While classes are in session and the campus is occupied by its resident student population in Fall, Winter and Spring terms, the police service endeavors to maintain the following on-duty patrol force and regards this force as an absolute minimum.

TABLE XII

Minimum Desirable Uniformed Police on Duty
(weekday with school in session)

Time Period	Reporting for Duty	Duty Strength by Activity			
		Superv.	Desk	Patrol	On Duty
7:30 a.m.-3:30 p.m.	5	1	1	3	5
3:30 p.m.-7:30 p.m.	4	1	1	2	4
7:30 p.m.-11:30 p.m.	2	1	1	4	6
11:30 p.m.-3:30 a.m.	3	1	1	3	5
3:30 a.m.-7:30 a.m.	1	1	1	1	3
	14				

On weekends and holidays and between terms, only three men are needed on the day shift. When the campus residents have mainly left campus between terms, the 7:30 p.m.-3:30 a.m. shift is reduced by one man and frequently by both men to give accrued compensatory time off.

The manpower shown in the table above represents a force adequate to provide protection during the night hours at the high level which is necessary on the university campus. This force is also adequate to provide for the high level of service demands characteristic of a university police organization, and finally this size force will allow an adequate level of enforcement of ordinance and student regulation parking violations as judged by the incidence of faculty-staff complaints on parking conditions.

Analysis of the department working schedule shows that each year the police service can expect one full position vacancy during the year, and that commonly this actually involves two position vacancies for an extended period.

Personnel. For several years the police service at the university has recruited (so far as it could) young men or police officers from other jurisdictions who wish to secure an education in the field of police administration or in other fields. The police officers secured under this policy, which now includes a minimum of two years' college education unless waiver is justified by unusual conditions of qualification--primarily police experience, are a young, vigorous and sincere group who adopt the policies of the department concerning police ethics, courtesy and methods as a matter of general belief rather than because of the need to hold a job. The personnel so secured do an exceptional job of police-public relations. Only a few complaints are received against an officer each year in spite of the thousands of regulatory contacts with the public that these officers make and the great unpopularity of some of the regulations they must enforce. The police service investigates rigorously every citizen complaint against an officer and they are generally found attributable to poor communications between the officer and the citizen or to a citizen so angered at circumstances that he is not amenable to reason. Officer fault is almost invariably attributable to haste or to inexperience in handling the type of citizens in the community.

Because few of the officers intend a career with the university (and because there are few career incentives

at the officer level which make university policing in any way competitive with municipal policing in a progressive city department), the police service has a high personnel turnover and slow replacement, averaging 1.2 vacancies in 1962 and 1.3 vacancies in 1961. The measure of vacancies is not an accurate indicator of the turnover, as is obvious when the experience level of the personnel is shown.

TABLE XIII

Length of Service of Police Personnel
(as of April, 1963)

Experience Period	Men	Per Cent	Rank Distribution
vacancies	3	11.5	patrolman
0-1 year	2	7.7	patrolman
1-2	8	30.8	1 corporal, 7 patrolmen
2-3	3	11.5	1 corporal, 2 patrolmen
3-4	3	11.5	2 sergeants, 1 corporal
4-5	0	0.0	
5-6	2	7.7	1 lieutenant, 1 sergeant
7-8	1	3.8	patrolman
11-12	1	3.8	patrolman
12-13	1	3.8	patrolman
13-14	1	3.8	Director
16-17	1	3.8	sergeant
	26	99.7	

A turnover of from three to six or more men in a year is not at all unusual--a range of 12% to more than 25% each year. The training and supervisory problems resulting from such a turnover are obvious.

The police are given a great deal of training. In 1962, for instance, 6.8% of the uniformed force working time was spent in training, including attendance at training

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schools held outside the department by non-department personnel. Primarily, these schools have been month-long recruit schools and two-week investigator schools conducted jointly by continuing education, the School of Police Administration and the Michigan Association of Chiefs of Police.

Advanced in-service training in the department has declined in 1961 and 1962 because of the heavy recruit training obligation. The recruits (three) employed in March, 1962, received six weeks' schooling in recruit school taught exclusively by the command and supervisory and officer personnel of the police service. The high level of education among police personnel simplifies securing adequate instructors. However, the police service has a noticeable difficulty securing time for its instructors to prepare for their teaching role, since they normally must continue their full-time supervisory duties and service obligations in a uniformed force drastically shorthanded at the time of the recruit school.

Following is an analysis of the uniformed force working time, days off and position vacancies for a three-year period.

Calculation from the figures in Table XIV shows the number of scheduled working days which the police service can expect from its uniformed officers after giving all compensatory time, sick leave and other required time off.

TABLE XIV

Uniformed Force Man Day Analysis, 1960-1962
(from monthly work schedules)

Calendar Year	Working Days	Training Days	Compens. Time Off	All Other Days Off	Working Day Positions Vacant	Average Monthly Authorized
1960	4,253	108	161	2,451	72	19.3 men
1961	3,914	88	173	2,167	287	18.2 "
*1962	3,939	289	240	2,329	264	19.3 "

*Two additional positions authorized beginning July, 1962, positions vacant one month.

TABLE XV

Average Annual Working Days Per Uniformed Officer, 1960-1962
(counts training assignment as a working day)

Year	Scheduled Working Days Per Man	Scheduled Working Hours Per Man	Positions Required to Cover 24 hrs., every day
1960	225.9	1807.2	4.84 men per position
1961	219.9	1759.2	4.98 " " "
1962	219.0	1752.0	5.00 " " "

From Table XV above it can be seen that to man a position around the clock in the uniform force required exactly five men in 1962. In practice, this tends to vary between shifts and ranks and the various months of the year.

Criminal Incidents

A large university has a surprisingly large number of criminal offenses, if Michigan State University is any indication of the experience of others. Table XVI presents the "crime index offenses known," as reported to the Federal Bureau of Investigation by the university police over

TABLE XVI

Crime Index Offenses Known: 1951-1962
(from university police reports to the FBI)

Year	Crime Index Offenses								
	Murder	Negligent Manslaughter	Forcible Rape	Robbery	Aggravated Assault	Breaking & Entering	Larceny \$50 and over	Auto Theft	Total Crime Index Offenses
1951	0	0	0	0	0	7	41	3	51
1952	0	0	0	0	0	11	36	4	51
1953	2	0	0	0	0	89	17	3	111
1954	0	0	1	0	0	118	12	3	134
1955	0	0	0	1	0	112	28	1	142
1956	1	0	0	0	0	223	42	5	271
1957	0	0	1	0	1	232	91	6	331
1958	0	0	1	0	0	228	71	16	316
1959	0	0	2	1	0	396	101	5	505
1960	0	0	0	0	2	361	128	6	497
1961	0	0	0	0	0	337	178	14	529
1962	0	0	0	0	0	354	154	4	512

*Bicycle thefts not reported.

**Bicycle control program instituted September, 1961.

a period of years.⁶² Also shown beside the main grouping of Crime Index Offenses are the figures for larceny under \$50 in value.

Other offenses of the Uniform Crime Reports ("Part II offenses") represent offenses which are not reliably reported by the public to the police and for which the police report only arrest information to the Uniform Crime Reports.⁶³ However, the university police record these offenses as they are reported, since included among them are a number of offenses which the university police have a particular interest in repressing.

In evaluating the criminal activity on the campus, it is essential that the following points be considered:

1. The university has the largest dormitory population of any university in the United States--a youthful and highly transient population.

2. University authorities cooperate in a program to secure a high level of reporting in the interest of apprehending offenders who frequently are emotionally disturbed youths needing proper guidance from the university counselling facilities, and in the interest of maintaining a high level of freedom from the disturbing influence criminal

⁶²Uniform Crime Reports for the United States--1961, Federal Bureau of Investigation, United States Department of Justice (Washington: 1961), p. 2.

⁶³Ibid., p. 25.

activity exerts in an educational institution.

3. A university campus, especially one with a large female resident population, attracts sex offenders, and repressing their activities is a major responsibility of university police forces everywhere when a university is located in or near reasonably large cities or metropolitan areas.⁶⁴

Crime Index Offenses. The table on Crime Index Offenses shows a steady rise in such offenses over the years. The larceny under \$50 offenses are heavily weighted by bicycle thefts and show a large fluctuation in 1953 when the university police ceased writing offense reports on most such thefts and again in 1957 when the writing of bicycle theft reports was resumed. The years 1961 and 1962 show a sharp departure from the rising trend of thefts under \$50, coinciding with a sharp drop in bicycle thefts attributable to the adoption of a bicycle control ordinance exerting more effective control over unlicensed and unlocked bicycles. A special report analyzing these thefts showed the bicycle control ordinance revision reversed the trend of bicycle thefts and returned them to the level of several years prior to adoption of the ordinance. They are again on the rise as the dormitory population continues to expand

⁶⁴Informal consensus received by author from attendees at the 1961 and 1962 conferences of the National Association of College and University Traffic and Security Directors.

TABLE XVII

Uniform Crime Report Offenses Known, 1958-1963
(from DPS Annual Reports)

	Fiscal Years (July through June)				
	1958-59	1959-60	1960-61	1961-62	1962-63
Crime Index Offenses					
Criminal Homicide	0	0	0	0	0
Forcible Rape	1	1	0	0	1
Robbery	0	1	0	0	0
Aggravated Assault	0	1	1	0	2
Breaking & Entering	295	413	322	361	408
Larceny--\$50 and over	63	124	163	155	131
Larceny--under \$50	661	760	891	761	773
Auto Theft	10	5	9	8	9
Other Offenses					
Other Assaults	10	12	28	18	12
Forgery-Counterfeiting	1	5	3	2	1
Embezzlement-Fraud	10	8	11	1	7
Stolen Property	1	4	3	2	5
Weapons Laws	1	2	0	6	8
Prostitution	1	0	0	0	0
Sex Offenses	94	113	84	118	222
Family & Children	2	11	5	2	3
Narcotic Drug Laws	1	1	0	3	4
Liquor Laws	13	8	23	18	39
Drunkenness	4	3	8	5	11
Disorderly Conduct	32	32	26	27	18
Vagrancy	0	1	0	0	0
Gambling	1	0	0	1	0
Driving while Intox.	2	1	1	8	6
All Other Offenses:					
Arson	9	10	9	20	4
False Fire Alarm	11	9	6	5	13
Malicious Mischief	73	97	132	112	117
Miscellaneous	118	131	92	96	113
Suspicion	0	0	0	0	0
	1,414	1,753	1,817	1,730	1,908
Offenses Cleared:					
Part I (Crime Index)	106	102	124	149	124
Part II (Other)	131	101	172	155	211
Total	237	203	296	304	335
Per Cent	16.8%	11.6%	16.3%	17.5%	17.5%

and the increasing use of bicycles has added more than a thousand bicycles to the campus each of these years.

All Offenses Known. Table XVII shows a uniform crime reporting breakdown of offenses known on the campus during recent years. The Part II Offenses are analyzed a great deal more by the university police than is customary for the Uniform Crime Reports. This breakdown is of value for effective police management. Fire-related offenses are included for this study.

Sex offenses constitute a major area of police repression and investigation activity in a university community. A number of unpleasant incidents have convinced the police that even window peekers are not to be taken lightly, and vigorous preventive patrol effort is necessary to deal with the prowler-window peaker problem.

Following is a breakdown of the sex offenses which are affected by patrol force activity.

TABLE XVIII

Sex Offenses Known Affecting Patrol Activity, 1958-1963
(from DPS Annual Reports)

Offense	1958-59	1959-60	1960-61	1961-62	1962-63*
Rape and attempts	1	1	0	0	1
Sex-motivated assaults	2	4	2	1	1
Window peeking-prowler	51	46	20	14	38
Indecent exposure	17	11	15	37	40
Breaking & entering	1	0	0	0	0
	<u>72</u>	<u>62</u>	<u>37</u>	<u>52</u>	<u>80</u>
Per Cent Cleared	22.2%	20.9%	45.9%	34.6%	45.0%

*July 1 through April 30, 1963.

Patrolmen are equipped with miniature radio receivers in order that they may maintain intensified foot patrol in residential areas without limiting the response strength of the police. This program received strong command and supervisory emphasis beginning in 1960-61 and police supervisors are convinced the decline in the window peeking offenses resulted from this program. Results have been much less successful in 1962-63, although the number of apprehensions is higher and involves a surprisingly high proportion of non-university residents. It is suspected that the university is now attracting many more non-university offenders whose appearance on campus is so infrequent that they fail to recognize the existence of intensive patrol. It is also suspected that this explains the indecent exposure increase.

Offense locations are analyzed by general area in the annual reports of the university police and show a reasonably close relationship over the years, as seen in the following table.

It can be seen that 55.2% of all offenses known occur inside the university's buildings and are not amenable to any system of preventive patrol which would have a cost proportional to the benefit. A certain proportion of these offenses occurring inside buildings might be discovered through patrol officer apprehension of the offender with stolen property in his possession, but relatively few

TABLE XIX

Offenses Known by Area of Occurrence
(adapted from 1961-62 Police Annual Report)

Location	Per Cent of Criminal Offenses Known				
	1957-58	1958-59	1959-60	1960-61	1961-62
Dormitories:					
Men	17.0	13.5	9.8	12.2	15.4
Women	17.0	13.1	20.0	16.4	20.6
Married Housing	9.0	2.6	2.0	3.2	1.3
Other Buildings	23.0	25.7	22.2	19.1	17.9
Streets, Grounds & Parking Lots	33.0	43.5	44.8	48.5	43.3
Farms & Constr. Sites	1.0	1.6	.8	.6	1.5
	<u>100.0%</u>	<u>100.0%</u>	<u>99.6%</u>	<u>100.0%</u>	<u>100.0%</u>

offenses involve property the possession of which would be regarded as suspicious by a patrolman.

The Breaking and Entering figures need some careful attention lest they mislead the reader. Michigan law makes the technical breaking and entering of a room to commit a theft a Breaking and Entering just as if the room were a separate building or structure being entered and almost all university offenses involve thefts from rooms rather than forcible entry of buildings. Actually, there are so few actual burglaries, in the normal use of the word, that university police have not found it necessary to segregate such happenings in their reporting system. Considering the values in property inside the university buildings, this is something of a phenomenon. Police attribute this

good record to the fact that the janitorial staff primarily works night hours in university buildings which would otherwise be unoccupied. The janitors are careful to see that the buildings are kept locked and quick to call police if they become suspicious. Because of this night janitorial service, the university police administrators see no value whatsoever in use of building or night watchmen patrolling inside the buildings. So far as is known, Michigan State is the only large institution which does not use night watchmen inside its buildings. And yet, so far as can be determined among comparable schools represented at a recent conference of university security officials, MSU has a very favorable burglary and fire experience.

Occurrence by Time. The hourly distribution of criminal activity is not known. It is typical of the type of offenses which occur on the campus that few are of such nature that time of occurrence is known. However, the time of reporting of all criminal and non-criminal incidents on which reports are written provides an index which may be substituted for occurrence of offenses by time with reasonable results, and the police have used this index for several years in evaluating their work load by time of day. The following table presents the distribution of incident reports by time, day and month of reporting. There has been no significant change through the years except for a gradual trend away from the day shift to the afternoon shift.

TABLE XX

Incident Reports Written by Time, Month and Day Reported
(1960-1962)

Hour	Beginning	Number	Rank	Per Cent	Month	Number	Rank	Per Cent
12:00 M		253	17	2.8	Jan.	829	6	9.0
1:00 A		239	18	2.6	Feb.	863	5	9.4
2:00		131	19	1.4	Mar.	763	7	8.3
3:00		79	21	.9	Apr.	930	4	10.1
4:00		51	22	.6	May	1086	1	11.8
5:00		36	24	.4	Jun.	767	8	8.3
6:00		47	23	.5	Jul.	428	10	4.7
7:00		117	20	1.3	Aug.	419	11	4.6
8:00		344	15	3.8	Sep.	398	12	4.3
9:00		446	11	4.9	Oct.	1081	2	11.8
10:00		596	6	6.5	Nov.	993	3	10.8
11:00		503	9	5.5	Dec.	637	9	6.9
12:00 N		627	4	6.9	Total	9194		100.0%
1:00 P		683	2	7.5	Ave.	766		8.3%
2:00		632	5	6.9				
3:00		652	3	7.2	Day	Number	Rank	Per Cent
4:00		743	1	8.2	Sun.	841	7	9.2
5:00		548	7	6.0	Mon.	1598	1	17.4
6:00		508	8	5.6	Tue.	1390	5	15.1
7:00		461	10	5.0	Wed.	1474	2	16.0
8:00		411	12	4.5	Thu.	1435	3	15.6
9:00		367	14	4.0	Fri.	1434	4	15.6
10:00		374	13	4.1	Sat.	1022	6	11.1
11:00		266	16	2.9	Total	9194		100.0%
Total		9114		100.0%	Ave.	1313		14.3%
Ave.		380		4.2%				

A recent analysis of incident reports by the week in which they were written showed a pattern which was quite constant between years when comparing the same weeks in relation to the beginning of the school terms. Each year showed increased numbers of reports, but the fluctuation between weeks appears to be predictable. This study indicates the weekly figures may be of greater value in manpower scheduling than the monthly figures now used.

Incident reporting times were also analyzed in terms of the platoon which wrote the report. The figures presented in the table below show an average 11% increase in reports written by all platoons in 1962 from 1960, and indicate the afternoon platoon is writing a larger share of reports.

TABLE XXI

Incident Reports Written by Platoon, 1960-1962
(from radio logs)

Platoon	1960		1961		1962		Per Cent Increase
1st	318	10.9%	332	10.9%	349	10.8%	+ 9.7%
2nd	1353	46.4%	1433	47.2%	1487	45.8%	+ 9.9%
3rd	1244	42.7%	1272	41.9%	1406	43.4%	+ 13.1%
	<u>2915</u>	<u>100.0%</u>	<u>3037</u>	<u>100.0%</u>	<u>3242</u>	<u>100.0%</u>	<u>+ 11.3%</u>

Summary. To summarize criminal activity on the campus is not easy. Generally, the offenses are larcenies or destruction of property and losses are relatively minor. However, the sex offense rate is unquestionably high and the nature of the community requires vigorous police action in this area.

Enough serious offenses occur each year to warrant maintenance of an effective investigative agency, since experience has shown an intimate knowledge of the community and its activities is essential for successful criminal investigation among a youthful population which tends instinctively toward an "anti-cop" attitude.

