

**A Study of Undergraduate  
Fire Service Degree Programs in the United States**

by  
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A STUDY OF UNDERGRADUATE FIRE SERVICE DEGREE PROGRAMS  
IN THE UNITED STATES – FALL 2000

A Dissertation  
Presented for the  
Doctor of Education Degree  
The University of Tennessee, Knoxville

Thomas B. Sturtevant

May 2001

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## **DEDICATION**

This dissertation is dedicated to the coordinators/directors of fire service degree programs. More often than not, your best work is not readily noticed. In fact, you may never see the fruits of your labor. Press forward knowing that a better educated fire service will positively impact this nation's high fire losses.

## ACKNOWLEDGEMENTS

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Finally, I wish to thank my wife Karen and our three wonderful children, Rachel, Hannah, and James for their endless love, understanding, and support.

## **ABSTRACT**

Recent national efforts to coordinate and promote higher education in the fire service led to this national survey of fire service degree programs. The main purpose of the study was to gather descriptive information concerning fire service degree programs offered at two-year and four-year accredited institutions. A second purpose of the study was to identify the perceptions fire service degree program coordinators/directors hold concerning current and future issues affecting their programs. The information collected as part of the study can be used in a variety of ways from benchmarking among fire service degree programs to assistance and support with policy formation at the local, state, and federal level.

Of the 248 institutions identified for this study, 222 (89.52 percent) were associate level programs and 26 (10.48 percent) were bachelor level programs. A survey instrument was developed, pilot tested by national experts, and then mailed to the coordinators/directors of fire service degree programs for each of the institutions. Respondents were provided the opportunity to return completed surveys in the traditional paper format or through an electronic version located on the Internet. A total of 210 institutions responded to the survey resulting in an 84.68 percent return rate. At the associate level, 184 (82.88 percent) of the 222 programs responded and 26 (100 percent) of the 26 bachelor level programs responded.

The purpose of the study was achieved