Criminal activity indicates need for maintaining a very intensive patrol of the campus as a preventive measure.

The question is frequently asked of the university police, why a university needs a police department? It would appear that the record of offenses known is sufficient answer without resort to the additional police service areas of traffic duties and non-criminal services to the public and to the university.

Traffic Conditions

Traffic is a major function of the university police, as their 1961-62 Annual Report demonstrates. The report records the introduction of a police-sponsored intra-campus bus system operated by the local bus company as a means of reducing congestion and overcoming the distance-time problem which increasingly burdens the university people travelling between classes. The police reported traffic-related activity figures as follows in the 1961-62 annual report.

TABLE XXII

Traffic-Related Activity, 1961-62

Motor vehicle accidents	489
Motor vehicles registered (student)	11,392
Motor vehicles registered (employee)	1,954
Bicycles registered	3,551
Bicycles impounded	454
Moving violation tickets written	805
Parking ordinance tickets written	9,133
Student vehicle regulation tickets	12,166

As absolute figures, the above data are reasonably impressive as indicators of police traffic and parking service demands for a community of the university's size. But it is the trend of these figures which demonstrates the true nature of the situation. Following are the same items of activity compared on a per cent basis with the figures of fiscal 1957-58, the first year the university police had 24 officers--the same strength which still existed in 1961-62.

TABLE XXIII

Increase in Traffic Activities Since 1957-58
(from police annual reports)

Activity	1957-58	1961-62	% Change
Motor vehicle accidents	200	489	144%
Injury motor vehicle accidents	12	35	191%
Student vehicles registered	9,445	11,392	21%
Bicycles registered	1,111	3,551	219%
Employee vehicles registered	1,146	1,954	42%
Traffic and parking tickets	3,896	9,938	155%
Student vehicle regulation tickets	4,824	12,166	152%

These figures and the percentage increase in traffic-related output of the university police support graphically the claim of the police that the traffic burden is increasing in an overpowering expansion of problems. The trends continue in the year 1962-63. Police records showed at the end of Fall Term registration in the October, 1962, monthly report the following increases in certain traffic indicators from the same period in 1961-62:

student vehicles registered	up 17.9%
bicycles registered	up 37.0%

There is every reason to believe the trend will continue in 1963-64 with the planned opening of dormitories with a capacity of more than 2400 residents.

The traffic accident picture, while a burden in quantity, is really quite favorable in quality. There are few injury accidents and of these only a few involve severe injuries; however, 1962-63 had shown a 33% increase in injury accidents by the end of April, 1963.

Traffic congestion continues to increase, as does the necessity for intersection control. In 1957-58, four intersections were manned with officers and students during 8:00 a.m. rush-hour traffic. In 1958-59, the police had to provide traffic control at the noon rush hours at two intersections. In 1962-63, the need for traffic control is met by manning seven locations during the 8:00 a.m. rush hour with eight students, four positions during the

noon and 1:00 p.m. rush hours each, and three positions during the 5:00 p.m. rush hour--a total of 19 man-positions each weekday--and this exists after a pedestrian crossing signal was installed on Harrison Road, eliminating manual traffic control at a position which required three man-positions each day before the signal was installed. Currently, the police are receiving requests to increase the traffic direction at two intersections by several more times each day to handle the increasing congestion resulting from the opening of new buildings in the east portion of south campus.

Community Services

The university police are more than just the equivalent of a municipal police department concerned almost exclusively with crime and traffic problems, for they serve an institution which in turn serves youngsters in an in loco parentis relationship and this "plant protection agency" responsibility imposes demands for police service which the police of a comparably sized city would not experience in any volume.

A major service function of the police is the area of first aid and transportation of casualties. The department required each officer to hold a valid American Red Cross Advanced First Aid card long before other area police agencies, and places great emphasis on rendering a high

quality of first aid service to the community. This service reached such a peak and became such a burden, to the extent that it involved the transportation of students for relatively minor conditions such as colds, flu and similar afflictions, that the department found itself transporting 1,040 persons to the hospital in 1959-60 and, consequently, in 1960-61, took steps to restrict "minor" transportations in daylight hours. This reduced the transportation runs to the hospital to only 737 in 1961-62, but they have climbed again in 1962-63, and it appears that a continuing steady increase is practically irreversible under the conditions of university expansion.

Other services include unlocking building spaces for staff members who have locked themselves out, recovering property lost or left behind in locked buildings, and services of a similar nature. To render this service, the police have master keys to all university buildings. The officers make a special point of helping motorists on the campus who experience mechanical difficulty or run out of gas, and commonly change tires for female drivers or drive the motorist to a gas station for gasoline and return him to his vehicle.

Other services include impoundment of dogs, cats, cattle, taking reports of damaged property where there may be some question of university or private person liability, guiding strangers to their destination, transporting persons

and materials for the president's office, providing escorts and bodyguard service for prominent or controversial persons, posting officers at ticket sale lines, or at events where attendance exceeds capacity and the officers' presence helps assure order and facilitates equitable control of the waiting line.

Officers also look for lost children, cope with mentally disturbed persons--some of them not connected with the university, provide an officer at Olin hospital when a violent mentally disturbed patient is in residence; render aid to suicide attempt victims, provide daytime foot patrol to curb over-amorous displays of affection among student couples, report safety and security hazards and utility and roadway system defects, make inspections of buildings during the hours they are locked, take custody of lost property, provide money escorts including continuous protection of the money areas at registration each term, and spend a great deal of time providing service for public events.

Public Events. These activities require a great deal of manpower to ensure proper standards of protection, safety, order and public convenience and involve a good deal of advance preparation on the part of supervisory and command officers.

University officers below the rank of lieutenant spent 1663.5 hours (equal to .9 officers) planning and operating events in 1961. The officers now receive special

event overtime pay at a straighttime rate for duty at public events which require the scheduling of officers in greater numbers than would normally be scheduled for duty on that day. A departmental study revealed that the former system of providing event officer assignments as part of the monthly scheduling process was depriving the university of the services of almost two full-time officers each year, although the time spent on the events themselves seldom exceeded the time of one officer. The university then appropriated additional funds to pay for these assignments at an overtime rate on the basis described above if the event requires more than one officer assigned.

In addition, the police service hires a great many students to provide traffic and parking control at events--a duty which the police service simply does not have enough men to perform.

V. ADEQUACY OF POLICE PROTECTION AND SERVICE

The police service, unlike fire departments, has no agreed-upon set of standards for measuring adequacy. Because police work does not deal with physical materials and properties, development of an objective standard does not appear likely in the reasonable future.

Therefore, evaluation of police efficiency must be almost entirely subjective. One can measure certain items of police output such as tickets written, arrests

made and similar matters but we cannot know whether increases or decreases in such items are "good" or "bad" in terms of their contribution to overall protection of the community.

Because the population of law breakers cannot be measured accurately, and funds for such measurement efforts are not available generally to law enforcement people, we must be content with the subjective evaluations of law enforcement administrators supplemented by such objective measurements as are available.

Needs of a University Community

Some conclusions can be developed from the general need of a university for protection based on its past practices and certain obvious characteristics of university functioning and population.

The record shows and the Director of Public Safety supports the fact that the university has desired and generally received a high level of police service--a level of service and protection which would be regarded as luxurious in many of our cities where crime and violence inhibit the freedom of the population to move about after dark. To a university, such a standard of protection is not a luxury--it is a necessity. This is shown in the experience and practice of other universities as well as being the opinion of those familiar with the problem at Michigan State.

Several factors operate to make such service a necessity. First is the fact that when parents send their children away to a university they seem to think their offspring are attending a form of utopia which is a haven from the unpleasant things of life. This view is shared by much of the university population itself and is encouraged by the very purposes of a university and by the nature of the life involved in the pursuit and teaching of knowledge.

When crime shows itself on the campus in the form of assaults, rapes, indecent exposures and even murders, the reaction of the parents is a strong one. A "city campus"--one which can hardly be distinguished from the city blocks of which it is a part--can transfer the pressure by reference to the fact that the institution is part of the city and has little control over its standards of protection. The separate and distinct campus at Michigan State prevents this type of adjustment to the problem.

A second factor is the nature of a highly residential campus. Any institution which has a large resident population, particularly one housed in dormitory-type housing, has a well developed but hardly accurate rumor mill. A minor annoyance to a dormitory girl can be quickly magnified to a "rape" before the rumor has been in existence more than a few hours--to the consternation of many hundreds of the female residents.

Should the female population develop a reluctance

to go about the campus at night because of fear of criminal activity, the process of education at the university would be placed under a very undesirable constraint. The university police provide the patrol and investigative force which is necessary to ensure a universal feeling of security among the residents and thus encourage the purposes for which the university exists.

Another characteristic of the university is the service demands made upon the police. It is clear that manpower to meet these service demands should be manpower in excess of that necessary for protective services and this principle should particularly be applied in the hours of darkness. One reason the police are asked to provide these services is the continuous availability of the officers and the fact that many of the service demands can be met in periods of relative quiet. An excellent example of this is the enforcement of student motor vehicle regulations which, until recent years, was almost entirely a weekday task to be performed in the daylight hours when the university police are primarily a standby force and have very few preventive patrol responsibilities. Recently, however, enforcement of these regulations has become a heavy burden for the midnight shift and the afternoon shift and thus conflicts directly with police protective responsibilities.

Another factor for evaluation is the geographic

area to be protected. Reference to the maps of the university in recent years shows that the areas of nighttime female pedestrian movement have been enlarged from North Campus to include almost the entire South Campus. Womens' dormitories are now found throughout the campus, increasing the area of female pedestrian movement from 184 acres to a total of 608 acres--a 230% increase in the area which should receive intensive patrol supervision by police.

Police Manpower

Prior to the state fiscal crisis years of 1958-61, manpower of the university police increased rather proportionately and regularly as the university population increased until, by 1957-58, with the addition of two men in that year, it had reached a size of 24 men devoted entirely to police duties.

For the next four fiscal years, there was no increase in manpower, while student enrollment increased 19.8% on the East Lansing campus to 22,724 students and campus residents increased from a designed capacity of 12,477 in Fall, 1957, to a designed capacity of 15,000 in Fall, 1961--a 20.3% increase. The campus resident population in Fall, 1961, was actually over 16,700 since the dormitories were housing students well over the designed capacity.

In Fall, 1962, the campus resident population was

an estimated 18,500--an increase of 48% over the 1957 designed capacity. Police personnel increased by one officer in this period--a full-time Director was appointed and a lieutenant's position abolished in 1960, which cost the police service almost a full-time functioning line police officer. Two officers were added in Fall, 1962--representing a net increase of 4% in officer manpower against 48% increase in residents and almost 20% increase in student enrollment.

For the purposes of this study, the Director's position is excluded from manpower analysis. The Director cannot materially contribute to the performance of line police activities without creating chain of command conflicts and impairing his ability to perform duties essential to the police and the safety activities which can be performed only by the Director.

A recent UCLA study in 1962 compared certain characteristics of large state university campus police units and spoke very highly of the organization and administration of the Michigan State University unit.⁶⁵ Five systems having integrated public safety organizations were cited as being set apart from the other 13 universities polled in " . . . presenting an image of dynamism, integration,

⁶⁵ Nils D. Wagenhals, Evaluating a Public Service Function: The Large State University Campus Police Unit (Los Angeles: University of California Bureau of Governmental Research, 1962), pp. 18-19.

resourcefulness, and greater worth."⁶⁶ These five systems, of which Michigan State University was one, were reported as having an average of 42 men servicing an average of 18,500 students.⁶⁷ Michigan State, at the time of the survey, had 24 men servicing 22,593 students and had the largest resident population and largest campus to protect of any of the 18 schools surveyed.

A tabulation made from the findings of the UCLA survey is presented below, showing the university's rank among the other 17 for the various items presented by the study.

TABLE XXIV

Comparison of Michigan State University Characteristics
with the Police Units of 17 Other Large State-Supported
Universities--UCLA Study

Item	Rank
1. Campus acreage	1
2. Resident student population	1
3. Total student population (campus enrollment)	3
4. Total full-time police officers (incl. Director)	8
5. Full-time officers per 1,000 resident students	14
6. Full-time officers per 1,000 enrolled students	15

The police force of the University of Iowa conducted a survey of twelve institutions including Colorado, Colorado State, Illinois, Iowa, Kansas, Minnesota, Missouri, Bowling Green, Houston, Wisconsin, Arizona and Michigan State. Of

⁶⁶Ibid., p. 18.

⁶⁷Ibid., p. 18.

this group, four had populations exceeding 20,000 (Illinois, Minnesota, Wisconsin and Michigan State). Following is a tabulation taken from the Iowa figures for those four schools:

TABLE XXV

Police Personnel of Four Big 10 Universities over 20,000 Enrollment

	Illinois	Minnesota	Wisconsin	Michigan State
Population	24,169	33,000	21,000	25,040
No. officers	47	46	48	26*
Officers/M pop.	1.94	1.39	2.28	1.04

*Includes Director of Public Safety.

The other schools were tabulated as follows and some are clearly not comparable, judging by the extreme variance from the pattern presented by the others:

TABLE XXVI

University of Iowa Survey of University Police Personnel

Institution	Fall Enrollment	No. Officers	Officers/ 1,000 pop.
U. of Colorado	12,500	6 (+5 part-time)	0.48
Colorado State	7,500	6	0.80
Illinois	24,169	47	1.94
Iowa	12,400	24	1.93
Kansas	11,000	20	1.82
Minnesota	33,000	46	1.39
Missouri	14,000	15	1.07
Bowling Green	8,000	12	1.50
Houston	13,587	7	0.51
Wisconsin	21,000	48	2.28
Arizona	17,000	12	0.70
Michigan State	25,040	26	1.04

Another study of a similar nature, but unpublished, was made by the Michigan State University police in 1959, using data from six other schools which were known to have protection problems or campuses somewhat similar to Michigan State University or which were known to have well-administered operations. This survey included Indiana, Cornell, Syracuse, Minnesota, Illinois and Stanford. Stanford is excluded from the following discussion of this survey because of its small enrollment.

Of the six schools (including Michigan State) considered, Michigan State was sixth for ratio of officers to residents and enrollments, and sixth in number of full-time officers, watchmen and guards; it was second in terms of enrollment, residents and campus acreage.

From these comparisons with actual practice at other major universities, it is clear that Michigan State is operating with many fewer officers than comparable institutions.

The UCLA study showed a median ratio of officers to enrollment of 1.37 per 1,000 and an average of the seventeen institutions, excluding Wayne State, of 1.44 per 1,000. Michigan State's ratio per thousand enrollment was 1.06--a difference of 10 men between Michigan State's police force and the median figure for the seventeen schools and a difference of 12 men from the average figure.

The rank correlation finding in the UCLA study of

.753 in the ratio between officers and enrollment indicates some importance may be attached to this comparison of officer-population ratios among large education institutions, just as James is of the opinion that prevailing practice as an index of popular and political judgments on protection adequacy deserves considerable attention in evaluating municipal police and fire protection.⁶⁸

Some reference should be made to comparable manpower manning practices in Michigan cities of reasonably comparable characteristics. Reference to the 1961 Uniform Crime Report information provides the following table of Crime Index Offenses for certain Michigan cities in the population range 25,000-50,000 having police forces less than 60 men and thus comparable to the largest university police forces. It should be recognized that in 1961 the campus portion of the East Lansing population was 16,700, or more than half the census population of 1960 shown in Table XXVII.

The dangers of comparisons between crime index information for various cities are well known and carefully pointed out in the 1961 Uniform Crime Reports on page VII, and it is abundantly clear that many of the cities are obviously not comparable--for example, East Detroit, Ferndale, Inkster, Madison Heights, Southfield and Southgate are

⁶⁸Ibid., p. 23; also Charles S. James, Police and Fire Integration in the Small City (Chicago: Public Administration Service, 1955), p. 21.

TABLE XXVII

Crime Index and Full-Time Police Employees in Selected Michigan Cities of 25,000 to 50,000 Population
(from 1961 Uniform Crime Report)

Police Agency Jurisdiction	Murder-Negligent Hom.	Forcible Rape	Robbery	Aggravated Assault	Breaking & Entering	Larceny \$50 and up	Larceny under \$50	Auto Theft	Total Crime Index Offenses	Full-time Police Department Employees *
Allen Park	0	1	4	8	111	124	533	53	781	49
Birmingham			1		63	79	391	25	559	37
East Detroit	1	3	12	15	265	199	702	36	1233	51
East Lansing					38	42	104	9	193	26
MICHIGAN STATE U.					337	178	529	14	1058	27
Ferndale	4	4	16	9	175	119	459	72	858	48
Hazel Park	1		7	2	182	66	652	65	975	35
Inkster		12	31	61	382	205	612	116	1419	41
Madison Heights		2	6	11	166	74	404	53	716	27
Midland	2				51	44	576	28	701	30
Port Huron		1	2	7	177	46	711	26	970	55
Southfield	3	3	6	7	272	203	459	44	997	39
Southgate	1	1	16	5	94	173	510	36	836	29

*Includes civilian non-officers.

clearly not comparable with the others because of the volume of violent crime they experience. Objections can be raised against use of most of the other cities, but Birmingham, East Lansing and Midland quite apparently have a pattern of Crime Index offenses which is somewhat comparable to that of Michigan State University in lack of violence and predominance of offenses against property. Persons familiar with these communities will recognize a certain similarity

in the nature of their population characteristics as well as the fact that they enjoy high levels of police protection.

Comparison of the cities of Midland, Birmingham and East Lansing reveals a clear disparity between number of officers and volume of criminal activity in the Crime Index categories. Efforts to refute this by reference to severity of the offenses in the four jurisdictions can be countered by the fact that the university makes every effort to solve all of its offenses, recognizing that many of the offenders need assistance in their progress toward maturity and also being desirous of eliminating undesirables from the university community.

Patrol Time

A peculiarity of uniformed police work is the fact that "spare time" of the uniformed patrolmen is a highly valued output of the police agency, if it is utilized for vigorous and well channeled patrol activity. Police administrators believe that vigorous and conspicuous patrol activity has a high value in preventing criminal activities in areas which can be patrolled effectively.⁶⁹

Since a primary objective of the university police is to deter assaults and annoyance to students and ensure their ability to move about the campus without fear of harm,

⁶⁹G. Douglas Gourley and Allen P. Bristow, Patrol, Administration (Springfield, Illinois: Charles C. Thomas, Publisher, 1961), p. viii.

the amount of time expended on patrol activity is a matter of considerable importance in evaluating the adequacy of police protection on the campus.

Very little data are available on how patrol forces in city police departments expend their time and what proportion of this is devoted to patrol. The City Manager of San Diego reported that patrol officers in the San Diego police department were "on patrol" 76.2% of their duty time during an 8-hour shift.⁷⁰ In contrast, are the figures for recent years from the university police.

TABLE XXVIII

Annual Patrol Time of University Police
(from daily activity report tabulations)

Year	Patrol Hours	% of Total Man Hours*	Authorized Positions
1954-55	12,475	39.44	17
1955-56	11,699	31.78	20
1956-57	11,410	27.53	22
1957-58	11,423	29.77	24
1958-59	11,832	31.14	24
1959-60	10,927	29.91	24
1960-61	9,977	22.84	24
1961-62	9,510	22.01	24

*Variations in percentage figures apparently attributable to changes in number of lieutenants.

The importance of these figures and the overall trend in manpower adequacy of the police is emphasized by

⁷⁰George E. Bean and Howard L. McCalla, The Case for Better Utilization of Fire Manpower (San Diego: Report of the City Manager to the City Council, June 1, 1961), p. 15.

the comparison between 1954-55 when the department had 17 men and 1961-62 when the police had an authorized strength of 24 men including the Director. In 1954-55, the police spent 12,475 hours on patrol. Seven years later, with 41% more men, the police spent 23.77% fewer hours on patrol.

Patrol Availability

Important to integration is the belief that police patrolmen can be dispatched with reliability and speed to fires to ensure a coordinated team of fire fighting personnel. The 25 per cent of patrol force manpower available for response is not promising if only the raw figures are considered. However, examination into the working figures of the uniformed force provides a more encouraging outlook. Table XXIX presents the per cent of uniformed officer duty time spent in various activities by the duty shift to which the men are assigned. These figures are from the daily activity reports of every officer below the rank of lieutenant.

For the purpose of accurately estimating availability of uniformed patrol and supervisory personnel, a comparison was made of the time breakdown from the officer activity reports. The criteria established was the nature of the duty as it affected availability for immediate dispatch, assuming the officers and supervisor were equipped at all times with a miniature radio receiver. A good deal

TABLE XXIX

Per Cent Duty Time of Uniformed Officers below Lieutenant
by Duty Shift and Type of Activity, 1962
(from daily activity reports)

Activity	Night Shift	Day Shift	After-noon Shift	7:30 P-3:30 A Shift	Total Uniform Force
Patrol by car	27.4%	19.4%	24.7%	40.3%	24.6%
Patrol on foot	.4	.2	1.2	3.6	.8
Non-event traffic control		.5	.2	.1	.3
Event traffic control	.3	1.3	.8	1.2	.9
Traffic enforcement & surveys	2.8	4.3	2.7	2.5	3.3
Criminal incident investigation	3.5	6.6	6.8	11.5	6.7
Non-criminal incident investigation	.4	1.0	.7	1.0	.7
Public and department services	2.5	5.9	3.7	4.1	4.3
Report writing	1.3	3.8	3.9	4.4	3.4
Other clerical duties	.8	.9	.7	1.1	.8
Training, meetings, school attendance	6.4	13.7	7.1	1.5	8.9
Public event planning and duties	.9	2.4	1.7	.4	1.7
Maintenance duties	.4	.9	.8	1.0	.8
Investigation of applicants	.3	1.1	.5		.6
Other special assignments	1.4	3.2	2.2	1.0	2.3
Supervision	13.2	7.2	11.9		9.4
Desk duty	28.8	19.8	19.9	13.1	21.0
Property inspections	4.1	.2	2.0	5.2	2.0
Briefing	1.6	2.1	2.0	3.0	2.0
Lunch and coffee breaks	1.9	3.5	3.3	2.2	3.0
Illness	.8	.8	2.0	1.8	1.3
Other	.8	1.3	1.1	.9	1.1
Total Per Cent	100.0	100.1	99.9	99.9	99.9

of judgment involving a detailed knowledge of the nature of the activities and locations in which they occur enters into the evaluation. The following table presents the comparison by work shifts for two years.

TABLE XXX

Estimated Availability of Uniformed Police for Dispatch to Fire Alarms, 1961 and 1962 (excludes desk officer)

	Available-- No Delay		Available-- Some Delay		Not Available	
	1961	1962	1961	1962	1961	1962
Night Shift	74%	82%	19%	11%	7%	7%
Day Shift	67	57	22	23	11	20
Evening Shift	69	68	18	20	13	12
7:30 p.m.-3:30 a.m.	-	75	-	18	-	7
Average entire uniform force	67%	67%	22%	19%	11%	14%

The increase in availability on the night shift is due to the additional manpower made available by use of the 7:30 p.m.-3:30 a.m. overlapping shift. Additionally, it should be recognized that, after 7:30 p.m., the overlapping shift manpower is a major factor in providing availability of personnel during these hours of the evening shift. The increase in unavailability of day shift men is attributable to the higher level of training of recruits in 1962.

Miscellaneous Factors

The very high personnel turnover rate is a factor of inefficiency which should receive careful attention from

the university. If the department is to operate with an authorized strength which is inadequate and causes long working hours and a great deal of overtime among personnel, who, to a great extent, are motivated toward their academic objectives, then it may be questionable policy to continue a recruiting policy which ensures high turnover and position vacancies which extend for long periods, and presents additional training burdens when the vacancies are filled.

The police need at least one additional automobile and two would be desirable. Personnel wait in the station for transportation on the increasingly frequent busy days of the department.

Police efficiency is absolutely dependent upon public cooperation which, in turn, is dependent upon the image of the police which the public carry in their minds. The image of the university police has been a poor one over the years, but increasing student newspaper publicity of a factual nature is demonstrating to the public that they do have a police force instead of just a group of "mickey mouse ticket writers." The Director has spent a great deal of time seeking out persons with criticisms of the department and has accomplished much in changing unfavorable images, and a faculty committee has been established for the primary purpose of improving police-faculty relations. Veteran officers of the police service report they feel the student attitude toward the department has never been

better and attribute the betterment in student opinion to the newspaper publicity and the reporting of police activity with criminal incidents.

Summary

In all significant respects the efficiency of the police protection seems to be as good as it can be without more manpower.

Morale is generally excellent and personnel are expecting salary and benefit adjustments in the 1963-64 budget. The officer caliber is quite high, the officers work long hours without complaint and the quality of their work is excellent, but increasingly hurried by the pressure of work demands.

Supervision of the department is intensive, training is of a good quality, although recently unduly oriented to training of recruits because of officer turnover. Disciplinary problems are almost unknown, although the command and administrative personnel investigate each citizen complaint with such thoroughness as to cause some uneasiness among the officers, who are constantly reminded of the vulnerability of a police officer to malicious or misguided citizens.

In view of manpower conditions, service activities of the department occupy far too much of its time, and the department is able to secure only 25.4% of its working

uniformed manhours for patrol duty.

The officers, particularly investigators, spend an unreasonable amount of time typing reports--a function which could more efficiently be performed by a dictaphone-typist. This position is requested in the 1963-64 budget. Two such positions will probably be needed to provide appreciable assistance to uniformed officers.

The central efficiency problem is personnel--the number of positions and their turnover. There seems to be no really significant way in which to stretch the efforts of the officers appreciably further. The university has clearly reached a point when it must choose between service cutbacks or steadily increasing protection deficiencies unless it is able to add more officers to the police force. For the basic problem is that the university, in 1962, received 17% less patrol protection in man hours than it did in 1954-55, with a 47% larger police force patrolling a primary protection area increased 230% in size.

CHAPTER IV

PLANNING FOR POLICE-FIRE UNIFICATION

I. FUTURE PROTECTION AND SERVICE DEMANDS

Central to the question of estimating what the future will bring to police and fire protection problems at Michigan State is the question of its own population increase. Pertinent also is the growth and development of the Lansing and East Lansing communities around the university, because of the effect they might have on university crime problems and growth of the East Lansing Fire Department.

Campus Population

While the university has been estimating its future enrollments for years, these estimates have been consistently below the actual enrollment, as for example the 1961 Fall Term enrollment of 24,104 had not been expected until 1963.¹ The most current public estimate of possible enrollments was made by President John Hannah April 4, 1963, in which he stated that Michigan State's enrollments could reach 32,447 by 1965, 40,266 by 1968 and 51,517 by 1972. In

¹ Annual Report of the Registrar, 1961-62 (East Lansing: Michigan State University, 1962), p. 10; also graph on p. 11.

this address he proposed a maximum enrollment of 35,000 students be established.²

In view of the possibility of establishing an enrollment limit, the future of the university will be discussed here as if the limit is a reality, since it provides a much less speculative basis for planning than figures varying from 35,000 to 51,000.

Area Growth

Exact prediction of the growth of an urbanized area around the university and of the Lansing Metropolitan area is not necessary for purposes of this study. It is sufficient to know the population history of the area.

	<u>1940</u>	<u>1950</u>	<u>1960</u>	<u>% Change 1940</u>
East Lansing ³	11,065	20,325	30,198	172.9%
Lansing ⁴	78,753	92,129	113,058	43.5%
Ingham County ⁵	130,616	172,941	211,034	61.5%
Lansing Metro. Area ⁶	191,411	244,159	299,300	56.3%

The trend of growth around the university is obvious. Lansing is growing fastest to the South and East,

²State News (East Lansing: Michigan State University), April 5, 1963, p. 1.

³A Report to the Citizens...City of East Lansing, 1962, op. cit., p. 17.

⁴M.S.U. 1962 Facts Book (East Lansing: Michigan State University, 1962), p. 40.

⁵Ibid.

⁶Ibid.

East Lansing ultimately will expand on the East of the campus or the charter township of Meridian will urbanize on the East side of the campus and to the South of it.

The planned extension of Lansing's Main Street through the campus will bring through the heart of the campus a volume of highway traffic heavier than is now experienced on Grand River Avenue and will probably serve to familiarize a great many more people with the nature of the campus and thus increase its transient problem. The public events of a university of 35,000 persons will serve to bring many more thousands onto campus than now experienced.

Ultimately the campus will be surrounded by urbanized area and will receive increasing attention from casual and transient traffic. At other metropolitan campuses this has meant an increase in crime, disorder and traffic congestion.

Fire Protection

The East Lansing Fire Department will undoubtedly expand in the future. The city manager thinks a second fire station in the city is probable and a second fire station on the campus is possible, depending on the physical expansion of the campus.⁷ The fire chief hopes to expand the department by seven men as soon as possible to reduce

⁷Related to the author by City Manager John Patriarche and Fire Chief Murle Croy.

the work week and provide a six-man response on the campus without regard to future expansion of the city or university.⁸

Examination of the locations of the existing fire stations on the map shows their inefficient protection of the city and the campus and shows how quickly a second city station will be needed in the North and East area of the city if future annexations take place.

Increasing population will bring increasing numbers of fire alarms as well as the need for more fire stations. It is not too extravagant to project a fire department which, under present standards of fire department administration, would be operating four pumper companies and two ladder companies.

The ladder companies will be necessitated by the planned expansion of apartment housing in East Lansing announced in the Lansing State Journal in recent months and shown also in the East Lansing building permit applications.

A six-company fire department projected on present manning standards on the campus of one man on the ladder and three men on a pumper with a second pumper driven by one man would not be adequate for a fire department with four stations. Therefore, the projection assumes three-man pumper companies in each station and the present practice

⁸Related to the author by Fire Chief Murle Croy.

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of one man on a ladder company.

Such manning would require a fire department personnel strength approximately as follows:

4 pumper co. x 3 men	12 men on duty
2 ladder co. x 1 man	2 " " "
1 fire command officer	<u>1</u> " " "
	15 " " "

Assuming a 56-hour work week which is probable within a very few years, either because of social or legislative pressure, it would require 3.33 men to maintain each round-the-clock position, plus an assumed number of administrative and staff personnel as follows:

15 men on duty x 3.33	50 men
fire chief	1
Fire Marshal	1
fire inspector	<u>1</u>
	53 men

Actually, the assumed one-man ladder company is so minimal as to be almost ridiculous and it seems unlikely that a department of more than 50 men would operate a ladder truck in such manner.

But assuming such to be the case in order to use a very conservative manpower requirement for estimation purposes, and assuming that the police continue to provide fire alarm and communication service to the fire department, it is clear the university can expect at least a 65% increase in its contributions toward the salaries of 51 men (excluding the fire inspection personnel). Salary increases cannot be calculated but an increase of 3% per year is

probably not excessive in the absence of unusual economic conditions.

When acquisition of apparatus and its replacement is considered, as well as university payment toward supplies and maintenance costs, it appears likely that the university's fire protection payments will increase at least 75% within a relatively few years.

Police Protection

It seems obvious that the university already has a serious need for additional police officers without any consideration being given for future growth. In terms of a 35,000 enrollment it is likely that a ratio of 1.2 officers per thousand students enrolled will be necessary to provide police services. The 1.2 per thousand ratio with a 35,000 enrollment would put 42 officers on the university payroll, a growth of 68% over the present figure of 25 excluding the Director. To this cost would be added the expense of public event police protection and whatever increases in salaries develop, as well as proportionate increases in cost of vehicles, and the usual supply and equipment expenses.

An additional factor in police protection projections is the very likely development of need for foot patrol beats and fixed post protection of classified research activities. These developments seem inevitable when the

problems of other large universities in urbanized areas are observed.

It is probable that police costs would double by the time the university expands to an enrollment of 35,000 students.

Public Safety Manpower Forecast

In order to get reasonably positive figures to work with, it is assumed that the campus enrollment estimates of the registrar are accurate and that the university will reach the upper limit of 35,000 enrollment in fiscal year 1967-68. It is also assumed that the police will not be able to add more than three men per year on the average in those five years, reaching 40 officers. It is further assumed that the fire department will reach a 56-hour work week by that time, either through its own activity or through legislative action. It is assumed that there will be no expansion to a second fire station in this time and that fire manpower will increase to the immediate goal of the fire chief--a six-man response in each station on a 56-hour work week with a command officer responding, also.

This would require a fire department strength of 40 station personnel, and the existing three lieutenants and one chief; the university would thus be paying for approximately 22 fire personnel by 1967-68. It is further assumed that the fire department will increase by two men

each year as it has tended to do in the past and thus will fall short of necessary manpower by reaching only 40 men in 1967-68.

Thus, under the assumed conditions, neither department will achieve the assumed minimum standard of manning but will have to be content with less manpower than it would like--40 police and 40 fire personnel. In 1967-68 the university would then have 1.14 police per thousand enrollment and will be paying for 0.57 firemen per thousand enrollment for a total of 1.71 public safety employees per thousand enrollment paid for by university funds. The 1962-63 figure was 1.6 public safety employees per thousand enrollment including 1.0 police personnel (excluding the Director) per thousand.

Summary

It is obvious that the future promises nothing but increasing expense for the university in providing adequate police and fire protection. It is equally obvious that the bulk of the expense will be for personnel. The question, then, is that of determining some way of economizing on manpower needs. If public safety manpower can be reduced below the eventual 50% university share of a 40-50 man fire department and 100% support of a 40-45 man university police department, substantial savings can result over a period of years. In short, can the university use less than 60-70

public safety (police and fire) employees when it reaches an enrollment of 35,000?

Potential for such a reduction in personnel lies with the concept of police-fire integration, or utilization of fire manpower, as George Bean realistically terms it.⁹ The next chapter will demonstrate how an integrated police-fire operation can reduce the number of police-fire personnel necessary for the university's protection.

This chapter will consider the application of police-fire integration to the public safety protection of the university by proposing an organization, manpower and basic operational procedures adequate, in the writer's judgment, to provide police and fire protection to the university in the year 1963-64.

II. GENERAL CONSIDERATIONS

It is important that the political, legal and organizational difficulties of such a change be considered first, in order that fundamental obstacles be discovered quickly.

Legal Basis for Unification

Michigan State University, or rather, its Board of Trustees, is a constitutional corporation established by the Constitution of 1908 (still in effect at the time

⁹Bean and McCalla, op. cit., pp. 9-13.

of this writing) and will continue to be so under the new constitution. The Board of Trustees has plenary power to administer the affairs of the university--a power which, in its own sphere, has been held to be independent of and on a parity with the power of the legislature.¹⁰

There seems to be no question that it is the duty of the Board of Trustees to provide for the public safety on its property and that the operation of its own fire department probably would not meet any legal challenge. The statute authorizing the City of East Lansing to provide fire protection to the university is evidence of legislative recognition of the need for fire protection.¹¹

Thus there seems to be no legal obstacle to establishment of a fire department by the university or to its assuming responsibility for its own fire protection through an existing public safety organization.

Political Considerations

The finances of the city of East Lansing would receive quite a shock if the university should assume responsibility for its own fire protection. The city would face the question of whether to continue its large fire department and thereby double its fire department expense,

¹⁰Bane v. State Board of Agriculture, 164 Mich. 417.

¹¹Act 98, Michigan Public Acts of 1929 as amended by Act 214, Michigan Public Acts of 1937.

or to cut back the fire department to some lesser size.

Separation of fire protection from the city need not in any way effectively reduce the fire protection received by the residents of East Lansing since a mutual aid agreement between the university and the city for mutual assistance and response to second alarms or simultaneous alarms would amount to a continuation of the existing response system which amounts to operation as if two separate departments were involved.

Assuming such a mutual aid agreement, the separation would amount in the long run to a mere organizational change.

Organizational Considerations

A major upheaval in the university public safety organization could conceivably result from the integrating process. However, this seems unlikely, since the existing organization of the Department of Public Safety is already an integrated organization--all safety functions of the university are now integrated together except fire fighting. Personnel problems should be minimal. The police personnel are of unusually high caliber and already are adept at adjustment to rapidly changing university conditions. The Director of Public Safety is a former fireman and is sympathetic to the concept of integration of police and fire forces.

Should police personnel dissatisfaction develop (and this is probable only if they are given what appears to them to be an insufficient salary increase to warrant the additional duties and training) the rapid turnover and the ability of the university to transfer employees among all of its many non-academic departments should allow good prospect for coping with personnel dissatisfaction.

Thus the basic philosophical orientation now exists in the department of public safety for implementation of a plan for police-fire integration, and organizational problems would appear to be relatively minor.

III. ORGANIZATION

Certain organizational changes will be necessary in the Department of Public Safety. Administrative and specialty relationships will need re-aligning and a new organizational unit will be necessary

Administration

The Director of Public Safety, responsible to the president, will command three major divisions of the Department of Public Safety--the Safety Division, the Records Office, and the Police-Fire Division.

The Director would retain primary responsibility for liaison outside the Department of Public Safety and represent the department on the numerous committees he now attends, delegating any representation necessary.

Safety Division

The Safety Division corresponds to the former Office of Safety Services and would provide through its specialist personnel the following public services:

1. Fire prevention.
2. Radiation safety.
3. Safety engineering.
4. Traffic safety education.
5. Pest control.
6. Sanitation.
7. The other functions now provided.

If, in the future, a competent administrator can be found to direct and control these varied activities, the safety division should be placed under a single administrator. Recent experience in attempting to employ such a person indicates that the Director is best qualified to continue the direction, control and coordination of these safety activities at present.

Basically, this division will be unchanged in function except as it assumes responsibility for traffic safety education--a logical extension of the preventive functions of this group of personnel.

Records Office

This division would continue its present functions, including:

1. Records maintenance and management.
2. Purchasing and bookkeeping.
3. Property management and maintenance.
4. Operation of the Disaster Control Center and communications activities of the disaster plan.
5. Administrative research and planning for the Director.

Police-Fire Division

This division would be commanded by a captain and would consist of three subdivisions, as follows:

1. The Uniformed Force.
2. The Investigations Office.
3. The Fire and Training Unit.

Uniformed Force. The uniformed force would consist of the existing three shifts (platoons) on the present working schedule. The Midnight and Day shifts would be commanded by sergeants with a corporal assigned to each shift to provide supervisory relief. The afternoon shift, because of its substantial responsibility for more than 50% of fire alarms and most major fires as well as its primary responsibility for police protective duties when compared with the duties of the other shifts, would be commanded by a lieutenant with a sergeant and corporal also assigned, to ensure that there are always two supervisors on duty on this shift.

Investigations Office. Specialist investigations service to the uniformed force would be provided by this unit under command of a sergeant. However, an additional officer would be assigned to meet the obvious need for more manpower and in recognition that assumption of fire training and fire fighting duties by the uniformed force would probably reduce their ability to conduct investigations. Experience may show the need for assignment of still another

officer to this unit after integration is operating.

Fire and Training Unit. This unit would be commanded by a sergeant responsible to the captain for the following:

1. Maintenance of fire fighting apparatus and supervision of the fire apparatus operators.
2. Supervision of the fire fighting students.
3. Training of all police personnel, fire operators and student firemen in police and fire subjects.
4. Direction, control and coordination of pre-fire planning with platoon commanders and fire safety officer.
5. Scheduling and supervision of uniformed officer and fire apparatus operator building inspection activities in cooperation with the fire safety officer.

Six apparatus operators would be required working a 56 to 64-hour work week on a 24-hour day. Two operators would be on duty at all times. Nine students would be employed as firemen, provided room and board, and given the further opportunity to earn spending money working other duties now performed by students if this does not interfere with necessary fire fighting standby duties or their academic obligations. Specifics of the student fireman duty schedule are provided later.

The sergeant in charge of this unit can be recruited from within the department if suitable ability is available

or recruited from outside the department if necessary.

IV. UNIFIED POLICE-FIRE OPERATIONS

This section presents police and fire operations which are directly affected by the integration system or which are necessary to understand the functioning of the integrated department. •

Police-Fire Priorities

Priorities must be established to prevent confusion and delay in dealing with simultaneous incidents. The priority will be based on apparent threat to life, and all fire incidents involving buildings are arbitrarily defined as being a threat to life. Dispatching procedures for potential conflicts must be prescribed in the rules and regulations of the department and provision for assistance from neighboring agencies must be made through mutual aid agreements.

The Basic Platoon--Minimum Duty Manpower

Department regulations will establish a minimum or basic fire fighting platoon strength below which the duty platoon will not be allowed to fall and will require call-back of off-duty men to maintain this basic platoon strength. This concept of a basic platoon is necessary to provide a constant on-duty fire fighting potential. The common police practice of being "short" on the shift

because of illness or for other reasons would be detrimental to proper protection of the public and property from fire and explosion.

Foreseen Situations. The public events of the university frequently require attendance on duty of all its police personnel. The basic platoon strength can be provided under these conditions with either a combination of apparatus operators and student firemen or by use of apparatus operators alone with appropriate supervision provided in each case. Therefore, a football game will require attendance on duty of all fire apparatus operators on special event overtime pay in the same manner police personnel are now required to work and be reimbursed for their services.

Unforeseen Situations. Illness provides a common potential for reducing the basic platoon strength below its mandatory minimum. This can be compensated for by recall of off-duty personnel if a specialist such as apparatus operator is involved, or by resort to required standby duty of an increased number of student firemen as the situation and particular position vacant requires. Thus shortage of a patrolman on a quiet night would be no problem because a student fireman could be held in the station to provide fire fighting manpower.

Manpower Availability

The function of dispatch and communications is

basic to the successful operation of an integrated police-fire department. An essential feature of this proposed organization is a communications system which would provide to each on-duty patrolman and supervisor his own individual radio receiver. With this he can proceed about his normal duties and always be available for fire alarm response.

Fire Fighting Operations

This section assumes the existence of an appropriate fire alarm manpower response. The necessary elements of this response will be developed in the subsequent discussion of personnel requirements and considerations.

Fire Alarm Response. Farm and rural structure alarms will receive response from two pumpers, each preferably equipped with water tanks of approximately 500 gallons' capacity. Currently only one of such capacity is available in the East Lansing fire department inventory of fire apparatus. Because the records show that an alarm of fire in the farm structures is usually an actual fire, the mutual aid provision will call for an automatic response of a tanker truck from a neighboring fire department to those structures which have a limited water supply.

Grass and vehicle fires will receive a response of one pumper, a supervisor, a patrolman and such student firemen as might be in the station.

Married housing apartments will have a response of

two pumpers. Longer ladders would be put on the pumpers to make available adequate ladder service to reach the roofs of the faculty bricks and the farm structures.

Dormitories will receive a response of one pumper and one ladder truck to all alarms, with a pre-planned procedure for water supply to each wing of each building. Existing alarm systems will provide adequate information for this level of pre-planning.

All other buildings will receive a response of one pumper and one ladder truck except those with roofs which can be reached from ladders carried on the pumpers.

Pre-fire Planning. Pre-fire planning will be of vital importance if efficient fire operations are to be assured. Because of the close relationship between planning and training, the pre-fire planning will be the responsibility of the training sergeant. The plans will be developed in consultation with the Fire Safety Officer, platoon commanders and the Captain and will include:

1. Standard procedures for certain common fire situations such as the dormitory buildings of similar design.

2. Individual plans for buildings deemed to be target hazards, such as the farm complexes.

Emphasis of the pre-fire plans will be upon the first-due duties to ensure effective use of available water supply and building structural features. The plans will

also include building floor plans showing utility systems and known hazards and an area map showing necessary procedures to develop maximum available water supply in the event the alarm should be a major fire. The pre-fire plans will be filed near the first-due pumper so that the plan for the individual building involved can be taken to each alarm. The building master key will also be taken to the alarm.

Multiple and Subsequent Alarms. Provision for dealing with these alarm situations must be made in mutual aid agreements with East Lansing and other neighboring fire departments. A multiple alarm is one which requires additional men and apparatus beyond the first-due complement which responded. Because of the limited manpower sent to university alarms, most working fires would require a second alarm. A subsequent alarm is one received while the fire apparatus is out of service at a previously received and different fire alarm.¹² East Lansing and the university would provide for each other the response for second alarm apparatus and manpower in a multiple alarm situation on a reciprocal basis just as the other fire station complement is now dispatched to assist the first station crew. Apparatus and men needed beyond a second alarm could come

¹²Officer Training: Fire Fighting Facilities, Planning and Procedures, op. cit., p. 81.

from personnel called back to duty or from still another fire department, depending on the arrangements made at the time the mutual aid agreements were prepared. It is obvious that a small department will never be able to cope with a fire totally involving buildings such as Agriculture Hall or Wells Hall. Such a fire would require several aerial ladders alone to provide ladder pipe streams and large capacity pumpers to supply them, as well as other pumpers to provide water from the river if the water supply were overtaxed as it probably would be under conditions requiring use of heavy streams.

When extended duty is required at a multiple alarm fire, the mutual aid agreement must also provide for stationing of a fire company from another jurisdiction in the city or the campus to provide for response to any subsequent alarm received while the major fire is in progress.

Response to a subsequent alarm received while university apparatus is at a prior alarm would be provided normally by East Lansing's first alarm companies. If the university alarm is to be time consuming, such as a grass fire or dump fire, but does not require more manpower, then the agreement would probably provide for recall of off-duty men to provide for subsequent alarm response and East Lansing would be limited in obligation to covering only until the off-duty manpower has arrived at the station.

Command of fire fighting operations at a multiple

alarm fire involving mutual aid assistance from other departments would be vested in the chief of the agency being assisted, according to recommended fire protection procedure.¹³

Initial Fire Attack Procedures. A standard operating procedure for each type of building (or each building, if study proves this necessary) should be drawn up to ensure maximum efficiency in pumper placement and use of available water supply for standpipe and/or sprinkler system operations.

Whenever an actual fire is reported, regulations should require a pumper hook-up to a hydrant and use of the standpipe system for hose lines. A "doughnut roll" of single-jacket, lightweight 1 1/2-inch hose should be taken into the building whenever a fire is reported to ensure adequacy in length and number of standpipe lines for fire fighting.¹⁴

A training program of repetitive drill on weekends and holidays will be carried out on the actual buildings based on a training "by the numbers" system such as is used so effectively by the United States Navy in its structural fire fighting drill evolutions.¹⁵ This method could be

¹³Ibid., p. 43.

¹⁴Donald M. O'Brien, editor, The Fire Chief's Handbook (New York: The Reuben Donnelley Corporation, 1960), p. 358.

¹⁵Structural Fire-Fighting Manual (Washington: United States Navy, 1953, as revised), p. 81.

modified to assign numbers to arriving patrolmen in terms of the order of their arrival and the apparent nature of the alarm.

Each supervisor and command officer at the scene must be equipped with a two-way miniature radio and each patrolman with a miniature receiver. When the fire or situation is accurately located this radio will allow effective coordination of men and apparatus and will prevent lost time and motion.

Department administrators will have to be careful that shift personnel are not allowed to avoid making hydrant connections when a fire is reported, since this practice has had disastrous effects elsewhere in fire protection history. It requires less time to make such a connection as part of a pre-planned initial attack than it does to relocate apparatus, make U-turns and perform other similar maneuvers to make a hydrant connection after the fire attack is under way and the minimal force which will respond on first alarms is depleted by rescue and fire fighting obligations.

Minor equipment such as variable volume spray nozzles, gated wye hydrant connectors, single-jacket light weight 1 1/2-inch hose, and tactics such as use of hose clamps, and in-line hydrant-to-fire hose lay for water supply with 3-inch or 3 1/2-inch hose must be used to secure maximum fire fighting and rescue potential from the

limited number of men available.

Inhalator-Resuscitator Service

Modern developments in this type of equipment and the expansion of the campus area make it undesirable and inefficient to provide this service from a centrally located station.

The new lightweight equipment costs only half as much as the traditional equipment and can easily be carried by one man. Such a unit should be placed in each patrol car, thus placing the service as much as two or three minutes closer to the victim--literally a matter of life or death in cases of breathing stoppage.

The equipment will operate for fifteen minutes, allowing adequate time for the second patrol car dispatched to bring an extra oxygen bottle to the scene, for use until transferral to an ambulance which has its own supply of oxygen.

Transportation of Sick and Injured

This service, so far as it related to stretcher transportation to off-campus hospitals, must be reconsidered in terms of an integrated operation. It is not wise to have less than two trained men involved in a stretcher transportation.¹⁶ Two men will represent a substantial

¹⁶Carl B. Young, Jr., First Aid and Resuscitation (Springfield, Illinois: Charles C. Thomas Publisher, 1954), pp. 88-90.

portion of the fire fighting response personnel of the university and to have them in Lansing many minutes away from effective fire response is not desirable.

Either commercial ambulances will have to be summoned for off-campus hospital trips or the admittance policy of Olin Health Service hospital will have to be altered to allow admittance and emergency care of non-students until they can be transferred to another hospital, or additional manpower must be provided for performance of this specific function.

Use of Specialists for Fire Fighting

The records officer, staff officer (if this position is created) and the fire safety officer would respond to fire alarms on the weekday day shift.

Investigators, because of their highly unpredictable hours and location while working, would be trained for fire fighting but expected to do so only in emergencies or while assigned to uniformed duties.

Whether the safety equipment maintenance men should perform fire fighting duties is a question to be decided later, if additional fire fighting personnel is needed on the day shift.

The safety officers need not be trained in fire fighting or expected to perform fire fighting duties. The radiation safety officer is important to effective protection

of fire fighters and should be required to be available always when on duty through proper use of a radio equipped vehicle.

Duties of Fire Apparatus Operators

These six men are adequate in number to work a 56 to 64-hour schedule. To start with, the longer schedule will be desirable to provide services of an apparatus operator for the extensive training exercises which will be necessary. After relief operators have been trained among interested patrolmen, the apparatus operators can go on a 56-hour work week.

A cardinal purpose of this program is to use the services of the fireman's standby time. These men should be required to perform other duties beyond merely standby and apparatus maintenance. Two of the men should be trained in apparatus maintenance and the making of minor repairs and adjustments. Such a service is indispensable in a department having limited apparatus of diverse manufacture. In addition, some of the following duties could be assigned to these men as actual experience proves desirable and feasible:

1. Cleaning and maintenance of the station.
2. Assistance to the desk officer on day shift.
3. Performance of routine clerical duties such as tabulation of officers' daily activity reports, and

platoon and department activity reports.

4. Maintenance and preparation of fire extinguishers and other safety equipment, thus freeing the safety equipment men's time for actual work in the rapidly expanding number of buildings.

5. Building inspection for fire and safety hazards and for familiarization with the building.

It is obvious that there are a great many duties these men can perform. However, on a 24-hour duty day it is equally obvious there should be a limit to the number of hours of actual work they should perform. This limit probably lies somewhere between four and six actual work hours each day.

Fire Prevention Inspection

Integration would be a failure, in the writer's opinion, if it did not materially bolster the force applied to fire inspection, and to general safety conditions in the university buildings.

It is proposed, therefore, that the apparatus drivers perform building inspections in good weather. In bad weather, when time required to clean up the apparatus would offset the inspection time gained, these men can perform other duties as necessary.

In addition, it is essential that patrol personnel be assigned building inspection obligations according to

a planned program drawn up by the fire and training sergeant. This inspection process should involve assignment to a specific portion of a building, include taking of the pre-fire planning package with the inspecting officer, and inspection of the fire attack features noted on the plans for that building area, as well as notification of the safety division of any apparent safety deficiencies noted in the area. Work demands on the day shift will limit the time available for this duty on weekdays, but it can be performed exceptionally well on weekends and holidays. This activity will provide the additional benefit of the police presence in buildings to deter unauthorized use of buildings and property.

Assignment and control of these inspections by the Captain through the staff arrangements and supervision of the fire and training sergeant should ensure that the importance of building familiarization and fire prevention is not subordinated to the press of daily police work demands.

V. PERSONNEL CONSIDERATIONS

This section is concerned with the manpower aspects of providing a combined police-fire operation on the university campus. Included are determination of the size of the basic platoon fire alarm response force, the effect of integration on salaries and benefits, the role and position of the student fire fighters, the recruitment of

personnel and the training obligations in an integrated organization.

Uniformed Force Manpower Requirements

Necessary manpower of the uniformed force is determined from two factors: (1) the personnel necessary at all times for fire alarm response; and (2) the requirements, if any, for police manpower over and above that needed for fire fighting response.

Basic Platoon Manpower. Normal fire fighting manpower response for buildings of the nature of the university's would be at least 12 men and authorities would prefer twice that under some conditions which fortunately do not exist on campus.¹⁷ However, the insurance companies have established the fact of very low fire risks in university-type buildings and it seems unreasonable to provide manpower and companies for a normal risk when experience justifies a very low insurance rate for this institution.

However, any reduction in manpower should come through reduction in the number of companies responding, not in the company manpower.

¹⁷Warren Y. Kimball, "Manning a Response Group for Normal Urban Fire Hazards," Firemen (October, 1959), p. 13; for discussion of "minimum fire forces that would provide reasonably effective fire companies and which could be maintained reasonably by cities of various size," see: Warren Y. Kimball, "Fire Department Manning," Firemen (June, 1959), pp. 12-16.

Following are authoritative statements which provide guidance in determining effective manpower response for the university.

A private fire department's function is to provide a force of fire fighters specifically for the needs of the property, the members of which are acquainted with the property in a way impossible for members of any outside public fire department to know.¹⁸

One of the gravest mistakes made by a majority of fire departments is to try to operate more apparatus on a first-run basis than can be effectively manned with the men on duty or immediately available.¹⁹

. . . is almost impossible to obtain effective teamwork and coordination with undermanned crews. . . . A four-man crew on a pumper is not 80 per cent as effective as a required five-man crew, but perhaps only two-thirds as effective. A three-man crew is not 60 per cent as effective, but less than 25 per cent as effective. A general practice should be to avoid attempting to operate more units than can be effectively manned even if some of the response distances must be somewhat increased.²⁰

Greater than five-man engine companies are not suggested as a minimum manning because experience has shown that five-man crews can be highly efficient either with one-piece or two-piece engine companies. We prefer to use available manpower to strengthen the ladder companies as much as possible.²¹

. . . no fire company should be operated with less than four men at any time. . . .²²

¹⁸Tryon, op. cit., section 11, p. 22.

¹⁹Warren Y. Kimball, "Grouping Fire Companies," Firemen (August, 1962), p. 12.

²⁰Tryon, op. cit., section 10, p. 10.

²¹Kimball, "Fire Department Manning," op. cit., p. 14.

²²Ibid., p. 14.

. . . 1 1/2-inch hose is adequate for attacking the majority of fires that can be fought with inside hose lines.²³

For use inside buildings, 1 1/2-in. hose is commonly used and the 2 1/2-in. hose is largely reserved for outside work.²⁴

. . . is conceivable that the time may come when all buildings are of such construction and so protected automatically that the number of men required for manual fire fighting may be reduced. . . .²⁵

From the above and other sources on progressive fire fighting methods, and considering the nature of most university buildings, it seems that a six-man response to fires would be appropriate.

Use of self-contained breathing equipment would allow a prompt, effective and sustained attack on building fires from within the building using 1 1/2-inch hose lines which can each be handled by one man if necessary. Any fire which is beyond control by several such hose lines would be a multiple alarm fire and additional men would be summoned, very probably to fight the fire from outside the building. It should be pointed out that even use of this size hose line is not feasible with proposed manpower except for the standpipe systems in the buildings, which

²³Tryon, op. cit., section 13, p. 75.

²⁴Operating Fire Department Pumps (Boston: National Fire Protection Association, 1960), p. 112.

²⁵Fire Department Manning--On-duty Strength (New York: National Board of Fire Underwriters, Special Interest Bulletin No. 230, September, 1959).

eliminate the manpower-consuming task of dragging heavy hose lines up flights of stairs.

A six-man response would consist of the following:

1. A supervisor in command with a two-way minia-ture radio.
2. A pumper operator positioning the first-due pumper according to pre-plan arrangements to supply water to the standpipe of the affected wing of the building using an in-line water supply system capable of delivering not less than 400 gallons per minute.²⁶
3. A ladder truck operator to operate the aerial, assist in pumper supply line connections as necessary, provide small tools, power supply, smoke ejector service, etc.
4. A first-due patrolman to respond as first arriving officer, locate fire for arriving units if possible and attack with extinguishing equipment provided in all university buildings, and/or take suitable steps to evacuate occupants and restrict spread of flame and smoke.
5. A second-due patrolman (or on some shifts a student fireman or specialist officer assigned to the station) to take lightweight 1 1/2-inch hose with adjustable-volume spray nozzle attached inside the building.
6. A third-due patrolman (or on some shifts a student fireman or specialist officer assigned to the

²⁶Ibid., pp. 113-115.

station) to assist in pumper connections to the building, take additional hose or appliances into the building, assist in ladder or hose operation or perform other duties as the supervisor directs.

This six-man basic platoon is adequate, when properly trained and supervised, to deal with almost all fires that occur on the university property. This size crew could put as much as 375 gallons of water on a fire each minute without additional assistance. This manpower is adequate to place the largest ground ladder carried by a fire department if this unlikely duty were necessary the first thing on arrival at a fire, or perform any of the duties necessary at a small fire. It is adequate only by virtue of university construction practices and its adequacy is doubtful under some easily possible conditions in certain of the older buildings and some of the farm complexes of the university.

But the first-due assignment of manpower in even the largest cities is not adequate for all of the easily possible fire conditions that might be encountered on first-due arrival at target hazard structures as the number of multiple alarm fires shows. No city can provide an always adequate response and neither can the university, but this six-man crew should be adequate for all but one or two fires a year. Few city fire chiefs would be unhappy with this percentage of adequacy in first alarm situations.

Personnel to Maintain Basic Platoon. In the paragraphs above, it was determined that a six-man fire response crew was appropriate to university needs as a minimum crew. To this must be added a seventh man on each platoon, the desk officer.

Two of the seven men are provided by the apparatus operators on a 24-hour shift. Thus five men must be provided from the uniformed force. Police records demonstrate that eight men are necessary on a shift to provide five men on duty at all times, or a total of 24 men and supervisors.

Additional Police Patrol Needs. Currently, the police are providing four patrol officers and a supervisor on car and foot patrol from 7:30 p.m. to 11:30 p.m. and are prevented from providing the same force until 3:00 a.m. only by lack of manpower and position vacancies. The unified force should certainly not reduce police patrol manpower and should provide at least the six men on duty after 7:30 p.m. If possible, the unification process should provide this force until 3:30 a.m.

The role of the third platoon (3:30 p.m.-11:30 p.m.) will be an important one in an integrated department, as it is in most police departments. Following is a listing of some pertinent workload items showing the percentage of the total of such incidents which arise on the third platoon.

TABLE XXXI

Third Platoon (3:30 p.m.-11:30 p.m.) Per Cent of Workload
(from various unpublished university police studies)

Criminal incident reports written by patrols ('60-61)	46.5%
Non-criminal reports written by patrols ('60-61)	38.7%
All incident reports written (1959-62)	47.6%
All fire alarms (1955-62)	53.5%
Simultaneous incidents (1958-59)	57.3%
Simultaneous incidents (1962)	70.0%
Fire losses over \$1,000 (1955-62)	35.0%
Inhalator runs	42.3%
Motor vehicle accidents (1958-59)	44.5%
Structural fire losses over \$1,000 (1955-62) (excluding construction sites)	46.7%

In the 1962-63 fiscal year, police records show for the first time in department history that the third platoon is writing more reports than the day shift. There appears to be a solid trend in the past three years for police workload to shift toward the hours of darkness.

In view of this pattern and because of the protection needs on this shift, the need for supplementary patrol manpower to assist the midnight shift, and the fact that during this shift neither fire fighting students nor personnel assigned to station duties will be dependably available if fire calls should conflict with emergency police affairs, it is recommended that the third platoon have eleven men.

Effect of Position Vacancies. High turnover should be considered in evaluating the need for personnel in exactly the way vacations and illness must be provided for

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in order to provide a guaranteed minimum of men on duty. The year 1962 showed an average of 1.3 positions vacant with two positions vacant simultaneously as a common experience. Therefore, two extra men are needed to provide adequately trained men to cover position vacancies and recruit inexperience.

Reducing Personnel Needs. Need for full-time manpower can be reduced by appropriate use of specialist personnel working in the station for fire response, and by use of student firemen living in the fire station and required to be in attendance in certain minimum numbers to complement the on-duty police patrol force. Use of students will obviate the need to have more policemen on duty than conditions warrant while still guaranteeing an adequate fire alarm response manpower.

What are the policing manpower needs? Consensus of the university police force is that the on-duty manpower needed to provide an adequate level of police protection (but not comparable to the level of 1957-58) would be sixteen men each day, distributed as shown below.

TABLE XXXII

Daily Uniform Police On-Duty Manpower Needs (1963-64)
(weekday with school in session)

Position	Platoons			7:30 p.m.- 3:30 a.m.
	First	Second	Third	
Supervisor	1	1	1	
Desk Officer	1	1	1	
Patrolmen	1	3	3	3

It is agreed by all consulted that the present practice of reducing day shift strength on weekends and holidays will still be feasible in 1963-64 and that the present practice of reducing police manpower on-duty between terms and on long holidays when the campus is relatively unoccupied will also be feasible.

The table below presents the manpower required for the uniformed force to provide the basic platoon strength of five police plus the two apparatus operators.

TABLE XXXIII

Reduction in Uniformed Police Needs
by Use of Specialists and Student Firemen

Eight men on three shifts to provide five men on-duty	24
Reduce one man by providing for inter-shift transfers to secure scheduling efficiency	- $\frac{1}{23}$
Add three men on 7:30 p.m.-3:30 a.m. shift now existing to provide heavy police patrol at night	+ $\frac{3}{26}$
Add two for position vacancies and training	+ $\frac{2}{28}$
Reduce by use of weekday day shift specialists	- $\frac{1}{27}$
Reduce by use of students:	
6 on duty 10:30 p.m.-7:30 a.m. (reduce 4 men)	
2 on duty weekend and holiday day shift (reduce 1)	
position vacancy coverage not needed due to students available for fire duty (reduce 1)	- $\frac{6}{21}$
Add one lieutenant made necessary by integration to ensure adequate supervision from 3:30 p.m.-11:30 p.m.	+ $\frac{1}{22}$

Thus employment of nine students (to provide them adequate time off) will eliminate the need for six full-time

public safety officers and will ensure a very large fire response manpower during the hours of darkness when life hazard is high, when the chance of fires burning undetected for long periods is high and when the small number of on-duty police personnel are more likely to become involved with time-consuming duties without being able to call on other working personnel at the station if a fire alarm is received.

Salaries

It is generally conceded in the literature on police-fire integration that performance of double duties merits a substantial salary increase. It is proposed here that the salary increase be at least 5% for patrolmen and 10% for supervisory and command officers following the reasoning that the supervisory and command personnel must not only learn the fire fighting skills as must the patrolmen, but they must also learn fire fighting tactics and command, instruct, and assume responsibility for making proper decisions--therefore, the learning job and the responsibilities of the supervisory and command personnel are at least double those of the patrolmen.

It is proposed here that the apparatus operators not be paid as much as patrolmen since they will not be required to learn and perform police duties. No raise is proposed for the fire safety officer since he now routinely

assists the fire department in fire fighting as part of his duty performance and will not be called upon under unification to exercise more responsibility.

Following the above principles, a proposed salary schedule for integration is presented below with proposed salaries rounded off to even figures for easy manipulation in Chapter V.

TABLE XXXIV

Proposed Unified Salary Schedule

Position	1962-63	Maximum
	Maximum Salary	Proposed Salary
Captain	\$8,220	\$9,000
Lieutenant	7,200	7,900
Sergeant	6,600	7,200
Corporal	6,060	6,600
Patrolman	5,872	6,200
Apparatus Operator	5,800	5,800

Student Firefighters

It is proposed that the university provide room and board in the fire station for nine student fire fighters, who would be required to be in the station for response to alarms according to the following schedule:

6 student firemen available from 10:30 p.m.-
7:30 a.m. every night
2 student firemen available on weekend and
holiday day shift

During certain public events requiring large amounts of police manpower, the fire fighting response would be provided by these students and the apparatus operators on a special event pay basis. These students would also be

given first opportunity to work for the department of public safety performing the many jobs which students presently perform in traffic and parking control.

Thus it should be possible for a student fireman to receive his entire education and living expenses with an obligation to undergo necessary preliminary training and be available in the fire station approximately 48 hours per week. During these hours of availability he would have no duties (in the absence of fire alarms) except to keep his own quarters clean and so could utilize them for studying.

The fire and training sergeant would be responsible for the supervision of these students, their scheduling, and ensuring their satisfactory adjustment to their educational responsibilities, and would refer any having difficulty to the advisory and counseling agencies of the university.

If a stronger fire manpower response should become necessary, students could be required to respond to any fire alarm received while they were in the station occurring more than 30 minutes prior to their next scheduled class. This would leave them time to return from the normal fire run and leave for class. This procedure could be modified to apply only when the desk officer has patrol officers out of service and calls for student fireman response. It is estimated that such a system would add one

to three more fire fighters to almost every fire alarm.

Arrangements could be made for students to eat meals on staggered hours at a dormitory at a 1962-63 rate of \$2.20 per day, thus assuring a balanced diet.

Under present conditions of university operations it would not be necessary to have all nine student firemen positions filled during the summer term. The workload is sufficiently light in the summer to allow a rescheduling of patrolmen which, even with vacations in effect, would be adequate for the six-man response using the services of three students. It seems possible that with room and board provided, as well as the opportunity to earn a substantial amount of spending money through non-fire duties, some of the student firemen would not find it necessary to leave the university the entire summer to take summer jobs.

Training

The need for training will be emphasized again by quotation from the section of the National Fire Protection Association's Inspection Manual, instructing insurance inspectors how to evaluate public fire department performance in protecting insured properties.

A fire department finds that most of its work is in dealing with trivial matters: fires in rubbish, grass, automobiles and the like. Usually less than half of the alarms answered involve buildings, and of the buildings, half to two-thirds are in dwellings. In the majority of its work, the

fire department is not called upon to display the skill and ingenuity required for the occasional serious fire at an important property. Many city firemen are not called upon to operate a pump as often as once a month in regular fire duty. Consequently the ability of the fire force depends on the regular practice and training it receives. . . .²⁷

A constant and continuous training program will obviously be essential, for the integrated public safety organization will be providing fire protection to an unusual mixture of big city and rural structures, all of substantial value and many having irreplaceable contents.

Fire Training. A regular weekly drill session should be held on each shift according to a schedule prepared by the fire and training officer and issued by the captain. If properly organized, an hour should be sufficient for each shift. The shift commanders should also be encouraged to hold unscheduled drills as they discover weaknesses to keep personnel alert and maintain a high level of efficiency in a variety of fire duties.

On weekends in good weather, the department should hold a drill period of two or three hours' duration for an off-duty shift under supervision of the captain and training officer, emphasizing large-fire operations with particular emphasis on ladder work and use of hose lines on ladders. This would allow platoon supervisors to utilize their on-duty training periods to secure maximum teamwork

²⁷Inspection Manual (Boston: National Fire Protection Association, 1959), p. 299.

in the execution of the pre-planned standard response patterns developed for individual buildings.

The initial training of men should involve at least two full weeks of intensive drill and classroom instruction in the skills and techniques of the fireman. Supervisors and command officers should have an additional two weeks of instruction in supervisory and command duties, and should spend some time with the fire chiefs in a large city such as Detroit observing the process of coping with major fires as well as minor fires. This would give them quickly the equivalent of several years' actual experience with serious fires in East Lansing and would expose them to the experiences of men who have done fire fighting command duty at major fires for many years.

Analysis of a series of articles in Fire Engineering surveying the training practices of United States fire departments indicates the proposed two weeks' recruit training is consistent with national practice, considering the caliber of men undergoing the training.

The recruit fire training should be based on the Oklahoma fire training series, which was prepared by an excellent faculty and is used at the University of Michigan Fire College. Faculty of the University of Michigan should be obtained to provide the recruit and command training, since there are no local fire fighting personnel available who have adequate teaching experience for success with

college-level personnel.

All initial training should be on an extra-pay basis outside the normal duty time of the department of public safety, since the personnel requirements laid out in this plan do not provide surplus manpower for an adequate on-duty pre-integration training program.

To ensure the appearance of appropriate balance for fire protection authorities, the amount of time spent on fire training should at least equal that spent on police training. The training value of pre-fire planning should not be overlooked in evaluating training adequacy.

Police Training. There seems little reason for changes in past police training policies of the department. In 1961 2.84% of police time below the rank of lieutenant was spent on training. The figure for 1962 was 6.45%, representing the higher personnel turnover. This is a respectable figure considering the work demands on the department. Fire training normally should not be allowed to interfere with police training; however, such interference is to be expected in the first year of operation.

Supervisory and Command Training. The training of police in the past has devoted inadequate attention to the training needs of the supervisors who constitute potential command officers when the probable growth of the department is considered. Particularly needed is a down-to-earth program on supervisory techniques, personnel

evaluation, and better teaching. The university faculty should be able to develop a very high quality program in this area and the increased manpower and training obligations of the department make this a mandatory obligation of the administrators and the university if proper adjustment to the high turnover rate and increased burden of fire training is to be made by the supervisors.

VI. PLANT AND EQUIPMENT FACTORS

Unification will involve expensive needs in plant and equipment, primarily in the area of a public safety building and fire apparatus. Other equipment needs, including vehicles for expanding patrol forces, would arise with the normal expansion of the police service. It is probable also that more fire apparatus would normally be purchased by East Lansing, judging by past history, but integration would advance the need for this item.

Police-Fire Building

A single building to house the unified police-fire organization will be essential. Past administrative experience of the university indicates that the rest of the public safety department activities should also be housed in the same building to ensure proper control and coordination by the Director.

Campus planning for removal of the quonset huts at the time of this writing indicates that new quarters

for the department of public safety will have to be supplied in a matter of a very few years at most, without considering the impact of a plan for police-fire integration. Housing a unified department could be accomplished by adding space to the existing fire station, converting some other campus building or constructing a completely new building.

Use of Existing Fire Station. A few years ago this would have been the desirable solution. However, the structure is now surrounded by a dormitory complex which houses more than 3,300 students. This location would put the police station in an area having a high potential for mischievous or malicious interference with public safety operations and the private vehicles of the officers--a likely activity against which there would be no inexpensive or palatable solution for the university. Further, the dormitories have been located so close to the fire station that it would be most difficult to locate all the land-consuming operations of a university police department on the available site. Fire fighting drills would be out of the question, also.

Remodeling an Existing Building. Only one building on the university campus appears to have any potential for the unified organization--the Food Stores building on Power Plant Road. This location is removed from dormitories, is within a block of the ideal site location in terms of response times and distances to serve the campus from a

single fire station, has vehicle garage space which can be inexpensively expanded and has a great deal of floor space including full facilities for handling the storage of materials. Remodeling this building would probably be considerably less expensive than construction of a new building; however, this building would have some awkward space relationships. A further argument against use of this building is its design for storage of heavy materials--an expensive building feature which would be to a considerable extent wasted on a police-fire-safety occupancy.

A New Police-Fire Building. The department of public safety has estimated its building space requirements at 15,000 square feet for a department not to exceed 100 personnel. This estimate did not include interior bicycle storage which university landscaping objectives might render necessary, or police-fire unification.

A Second Fire Station. The East Lansing city manager, fire chief and university fire insurance carriers have all mentioned the possibility that the university will require a second fire station in future years. Revision of fire station location and fire company response standards by the National Board of Fire Underwriters in February, 1963, makes the need for a second station unlikely for any area north of Mount Hope Avenue unless inferior construction practices should be employed in the future.²⁸

²⁸Fire Department Stations--Planning the Location

Fire Fighting Apparatus

The university has a 50% interest in the following fire apparatus; a unified operation would need an aerial ladder and two pumpers.

TABLE XXXV

Fire Apparatus

Year	Apparatus	Cost
1951	Mack 750 gpm pumper	\$14,455
1956	Seagrave 85 ft. aerial	39,650
1958	Pirsch 750 gpm pumper	21,100
1958	International 750 gpm	18,000
1963	Bean service ladder	19,328
		<u>\$112,533</u>

Of the existing apparatus listed above, only the aerial ladder and the International pumper are of particular utility to the university. The Bean ladder truck has no aerial, and the other two pumpers have water tanks considerably smaller than that necessary for protection of rural structures of the size and value of university farm buildings.

For its integrated department the university should seek to acquire the International pumper and the aerial ladder truck which together have a value of approximately half that of all the modern apparatus purchased since the agreement. Purchase by the university of a fully equipped

(New York: National Board of Fire Underwriters Special Interest Bulletin No. 176, February, 1963).

high volume pumper with 500-gallon water tank, high pressure pump and full load of large hose would cost approximately \$32,000. The only other fire apparatus cost resulting from unification would be the cost of additional accessory equipment for the aerial ladder truck to allow its regular first-alarm response and intended use as the source of tools, lights and other equipment at fires.

Miscellaneous Equipment

Communications equipment will be a major expense and will run approximately as follows if the university finds it necessary to acquire its own radio frequency. The figures below represent a maximum cost.

TABLE XXXVI

Communications Equipment Cost

Miniature 2-way transceivers, tone activated, for supervisor, three patrolmen	\$2,600
Vehicle radios for two additional cars and one existing safety services car	1,800
Base station with point-to-point and emergency standby feature	2,000
Tone encoding system for base station	650
	<u>7,050</u>
Recording equipment for base station	1,000
	<u>\$8,050</u>

Fire fighting clothes for officers and student firemen would cost approximately \$80 each and include helmet, boots, coat, gloves, fatigue clothes, spanner wrench and hose strap. Apparatus operators and student fire fighters

should also be furnished bunker pants.

Equipment for patrol cars should include a pressurized water extinguisher in addition to the existing dry chemical extinguisher, a hydrant wrench and a self-contained breathing mask. This equipment can be furnished from existing public safety budgets and inventories of extinguishers and breathing masks over a two-year period. Future experience may indicate desirability of having other equipment in the cars, particularly such items as hand lanterns, Halligan tools and lengths of rope of sufficient strength to support two people.

VII. EFFECTING THE CONVERSION

The conversion process involves three major areas: (1) separation from East Lansing fire department, (2) acquisition of necessary apparatus not available after separation and of fire apparatus operators and student fire fighters, and (3) the fire training process for police and student firemen.

Separation from East Lansing

It is not possible to predict here what course the details of the separation might take. However, of particular concern are division of apparatus and equipment, mutual aid agreements and the future of the East Lansing firemen whose salaries are now paid from university funds.

The separation process should include written mutual

aid agreements on a reciprocal basis without cost except acceptance of financial responsibility by the department being assisted for injuries, deaths or equipment loss suffered. Provision should also be made for the chief of the department being assisted to be in command.

Acquisition of necessary apparatus and equipment should immediately follow conclusion of an agreement for division of equipment in order for delivery to take place before the unified operation is activated.

Apparatus Operators and Student Firefighters

It is possible that the university could hire six of the East Lansing firemen as apparatus operators if the city cannot retain their services after separation. Students could be recruited as soon as the decision was made to proceed with unification. This should be a relatively simple process if a major school term is in session.

Pre-unification Fire Training

The only means seen practicable to effect the necessary training program is to conduct the program in a summer term on a paid overtime basis and using a reduced on-duty police strength as much as possible.

Instructors could be obtained from the fire service training staff of the University of Michigan who should design a special training course for the integrated department, concentrating on procedures and fires likely to be

encountered on the campus.

Cost of this will be substantial, but unavoidable, if a well trained department is desired at the commencement of the program. Costs would be approximately \$16,000 calculated on a generous estimate as follows:

2 weeks for 35 men is 1/26 annual salary budget	\$8,900
2 weeks for 9 students at \$1.50/hour	1,080
2 weeks for 10 supervisors	2,500
Fire training consultant fees to University of Michigan (est.)	2,500
Training manuals, library, materials, films (est.)	<u>1,000</u>
	<u>\$15,980</u>

The supervisors should receive their initial fire training ahead of their subordinates in the training process. This would allow polishing of the training program for the bulk of department personnel who might have less incentive to accept gracefully miscalculations in design and programming of the training program. Then the supervisors would receive their advanced training while the patrolmen-firemen-students take basic training.

Sending of supervisors to a large fire department would have to await appropriate opportunities in scheduling and would be spread over an entire year or more.

CHAPTER V

FINANCIAL ASPECTS OF POLICE-FIRE UNIFICATION

The previous chapters have considered the nature of police-fire protection at Michigan State University and established the operational feasibility of combining the police and fire protection services of the university in the personnel of a single organization. Technical feasibility is only one aspect of a decision to actually effect the integration of the services; of equal or greater importance is the financial effect of the integrated scheme. The benefits from unification must be proportional to the cost.

In spite of statements made by apparently knowledgeable persons that police-fire unification is not a means for securing more economical police-fire protection,¹ cities and villages using the system testify to the contrary; for example, Oak Park, Michigan,² Sunnyvale, California,³ and

¹Leon W. Millie, et al., Report on the Amalgamated Police and Fire Departments in the City of Oak Park, A Suburb of Detroit, Michigan (Toronto: Ontario Fire Marshal's Office, January, 1957), p. 1.

²Glenford S. Leonard, Report of Second Year of Integrated Fire and Police Services (Oak Park, Michigan: report to the city council, October 25, 1956), p. 3.

³Perry Scott, Decade of Public Safety (Sunnyvale, California, March 31, 1961), p. 1.

Peoria, Illinois,⁴ report substantial annual savings achieved from their integrated police-fire operations.

The question is whether Michigan State University can achieve more economical police and fire protection from an organizational scheme which has produced savings for certain cities.

I. UNIVERSITY POLICE-FIRE EXPENSES

Table XXXVII presents the police and fire expenditures of the university for the fiscal years 1951-1952 through 1961-1962. During this eleven-year time period when the East Lansing campus enrollment increased 76.4% to 23,976 in Fall, 1961, the police and fire expenditures of the university increased 139.0%. Fire expenses increased 174.7% and police expenses increased 123.3%. In 1961-1962 the university spent more than \$284,000 for police and fire protection. Police and fire personnel (excluding the Director of Public Safety and the police clerical staff) accounted for 81.9% of the total; 12.2% was expended on supplies and services and 5.9% was expended for equipment purchases.

Through the eleven-year period, personnel costs averaged 84.3% of the total police and fire protection expenditures and the number of policemen and firemen paid for by the university totalled 40 in 1961-1962--double the

⁴Peoria Journal-Star, January 24, 1962, p. 1.

TABLE XXXVII

University Police and Fire Expenditures, 1951-1962
(all figures raised to nearest dollar)

	Fire Payments	Fire Apparatus	Police*	Total	Cumulative Per Cent Increase
1951-52	\$36,527		\$82,629	\$119,156	-0-
1952-53	40,925		102,037	142,962	20.0%
1953-54	43,584		117,173	160,757	34.9
1954-55	48,115		142,653	190,768	60.1
1955-56	53,315		149,901	203,216	70.5
1956-57	63,341	\$19,825	164,949	248,115	108.2
1957-58	72,160	10,550	187,048	269,758	126.4
1958-59	80,090	9,000	182,019	271,109	127.5
1959-60	77,978		203,313	281,291	136.1
1960-61	92,040		187,338	279,378	134.5
1961-62	100,332		184,508	284,840	139.0
	\$708,407	\$39,375	1,703,568	2,451,350	-

*Excludes clerical-staff and Director of Public
Safety.

number of personnel in 1951-1952.

In spite of the 123.3% increase in police expenses during this period, the ratio of police personnel per thousand students enrolled in Fall Term had declined from 1.1 officers per thousand students to 1.0 officers per thousand students enrolled--which amounted to a decrease of two officers in relation to the enrollment population of 1962.

Appendices VI and VII demonstrate the expenditure

histories of the police and fire departments for the fiscal years 1951-52 through 1961-62, and show the functional account detail for each year.

II. THE COST OF UNIFICATION

Because police-fire integration is primarily a process of better utilization of manpower through better use of manpower time rather than through mechanization or automation techniques, the primary cost to be evaluated is the salaries of police and fire personnel.

Immediate Personnel Costs

Three approaches to manpower utilization can be developed which represent typical objectives of public personnel administration: (1) secure greater output from existing personnel; (2) increase the output without any cost rise; and (3) reduce costs without reducing services. These will be referred to, respectively, as (1) the equal personnel approach (no reduction in personnel through unification; (2) the equal cost approach (just enough personnel reduction to assure no personnel expense increase); and (3) the equal service approach (reducing personnel until service output will be the same as that provided before integration).

Table XXXVIII below presents the personnel salary expense of the 1962-1963 separated police and fire departments calculated at the maximum salary for each authorized position to eliminate fluctuations due to personnel turnover.

TABLE XXXVIII

Comparison of the Personnel Positions and Cost of Three Possible Approaches to an Integrated Police-Fire Organization with the Traditional Separated Organization Existing in 1962-1963

Position Title	Traditional Separated Organization Approach		Integrated Police-Fire Organizations							
			Equal Personnel		Equal Cost		Equal Service			
	# Men	Salary* Expense	# Men	Salary** Expense	# Men	Salary** Expense	# Men	Salary** Expense	# Men	Salary** Expense
Captain	1	\$8,200	1	\$9,000	1	\$9,000	1	\$9,000	1	\$9,000
Lieutenant	0		1	7,900	1	7,900	1	7,900	1	7,900
Sergeant	3	19,800	3	21,600	3	21,600	3	21,600	3	21,600
Corporal	3	18,198	3	19,800	3	19,800	3	19,800	3	19,800
Patrolmen	14	82,208	20	124,000	16	99,200	15	93,000		
Investigative Sgt.	1	6,600	1	7,200	1	7,200	1	7,200	1	7,200
Investigators	2	11,744	3	18,600	3	18,600	3	18,600	3	18,600
Records Officer	1	5,872	1	6,200	1	6,200	1	6,200	1	6,200
Firemen***	15	88,465	6	34,800	6	34,800	6	34,800	6	34,800
Training Sgt.	0		1	7,200	1	7,200	1	7,200	1	7,200
Total Full-Time Men	40	\$241,087	40	\$256,300	36	\$231,500	35	\$225,300		
Student Firemen	0		0		9	7,200	9	7,200		
Total Cost		\$241,087		\$256,300		\$238,700		\$232,500		
\$ Change in Costs		-0-		+\$15,213		-\$2,387		-\$8,587		
% Change in Costs		-0-		+6.3%		-1.0%		-3.5%		

*At 1962-63 maximum salary for each position except Fire Dept.

**At proposed 10% increase for command and supervisory positions and 5% for all other positions except firemen.

***50% of E.L.F.D. expense in 1961-62; no salary increase for integration because of substantial work week reduction.

The table also shows the salary and position costs of the three different approaches to a unified organization.

Table XXXVIII demonstrates that police and fire protection conditions at the university combined with necessary supervision, training, administrative and investigative personnel requirements amount to a fixed base of 20 employees in the unified organization and, therefore, differences in integrated manpower costs can come only in the number of uniformed patrolmen and in the need or absence of need for using student firemen instead of full-time officers for late night hour fire response.

It can be seen in this table that the equal personnel approach provides enough patrolmen that student firemen are not needed. In all cases an additional investigator is provided, as is a uniformed lieutenant and an additional patrolman to ensure adequate numbers of men responding to a fire. The equal cost approach provides still an additional patrolman and the equal personnel approach provides another five additional patrolmen for public protection.

The public protection and service changes can be summarized in terms of the personnel groups involved in the unification process--the patrol force, the fire fighting force, the total number of public safety personnel and the total number of police personnel. These comparisons are shown in Table XXXIX below in terms of per cent change from the 1962-63 separated organizations shown in Table XXXVIII.

TABLE XXXIX

Personnel and Cost Changes Through Unification Shown by Per Cent of Change from 1962-1963 Separated Organization (data from Table XXXVIII)

	Equal Personnel Approach	Equal Cost Approach	Equal Service Approach
Uniformed Patrol Personnel	+35%	+15%	+10%
Personnel for fire fighting*	+29%	+20%	+16%
Total police and fire personnel	0%	-10%	-12%
Police personnel	+36%	+20%	+16%
Personnel salary cost (full-time)	+6%	-1%	-3%

*Excludes part-time student firemen.

It is important to note as a characteristic of unification at Michigan State University that the "equal service approach" actually must provide a certain increase in service in order to assure a reasonably reliable manpower response to fire alarms. This is occasioned by the frequency and length of time involved when patrol officers are unavailable while answering citizen calls for service and assistance. Unification under university conditions of service obligations added to the normal police workload requires a betterment of police protection in order to ensure equal fire manpower response with the separated departments.

The financial implications of police-fire unification are effectively illustrated by studying the personnel cost of dividing a unified organization into the traditional separated departments without reducing the number of men

available for public service and protection. Applying this method of analysis to the two extreme forms of unification considered in this chapter--the "equal personnel approach" and the "equal service approach"--demonstrates the dollar value of utilization of manpower through unification. Consideration of the "equal cost approach" is not necessary because it is the "middle of the road" method between the other two systems.

"Equal Personnel" Unification Plan. We will assume that the university already has an integrated police-fire department and for some reason is considering separating the 40-man department into two organizations providing the same number of policemen and firemen. Table XL below shows the cost of the additional personnel which would be needed for the two separate department system.

Table XL demonstrates that the university gains through integration the services of seven additional men in the patrol force at the cost of 2.6 patrolmen's salaries; and gains nine additional fire fighters for this same cost of 2.6 patrolmen. In other words, if the university decided to gain this additional manpower protection it would cost \$15,213 to achieve through the unification process and \$92,674 to expand the existing separated organizations.

"Equal Service" Unification Plan. The "equal service" approach to unification can similarly be contrasted with the personnel cost of breaking up the unified organization

TABLE XL

Cost of Achieving Through Separate Departments the Service Potential Obtainable Through the Use of Existing 1962-1963 Personnel Paid from University Funds in the "Equal Personnel" Unified Police-Fire Organization Plan

	Uniformed Patrol Force	Fire Fighting Force*	Total Police-Fire Personnel
"Equal personnel" integration	27	40	40
Separated system (1962-63)	<u>20</u>	<u>31</u>	<u>58**</u>
Men added to separated depts. to equal integrated service	7	9	16
Fireman-Patrolman salary cost of separate manpower increase	\$41,104	\$51,570	\$92,674
Subtract salary costs of "equal personnel" inte- gration plan			<u>\$15,213</u> <u>\$77,461</u>

*Excludes student firemen. Shows entire 31-man fire department since university's payment of fifteen men makes 31 available for large fire.

**Includes 27 men below Director in Public Safety Police Service and entire 31-man East Lansing Fire Department.

into two functional departments providing the same level of manpower service as was provided through the unified plan. The "equal service" plan involves 35 personnel below the rank of Director. Dividing the organization into two departments would require additional personnel as shown in Table XLI below.

Table XLI demonstrates the dollar value of the personnel time which the unified organization makes available for public protection--an efficiency savings of \$34,664 each year for salaries alone, and yet the service of an additional six men are available to accompany this cost reduction.

TABLE XLI

Cost of Dividing Unified 35-Man Department into
Two Separate Departments with Same Personnel Service Level

	Uniformed Patrol Force	Fire Fighting Force*	Total Police- Fire Personnel and Salary Cost
"Equal Service" unified plan	22	35	35
Separate departments (1962-63)	<u>20</u>	<u>31</u>	<u>58***</u>
Men added to separate depts. to equal unified service	2	4	6
Salary cost of needed men**	\$11,744	\$22,920	\$34,664

*Excludes student firemen. Shows entire 31-man city fire department since university 50% payment makes 31 available for fires.

**Salaries at 1962-63 maximum for each position; no ranks above patrolman or fireman.

***Includes 27 men below director in public safety police service and entire 31-man East Lansing Fire Department.

Other Personnel Cost Benefits. It is apparent that, while police-fire integration is immediately attractive to the university, either as a means of materially bettering its protection at little cost or as a means of reducing costs, the concept really comes into its own when the work week of the firemen must be reduced.

The present 70-hour work week provides a theoretical fire alarm response manpower to the university of 6.25 men which is actually less because of the statutory requirement for a "Kelly Day" every twelve days for municipal firemen. The 56-hour work week would require 20.8 firemen to provide the same theoretical response--an increase of

6 men (40%), and a salary expense increase of \$34,380 annually at present rates. The proposed scheme for integrating to preserve the existing level of service using 35 men instead of 40 provides the 56-hour work week to the six fire apparatus drivers who would be the only fire fighting specialists on the payroll working more than a scheduled 40-hour week.

An additional economy is derived from the proposed unification plan through its ability to provide a certain amount of labor from the six apparatus drivers for performance of many tasks which the department of public safety now finds impossible to accomplish adequately with available safety services manpower--tasks such as building inspection, fire extinguisher maintenance, parking meter repairs, assistance to the desk officer and others. It would seem reasonable to assume that the six men could provide four hours of such work every day of the year, equalling the output of two additional full-time employees on the safety services payroll, and costing \$11,730 at 1962-63 salary levels.

Summary. Thus the total reduction in actual costs and the savings received by avoiding hiring of additional personnel would approximate the following, in terms of the 1962-63 manpower.

<u>Description</u>	<u>Reduced Annual Cost</u>	<u>Men Saved</u>
Reduced salary expense after integration	\$8,587	5
Two-man work output from firemen	11,730	2
Reducing fireman work week to 56 hours for 6 men	<u>11,460</u> \$31,777	<u>2</u> 9

There are other hidden costs connected with full-time employees which would be saved by the reduction in total number of employees, and by making it unnecessary to hire additional employees to provide the service level, which, as shown above, amounts to a reduction of 9 employees on a full-time payroll. What these hidden costs including social security, administrative expenses and others might amount to in value is not known but probably represent an additional worthwhile saving.

Future Personnel Cost Benefits

If the proposed plan for unified operation is adopted, future manpower increases should average approximately 3 men each year instead of the 4 men estimated for separated department organization. These three men are estimated on the very low ratio (compared to other large universities) of 1.16 police per thousand enrollment for the assumed maximum of 35,000 students.

The separated system would require an average of one additional fireman from university funds each year to

achieve the 56-hour work week which inevitably will be realized. It is not likely that the 1.16 police/population ratio would be adequate in future years for a major university in a highly urbanized area, but the ratio does represent a slight betterment over the existing manning of the university police and is adequate for comparing future manpower costs of the two systems of police-fire organization.

The unified plan, if adopted in 1963-64, will provide means for reducing the total police-fire manpower needed by 1968-69 for the assumed enrollment of 35,000 from 60 men under the separated departments to 50 men under the integrated organization. This will put the per cent increase in police-fire manpower below the per cent increase in student enrollment for the first time in seventeen years.

Assuming a straight-line addition of personnel, which is not unreasonable in view of past experience in both the police and fire departments, the savings in salaries alone from this integrated organization would mount very rapidly on the hiring progression assumed above. The salary effect of this progression is shown in Table XLII.

Thus in a six-year period the savings from firemen not needed would be in excess of \$237,000 without any consideration of the value of additional output received from employees under the integrated system. If it is assumed that the six apparatus operators could eliminate the need

TABLE XLII

Accumulation of Savings from Reduced Salary Expenses to be Achieved from Integration on the Proposed Plan and Assuming Police-Fire Manpower Increases Based on Past Experience and Achievement of a 56-hour Work Week for Firemen

Fiscal Year	Men on Separated Systems	Men on Unified System	Difference	1962-63 Fireman Salary	Annual Saving
1963-64*	40	35	5	--	\$8,587
1964-65	44	38	6	5,730	34,380
1965-66	48	41	7	5,730	40,110
1966-67	52	44	8	5,730	45,840
1967-68	56	47	9	5,730	51,570
1968-69	60	50	10	5,730	57,300
					<u>\$237,787</u>

*Police-fire departments unified.

which exists in 1962-63 for an additional equipment service-man and an additional fire inspector, the savings on these two positions alone would bring the accumulated savings at the end of the six-year period to more than \$300,000. Further, it is obvious that the salary figures used in this estimate are conservative since both salaries and fringe benefits tend to increase with each passing year.

Non-personnel Costs

Heretofore, the non-personnel costs of operating an integrated department have not been considered. The university share of these fire department expenses amounted to a little more than \$8,000 in 1961-62 and the figure has varied rather widely over the years, making any sort of accurate estimation of these costs impossible.

It would seem that for the first year or two of

unification, maintenance of fire equipment and clothing would be a small problem since most of the clothing and small items would be new, as would one pumper. The other pumper, the International, has a high maintenance record, according to fire department personnel. In view of these conditions, it still appears reasonable to assume that the non-personnel expenses will not increase for a year or two except in the event of fire damage--a normal risk of any fire fighting organization.

Training by the university department will necessarily be active, and there will be charges for rental of training films and their projection equipment. A regular and vigorous training program will increase wear and tear on equipment and ultimately will result in increased costs, also. However, estimation of this increase is not practicable and will simply have to await developing experience. This is no difficulty, since it seems quite unlikely that this cost could ever amount to enough to have any significant offsetting effect against the annual savings realized through reduced personnel costs achieved by the unified organization.

Cost of Implementing Unification

The cost of implementing unification can be spread over a period of two or three years in all likelihood, depending upon the terms arrived at for division of existing

fire apparatus, the schedule for purchase of new apparatus and the financing of the necessary new building. Excluding the cost of a new building (which the university must provide in any case for the police force), the cost of converting to the unified organization will approximate \$77,000, as shown in Table XLIII. This figure includes 10% for underestimation of costs in this planning process.

This expense would be repaid through savings from the proposed 35-man unified organization in approximately nine years if the only savings counted were the initial \$8,500 reduction in salary expenses shown in Table XXXVIII. If the savings were considered to include the additional productive time secured from the six apparatus operators for fire prevention inspection and safety equipment maintenance described earlier, the conversion expense of \$77,000 would be amortized in under four years. And, of course, at the time the work week of the East Lansing fire department is reduced to 56 hours, the cost of unifying will be written off in three years by this one factor, alone. It is apparent that the cost of implementing a unified police-fire department is insignificant in terms of the operating economies to be achieved over the years, and could conservatively be regarded as being offset by savings within five years after unification.

Following is a schedule of the conversion expenses and the year in which they might be incurred. This schedule

TABLE XLIII

Schedule of Non-recurring Costs of Unification

	Payment in Year of the Decision to Integrate	Payment in Year of Unification	Total
<u>Personnel Expense</u>			
Basic training-- supervisors	\$2,500		\$2,500
Basic training-- all others		\$7,500	7,500
Advanced training-- supervisors		2,500	<u>2,500</u>
			12,500
<u>Supplies and Services</u>			
Training library, supplies, services	700	300	1,000
Fire fighting and work clothing	3,500		3,500
Fire training con- sultant fee	500	2,000	<u>2,500</u>
			7,000
<u>Equipment and Apparatus</u>			
Inhalator-resusci- tators	900		900
Tone-activated miniature radios	2,600		2,600
Radio base station & associated equip.	3,650		3,650
Two additional cars	5,000		5,000
Three car radios	1,800		1,800
Equipment for appa- ratus betterment		5,000	5,000
New fully equipped pumper	<u>16,000</u>	<u>16,000</u>	<u>32,000</u>
Subtotal	44,195	33,300	70,450
<u>Allowance for error</u> (10%)			<u>7,045</u>
			77,495
<u>New Building</u> (maximum estimate)	<u>200,000</u>	<u>300,000</u>	<u>500,000</u>
	\$244,195	\$333,300	\$577,495

is too generalized to be used as a guide for the actual process itself, but is sufficient to indicate the nature of the conversion process.

It is assumed that the decision to integrate would be made during a school year and probably during Fall term to allow adequate time for inclusion in the university budget. This would allow Winter and Spring term for recruitment of personnel, purchase of equipment, cars, etc., and arrangement for the training program to be carried out in Summer under a new budget. Planning for the new building would take place and construction begin and extend through this first year with some payments under that fiscal year and final payments made in the following fiscal year. The pumper could also be scheduled for delivery in the second year if this is necessary, although delivery in the first year before beginning the training program would have definite advantages, since it would be unnecessary to borrow a pumper from the East Lansing fire department or take out of service for extended periods the university pumper in order to accomplish the training program.

It should be noted here that there are two major variables which could render this entire schedule worthless for effective use as an estimate of annual costs. The first of these is the decision which is made concerning the East Lansing firemen. If the decision is to incorporate them into the integrated organization as apparatus operators,

the above schedule will hold true. If the decision should be not to incorporate them into the integrated organization, then it will be necessary to employ the new personnel and train them prior to the date of activating the unified organization, and the university would probably also have to contribute to the salaries of the firemen necessary to provide fire protection during this training process.

This would be a difficult cost to estimate since it is dependent entirely on how many East Lansing firemen might be retained as apparatus drivers (a necessity) and as patrolmen. The maximum cost of such manpower duplication would be the salaries of six apparatus drivers and four patrolmen for whatever the overlapping time period would be between beginning of training and commencement of integrated operation. The costs here are so high that it would be worth the risk to avoid the overlapping of personnel and institute an intensive training program even with inexperienced men, probably using them on the fireman's work week schedule until the primary training period was past. Therefore, this possibility of a substantial increase in conversion costs can be disregarded if the risk is thought justifiable.

The second major variable affecting these costs is the possibility that the present food stores building could be adapted to public safety department use. If the decision were to invest the heavy load-bearing construction

of this building in the light floor-load use of the public safety services, the cost of remodelling would be substantially less than the cost of an entirely new building, particularly since much of the building is reasonably suitable for police-fire use and the presence of a freight elevator would allow placement of shop and sign and storage spaces on any floor. The effect of this variable is not predictable without assistance of an architect for estimating construction and remodelling costs.

III. SUMMARY

The cost information presented in this chapter demonstrates that police-fire unification offers significant financial advantages to the university. Unification would eliminate the need to hire additional fire fighters in a separate department and halt the eleven-year trend showing that police and fire costs of the university increased at double the rate of the enrollment increase.

The unification plan proposed to maintain a level of service equal with that of the 1962-63 separated departments would reduce the total number of police and fire personnel by five, add four men to the police service without cost and provide substantial salary increases to all police personnel. The plan would also provide the services of two safety servicemen (valued at \$11,730) without additional cost and would reduce the work week of the six fire

apparatus operators immediately without the \$11,460 cost per year such a work week reduction would require for separated departments. The final personnel budget of this plan for unification would be \$8,587 less than the 1962-63 budget for separate departments.

The unification plan proposing to retain all existing personnel and secure maximum service increases through unification would increase the personnel budget cost \$15,213 over that of 1962-63. This increased cost would provide nine additional police personnel (valued at \$52,848), service equivalent to two additional safety servicemen valued at \$11,730, reduce the six fire apparatus operators' work week at a cost value of \$11,460, and provide significant police salary increases. This unification plan would increase the salary budget 6% while increasing the number of police 36% and producing personnel services costing \$76,038 to secure from separated departments for only \$15,213 through a unified police-fire organization.

CHAPTER VI

CONCLUSIONS AND RECOMMENDATIONS

I. CONCLUSIONS

With enrollment rising very sharply and financial support for the university failing to keep pace, Michigan State University is in the same financial squeeze in its operations as most of our cities. Many cities, faced with the demand for increasing services and for entirely new services, have considered combining the duties of policemen and firemen in the same body of men as a means for securing reduction of firemen's work weeks, expanding police protection, reducing public safety expenditures, and providing higher salaries to attract a better caliber of officers.

This study was intended to determine whether police-fire unification could be successfully applied to the police and fire protection characteristics of a large university, using Michigan State University as an example. A further objective was to determine what the financial effects of integration would be for the university if it were found to be an operational feasibility.

General

An extensive consideration of the police and fire

protection characteristics of the university in Chapter III revealed no basic conditions which would prevent successful integration of the two functions. The manpower drain of public events has already been dealt with by the Department of Public Safety through an overtime pay program.

Traffic direction and control during traffic rush hours could be an obstacle to unification. However, study showed no instance of a fire alarm during the actual traffic peak, either morning or night, and use of students to direct traffic removes the matter as a potential obstacle to integration.

Major public events, such as football games, which require all police manpower to be on duty, would be covered by having student firemen and full-time apparatus drivers at the station provide the necessary manning for fire alarm response.

Fires and crimes are shown to be relatively minor for the great bulk of such occurrences. Simultaneous occurrences of urgent police and fire matters present no problem which could not adequately be dealt with by East Lansing fire and police assistance.

Transportation of injured and ill persons off the campus to hospitals by stretcher, currently a university practice, is not compatible with the minimum 35-man public safety operation suggested, and use of commercial transportation or employment of more men would be necessary to

continue this practice if the university hospital cannot alter its policy on acceptance of non-university people.

It was demonstrated that in the eleven-year period beginning 1954-55 the number of police hours spent on patrol has decreased 23.77% and is now spread over an area of primary protection interest which is 230% larger. This decrease has occurred even though police manpower has increased 41% in these years. The police workload has increased until it is so high that the patrol force spends only 25.5% of its time on patrol--exactly the reverse of the 1954-55 figures.

This excessive workload, and the increasing rise in the workload in the immediate years ahead, suggests that unification is not feasible. However, the increased manpower which unification will make available for police duties and use of an elaborate miniaturized radio communication system should make the uniformed patrolmen sufficiently available, even though "out of service," to make unification feasible. Use of modern communications equipment can limit the patrol time problem to its effect on preventive police work and reduce significant interference with fire alarm response.

The vital importance of training to successful unified police-fire operations was repeatedly demonstrated throughout the study of police and fire conditions at the university. The implications of the excessive turnover

of police personnel as a harmful influence upon effective training are obvious, and unification should not be undertaken unless measures are taken to limit the turnover by encouraging a larger group of career employees among the police.

Chapter IV applied unification theory to the police and fire protection needs of the university and showed the need for a basic core of 20 command, supervisory, training, investigative, records and fire apparatus driver personnel essential to the effective functioning of a unified organization. The number of patrolmen to be added to this core of command and specialist personnel was determined by analyzing the need for fire and police incident response manpower.

A minimum fire response manpower of six men was determined to be necessary with a seventh man required at all times for desk and communications duty. This seven-man strength was determined as the basic platoon strength below which the on-duty manpower force must not be allowed to fall. It was then determined that use of the well known "sleeper" system using student firemen as the "sleepers" in the station at night and a lesser number of students on the weekend day shift would allow reduction of the number of patrol force personnel required for assured fire response from 21 to 19.

The proposed 35-man police-fire force was designed

to operate within the framework of the existing university Department of Public Safety. It is emphasized that this is a minimum force which would provide adequate protection and service under the workload conditions of the fiscal year 1962-63, and would have to be augmented each year as the university enrollment expands and the police workload increases. This 35-man organization would provide service and protection equal to that received from the existing police service and would provide fire protection superior to that now existing.

The finances of the unification process were considered in Chapter V and it was shown that, due to police protection manpower needs, there was a difference of only one patrolman position between a minimum manpower organization sufficient to retain the level of police and fire protection, and an integrated organization which would provide increased service without raising the level of university police and fire salary expenditures.

Analysis of the financial effects of unification without reduction in number of personnel revealed that the university could increase its patrol force 35%, increase its fire force 29%, with only a 6% increase in annual operating expense. This is equivalent to hiring seven additional patrolmen at the 1962-63 cost of 2.6 patrolmen while also bettering the fire protection, providing a more flexible organization and providing other benefits previously

discussed in detail.

Chapter V also presented the fact that adoption by the university of the proposed "equal service" (35-man) approach to police-fire unification on its campus would reduce the number of full-time employees by five, reduce the cash expenditure for police and fire protection by \$8,587 from the assumed 1962-63 salary expenditure at maximum rates for the existing 40 men, and still would increase the patrol force by 10% and the fire force by 16%. Further, it would increase the number of men responding to fire alarms by at least one man and at night time the fire alarm response manpower could be doubled. The increase in full-time manpower for police and fire protection achieved through this "equal service" plan would cost more than \$43,000 to achieve by hiring policemen and firemen under the separated department system.

A similar benefit is available through the plan for integrating without reduction in the number of existing full-time personnel. This method would cost the university an additional \$15,200 each year and would provide the services of police and fire manpower which would cost \$69,750 to employ under the separated system; it would eliminate the accumulated deficit in police manpower.

Benefit Summarized

The benefits of the proposed "equal service"

unification plan for Michigan State University can be summarized as follows:

1. It will increase police protection by one investigator and two patrolmen.

2. It will increase fire protection by providing never less than six men available for response to fire alarms and with every likelihood that seven or eight would be the "normal" response, compared with four to six now responding.

3. Fire apparatus operators can provide work output while on standby in the station, which, if it only amounts to four hours each day from each driver, is equivalent to having two additional full-time employees on the payroll.

4. The apparatus drivers could provide much needed fire prevention inspection assistance to the fire safety officer who cannot now cover university buildings as often as he should. Since fire prevention is the most certain and economical approach to fire protection, this is a major benefit.

5. Integration will put fire fighting in the hands of university employees who are oriented to protection of the university and who are familiar with university property. This will end a situation so aptly described in the Fire Protection Handbook: "A public fire department is often designed for the protection of the surrounding community rather than to provide fire department protection

for a large institution or industrial plant."¹

6. By means of the above, integration offers the university the opportunity to improve its overall public safety protection in many different areas by securing a great deal more service from its investment in salaries and, as the Missouri Public Expenditure Survey concluded, " . . . is an avenue to continuing economy,"² for the university as it faces a period of extraordinary expansion of enrollment and an unprecedented squeeze on its financial ability to serve this increasing enrollment.

Guidelines for the Unification Process

The entire basis for integration is that it allows fullest utilization of manpower. Fire fighting and police protection are primarily effective to the extent that adequately trained and effectively used manpower is provided in adequate quantity. It is essential that as unification proceeds through the years, the university administrators appreciate and be mindful of the fact that the operation is functioning on a minimum manpower basis and that if the manpower provided does not keep up with workload demands, the manpower upon which effective fire fighting is absolutely dependent might not be available when its major test occurs.

¹Tryon, op. cit., section 11, p. 20.

²Combined Police and Fire Services for Medium-sized and Small Cities (Jefferson City, Missouri: Missouri Public Expenditure Survey, February, 1960), p. 7.

Failure to provide items of equipment which, it may appear, will have limited or infrequent use can also damage the scheme for securing maximum efficiency, since this equipment is an indispensable factor in effective use of limited fire fighting manpower.

Training must not be allowed to decline in frequency or in quality. Because of the absence of serious fires, training is the only means by which the university can be assured that its minimum manpower, unified operation will perform effectively and thus justify its existence when the serious fire emergency inevitably occurs.

A principal merit of the unification concept is that it offers the opportunity to pay better salaries to fewer men for vastly better performance. Integrating without providing a salary which is significantly higher than that paid in bordering cities for doing only one of the public safety jobs would inevitably lead to discontented employees and unreliable performance by the organization.

II. RECOMMENDATIONS

A number of conclusions formed while conducting this study have led to formulation of several recommendations concerned not only with the question of whether or not to unify the police and fire protection agencies, but also with the place of the public safety function in the university.

Additional Research

Effective utilization of police and fire manpower can result not only from unification of the police and fire agencies, but also by receiving service from larger police and fire agencies. This consideration raises the question whether the advantage of university control over fire and police operations by having its own agencies might not also be achievable in some manner through a close contractual relationship with the city of East Lansing after merging the university personnel with the East Lansing agencies, thus making the economies of organizational scale available through elimination of duplicating functions. It seems likely that such a study would demonstrate the desirability that such city-university police and fire agencies should also be a single unified police-fire department. If appropriate arrangements could be made to ensure that such an agency continued to function with university interests constantly in mind (as the East Lansing fire department-university relationship has not so functioned), the university might find itself relieved of many administrative and public relations problems which are inevitable by-products of the law enforcement process.

The Existing Fire Protection Contract

This contract should be reexamined by the university and the city and rewritten to provide some standards

of performance which the city is to meet and the university could measure. The standards of the grading schedule of the National Board of Fire Underwriters could serve as the basis for such a performance contract and could be appropriately modified in specific areas to provide either greater or lesser standards of performance as conditions require. Such a performance contract should require at least the following from the fire department:

1. Inspection of university properties by the fire fighting personnel as a daily duty unless engaged in training activities.
2. Establish a specific fire training program with a full-time training specialist in the fire department with adequate assistance from the university.
3. Acquisition of appliances and minor equipment for combating major fires and securing entry into heavily constructed building spaces involved in major fire conditions.
4. Ladder equipment, capable of reaching the roof of the building involved, or of reaching the length of the aerial ladder, be dispatched to any alarm, and require adequate accompanying manpower to raise the ladder if manual ladders are intended to be used.
5. Pre-fire planning for all major university

structures or classes of major structures, and for each of the farm structures or complexes, including emphasis on fire department provision of adequate water supply and pre-planned mutual aid on an automatic response basis for the farm complexes.

6. Specification of the first alarm minimum manpower under day and night conditions at major structures and types of structures; this should be not less than six men.
7. Provision for dispatch of apparatus from the nearest fire station to university buildings or alarm locations.

The cost of the fire department provided under such a performance contract should then be measured against a university-operated unified police-fire agency. Such an agreement should not overlook the benefits in cost reduction which might accrue from use of student "sleepers" by the East Lansing fire department.

The Decision to Integrate

Unification of the police and fire functions in a university-operated police-fire agency is operationally feasible if a sufficiently stable personnel force can be secured and if adequate numbers of personnel are provided. Such an organization will also provide significant financial

benefits to the university after the initial expenses have been amortized from the system's economical use of manpower.

If the university is not convinced that it is operating a community producing many more police and fire problems than are dealt with by the police and fire forces of comparably populated cities and that adequate personnel is needed to deal with the problems, then the university should not unify its police and fire functions. An integrated organization which has an excessive personnel turnover or is undermanned will provide effective police protection, but will prove to be a dangerously unreliable fire fighting force as pressures to meet service and police protection demands inevitably destroy the fire prevention and fire training functions without which effective fire protection cannot be realized from a small fire department.

If the decision by the university, after study of other alternatives described above, is to operate its own unified police-fire organization, under the conditions described above, it should enter the program by regarding unification as a means for securing immediate large-scale improvement in its police and fire protection at relatively minor cost and concern itself with the economies of integration only in future years after the perfected and adequate organization is properly functioning.

Therefore, it is recommended that the unified organization have the same number of personnel now employed

by university funds, thus securing for the university a very substantial betterment of service and a more reliable level of protection during the conversion period.

APPENDIX I

Fire Protection Agreement

THIS AGREEMENT, Made and entered into this 20th day of September, 1946, by and between the City of East Lansing, a municipal corporation, of Ingham County, Michigan, as party of the first part, and the State Board of Agriculture, a Michigan Public Corporation, as party of the second part;

WHEREAS, both parties hereto desire to establish and maintain adequate fire protection for the properties of the City of East Lansing and Michigan State College; and

WHEREAS, both parties hereto feel that this can best be accomplished by a cooperative arrangement under the supervision of the City of East Lansing on the terms and conditions hereinafter set forth.

NOW, THEREFORE, for and in consideration of the mutual promises and covenants hereinafter set forth, it is hereby agreed by and between the parties hereto as follows:

1. The said party of the first part hereby agrees to:

(a) To provide and at all times to maintain its present fire station and to provide its present fire fighting equipment.

(b) To pay one-half the cost of all fire fighting equipment and other necessary supplies hereinafter purchased for the combined fire department of the parties hereto.

(c) To pay one-half the cost of maintenance of the equipment, salaries and maintenance of personnel of the combined fire department.

2. The said party of the second part hereby agrees to:

(a) To immediately provide and equip a temporary building to house such fire fighting equipment and personnel deemed necessary and adequate for temporary fire protection. That the cost thereof, as well as the maintenance of same, shall be paid for by second party.

(b) To provide its present fire pumping equipment and pickup truck.

(c) To provide, as soon as possible, fully equipped and at all times to maintain a permanent building to house such fire fighting equipment and personnel as shall be required on the campus of second party.

(d) To pay one-half the cost of all fire fighting equipment and other necessary supplies hereafter purchased for the combined fire department of the parties hereto.

(e) To pay one-half the cost of maintenance of the equipment, salaries and maintenance of personnel of the combined fire department.

3. It is agreed by and between the parties hereto

that there shall be but one fire department, operated and supervised by the said first party. All responsibility for the purchase of fire fighting equipment and other necessary supplies, the maintenance of all equipment, the employing and discharging of all personnel shall be fully taken care of by first party.

4. It is further agreed that this combined fire department shall at all times be maintained at such a standard as to provide adequate and ample fire fighting units for both parties hereto.

5. It is further agreed that the equipment and personnel of the combined fire department housed in the City of East Lansing and on the campus may be used interchangeably under the direction and orders of the Chief of the fire department of the City of East Lansing.

6. It is further agreed that said first party shall cause to be prepared and delivered to second party an itemized statement of the cost of the operation of the combined fire departments at the end of each fiscal year, ending July 1st. Said second party agrees to promptly pay one-half of such cost.

7. It is further agreed that in the event of dissatisfaction on the part of either party hereto, this agreement may be cancelled and set aside upon three months notice in writing to the opposite party. In such event an appraisal shall be made of all fire fighting equipment purchased

subsequent hereto and settlement made between the parties therefor.

IN WITNESS WHEREOF, the parties have hereunto set their hands and seals, each acting by their duly authorized officers in pursuance of resolutions approving the execution of this contract.

In the Presence of: CITY OF EAST LANSING

Jennie Neuman By Carl G. Card,
 Mayor

Margaret Guilkey By Harry W. Lott, Clerk

STATE BOARD OF AGRICULTURE

Ruth Jameyson By J. A. Hannah

Marie Mercier By Karl H. McDonel, Secretary

Supplemental Agreement - Fire Protection

THIS SUPPLEMENTAL AGREEMENT, made and entered into this 6th day of February, A. D. 1950, by and between the CITY OF EAST LANSING, a municipal corporation, situate in the county of Ingham, state of Michigan, hereinafter designated party of the first part, and the STATE BOARD OF AGRICULTURE, a Michigan public corporation, hereinafter designated party of the second part.

W I T N E S S E T H

WHEREAS, the parties hereto entered into a written agreement bearing date of September 20, A. D. 1946, providing for the establishment and maintenance of a joint fire department for said city of East Lansing and for Michigan State College, and

WHEREAS, said agreement provided among other things that each of the parties thereto would pay one-half of the salary of the personnel of such combined fire department, and

WHEREAS, included among such personnel at the present time is the fire inspector of the city of East Lansing whose salary has to the date hereof been paid equally by said parties as therein provided, and

WHEREAS, the said State Board of Agriculture proposes to employ a fire inspector, as an employee of the

said State Board of Agriculture and not of the city of East Lansing, whose time will be exclusively devoted to performance of the duties incident to his employment by the State Board of Agriculture, including the performance of the duties as fire inspector upon all properties within the jurisdiction of said board, and

WHEREAS, party of the second part is, therefore, desirous of amending and modifying said prior contract so as to be relieved of its obligation to pay any portion of the salary of the present fire inspector of the city of East Lansing or his successors, if any,

Now, therefore, in consideration of the mutual promises and undertakings of the parties hereto as herein-after set forth, IT IS HEREBY MUTUALLY AGREED By and between the parties hereto as follows:

1. Said contract, dated September 20, A. D. 1946, between the parties hereto, is hereby modified only insofar as the same is hereinafter specifically set forth, but in all other respects shall remain unaffected hereby and, as such, is hereby ratified.

2. Party of the second part shall, commencing as of April 1, A. D. 1950, be relieved from payment of any part of the salary of the present fire inspector of the city of East Lansing or his successors, if any, and such salary shall not be included in the salaries of the personnel of the combined fire department of the parties hereto

which, under said agreement, are to be borne equally by the parties hereto.

3. Commencing as of April 1, A. D. 1950, the city of East Lansing and its fire department shall be relieved of all further responsibility in regard to making of any fire inspection, whether routine or those incident to an actual fire upon any premises under the jurisdiction of the State Board of Agriculture, but shall have the right to make any such investigation or inspection which, in the judgment of the chief of the fire department of party of the first part, may be necessary or advisable.

4. Any person employed or designated by party of the second part as a fire inspector or to perform such duties shall be an employee of party of the second part and not, for any purpose, an employee of party of the first part.

5. Any such person who may from time to time perform duties of fire inspector for party of the second part shall, nevertheless, cooperate with the fire department of party of the first part, filing with the chief of the fire department of party of the first part, promptly as made, all reports of fire inspection of fires upon said properties within the jurisdiction of said party of the second part, and shall also promptly notify said chief of the fire department of party of the first part and furnish him with reports of inspection of buildings regarding fire

conditions and fire hazards made by the fire inspector of said party of the second part, and shall further cooperate with party of the first part by furnishing, upon request of said chief of the fire department of party of the first part, all available information relating to such conditions and complying with all other requests made by said chief of the fire department in regard thereto.

IN WITNESS WHEREOF, the parties have hereunto set their hands and seals, each acting by their duly authorized officers in pursuance of resolutions approving the execution of this Agreement.

In the Presence of:

Harold F. Peetz

Max R. Strother

CITY OF EAST LANSING

By Burr O. Twichell, Its Mayor

And Merwyn S. Skamser, Its Clerk

STATE BOARD OF AGRICULTURE

Ruth Jameyson

Marie Mercier

By J. A. Hannah, Its President

And Karl H. McDonel, Its Secretary

APPENDIX II

Michigan State University Fire Alarm Incidence, by Year and Time, 1955-1962

Hour Begin- ning	1955	1956	1957	1958	1959	1960	1961	1962	Total	%
12 M	4	2	5	9	5	5	6	2	38	3.169
1 A	3	2	5	2	1	2	3	1	19	1.585
2	-	-	5	2	2	-	2	4	15	1.251
3	2	2	-	-	4	-	3	-	11	.917
4	2	-	-	-	-	4	1	-	7	.584
5	-	2	-	-	2	3	-	-	7	.584
6	1	-	2	1	2	1	2	1	10	.834
7	2	2	2	1	3	2	5	2	19	1.585
8	4	4	4	6	5	5	4	5	37	3.086
9	11	6	7	9	6	4	13	6	62	5.171
10	10	9	7	13	5	7	8	14	73	6.088
11	5	5	10	11	8	9	8	6	62	5.171
12 N	5	9	8	12	3	6	8	9	60	5.004
1	8	6	7	4	10	12	12	9	68	5.671
2	9	6	12	5	8	9	10	10	69	5.748
3	4	4	9	8	3	8	7	12	55	4.987
4	7	12	10	7	9	9	7	11	72	6.005
5	5	12	6	16	9	7	8	10	73	6.088
6	14	11	13	11	8	10	12	14	93	7.756
7	8	12	11	7	7	8	8	13	74	6.172
8	5	4	14	10	18	11	9	10	81	6.756
9	4	11	5	17	2	11	9	12	71	5.922
10	8	8	10	13	8	9	6	7	69	5.755
11	7	7	7	7	11	4	5	6	54	4.504
	128	136	159	171	139	146	156	164	1,199	99.993

APPENDIX III

Michigan State University Fire Alarm Incidence, by Day, Month and Year, 1955-1962

Month	1955	1956	1957	1958	1959	1960	1961	1962	Total	%
Jan.	12	10	11	13	22	8	24	11	111	9.258
Feb.	12	13	6	15	9	12	16	8	91	7.589
Mar.	9	16	15	17	10	11	10	21	109	9.091
Apr.	14	16	20	21	23	14	10	9	127	10.592
May	11	8	24	31	9	11	15	20	129	10.759
Jun.	11	10	18	17	12	10	16	15	109	9.091
Jul.	10	2	4	3	5	9	12	12	57	4.754
Aug.	10	2	10	8	6	6	10	11	63	5.254
Sep.	6	8	6	10	7	12	8	10	67	5.588
Oct.	11	16	16	12	15	25	17	18	130	10.842
Nov.	7	23	10	14	9	14	6	17	100	8.340
Dec.	15	12	19	10	12	14	12	12	106	8.841
	128	136	159	171	139	146	156	164	1,199	99.999
Sun.	9	14	10	22	14	13	14	12	108	9.007
Mon.	19	26	26	31	22	28	28	27	207	17.264
Tue.	21	15	22	28	26	24	23	18	177	14.762
Wed.	24	19	31	24	19	21	24	33	195	16.263
Thu.	20	22	21	22	27	21	19	24	176	14.679
Fri.	17	27	17	21	19	18	25	26	170	14.178
Sat.	18	13	32	23	12	21	23	24	166	13.845
	128	136	159	171	139	146	156	164	1,199	99.998

APPENDIX IV

Michigan State University Inhalator Runs, by Time and Year, 1955-1962

Hour Begin- ning	1955	1956	1957	1958	1959	1960	1961	1962	Total	%
12 M	1	1					2	6	10	4.03
1 A		1				1		4	6	2.42
2					1			1	2	.81
3			1						1	.40
4						1		1	2	.81
5		1						1	2	.81
6		1				1			2	.81
7			2			2	1	1	6	2.42
8	1	2		2		1	1		7	2.82
9	2			2		1	3	2	10	4.03
10	2	1	1	1	1	2	3	2	13	5.24
11	2	1	1		4	1	2	3	14	5.65
12 N	4	1	1	3	3		1	6	19	7.66
1 P	7	3	3	1	1		3	3	21	8.47
2	2	1	2	6	4	5	3	5	28	11.29
3		3	1	3	1	3		1	12	4.84
4	2	2	1	2	3	4	3	2	19	7.66
5	3	3	1	2		1	2	2	14	5.65
6	1		1	1	3	2		8	16	6.45
7	2	3	3	1	1	2	1		13	5.24
8	1	2	1	1		1	1	2	9	3.63
9	1	1	1	1					4	1.61
10	1	2			3			2	8	3.23
11	2	1		1	1	2	2	1	10	4.03
Total	34	30	20	27	26	30	28	53	248	100.01%

APPENDIX IV

Michigan State University Inhalator Runs, by Time and Year, 1955-1962

Hour Begin- ning	1955	1956	1957	1958	1959	1960	1961	1962	Total	%
12 M	1	1					2	6	10	4.03
1 A		1				1		4	6	2.42
2					1			1	2	.81
3			1						1	.40
4						1		1	2	.81
5		1						1	2	.81
6		1				1			2	.81
7			2			2	1	1	6	2.42
8	1	2		2		1	1		7	2.82
9	2			2		1	3	2	10	4.03
10	2	1	1	1	1	2	3	2	13	5.24
11	2	1	1		4	1	2	3	14	5.65
12 N	4	1	1	3	3		1	6	19	7.66
1 P	7	3	3	1	1		3	3	21	8.47
2	2	1	2	6	4	5	3	5	28	11.29
3		3	1	3	1	3		1	12	4.84
4	2	2	1	2	3	4	3	2	19	7.66
5	3	3	1	2		1	2	2	14	5.65
6	1		1	1	3	2		8	16	6.45
7	2	3	3	1	1	2	1		13	5.24
8	1	2	1	1		1	1	2	9	3.63
9	1	1	1	1					4	1.61
10	1	2			3			2	8	3.23
11	2	1		1	1	2	2	1	10	4.03
Total	34	30	20	27	26	30	28	53	248	100.01%

APPENDIX V

Michigan State University Inhalator Runs by Day, Month and Year, 1955-1962

Month	1955	1956	1957	1958	1959	1960	1961	1962	Total	%
Jan.	6	2	0	1	1	2	3	6	21	8.47
Feb.	2	3	2	1	3	1	0	7	19	7.66
Mar.	0	6	3	1	3	2	3	5	23	9.27
Apr.	4	3	5	5	2	1	3	3	26	10.48
May	3	1	3	2	3	2	2	6	22	8.87
Jun.	0	2	3	1	4	4	2	5	21	8.47
Jul.	2	3	0	1	0	2	1	2	11	4.44
Aug.	13	1	2	0	1	3	1	0	21	8.47
Sep.	1	0	0	2	2	3	2	1	11	4.44
Oct.	3	8	0	7	1	5	8	6	38	15.32
Nov.	0	0	1	4	4	5	2	6	22	8.87
Dec.	0	1	1	2	2	0	1	6	13	5.24
	34	30	20	27	26	30	28	53	248	100.00
Sun.	4	5	2	1	1	3	7	8	31	12.50
Mon.	3	6	2	6	4	2	6	10	39	15.73
Tue.	8	1	4	1	7	3	3	6	33	13.31
Wed.	10	4	3	2	4	7	1	6	37	14.92
Thu.	3	3	2	1	4	3	4	9	29	11.69
Fri.	3	5	5	3	3	4	5	7	35	14.11
Sat.	3	6	2	13	3	8	2	7	44	17.74
	34	30	20	27	26	30	28	53	248	100.00

APPENDIX VI

University Police Expenditures,¹ Fiscal Years 1951-1962

Fiscal Year	Number Officers	Labor Payroll ²	Classified Payroll ³	Personnel Expense	Supplies and Services	Equipment	Total	Cumulative Per Cent Increase
1951-52	13	67,506		67,506	11,170	3,953	82,629	-0-
1952-53	15	85,736		85,736	12,657	3,644	102,037	23.5%
1953-54	17	100,877		100,877	12,977	3,319	117,173	41.8%
1954-55	17	115,784		115,784	21,029	5,840	142,653	72.6%
1955-56	20	125,838	1,715	127,553	18,607	3,741	149,901	81.4%
1956-57	22	127,309	6,600	133,909	23,442	7,598	164,949	99.6%
1957-58	24	146,586	7,260	153,846	25,353	7,849	187,048	126.4%
1958-59	24	147,922	7,260	155,182	22,682	4,155	182,019	120.3%
1959-60 ⁴	24	164,096	7,920	172,016	23,374	7,923	203,313	146.1%
1960-61 ⁵	23	150,263	6,435	156,698	23,740	6,900	187,338	126.7%
1961-62	23	82,749	68,262	151,011	28,177	5,320	184,508	123.3%

¹Raised to nearest dollar.

²Includes temporary student labor.

³Excludes Director and clerical staff.

⁴Full-time Director established; Assistant Director changed to Captain on classified payroll; Lieutenant position abolished.

⁵Officers transferred to classified (monthly) payroll 1/1/62.

APPENDIX VII

East Lansing Fire Department Expenditures, Fiscal Years 1951-1962

Fiscal Year	Number Men	Labor	Supplies,		New Equipment	Total	One-half of Total	Cumulative Per Cent Increase
			Maintenance	Miscellaneous				
1951-52	18*	63,982.74	5,807.08		3,263.18	73,053.00	36,526.50	-0-
1952-53	18*	72,228.30	6,686.35		2,935.40	81,850.05	40,925.03	12.0%
1953-54	19	78,789.66	8,277.61		100.00	87,167.27	43,583.63	19.3%
1954-55	21	85,554.21	6,939.52		3,735.43	96,229.16	48,114.58	31.7%
1955-56	23	98,081.54	7,674.65		872.67	106,628.86	53,314.43	45.9%
1956-57	25	115,562.93	9,452.03		41,316.28	126,681.24	83,165.62	127.7%
1957-58	25	134,724.71	9,430.65		21,263.62	165,418.98	82,709.49	126.4%
1958-59	25	141,846.47	11,375.15		24,957.82	178,179.44	89,089.72	143.9%
1959-60	28	145,185.90	10,769.05		-	155,954.95	77,977.47	113.5%
1960-61	28	169,187.81	11,515.12		3,376.04	184,078.97	92,039.48	151.9%
1961-62	30	184,504.88	13,449.78		2,708.30	200,662.96	100,331.48	174.7%

*Estimated.

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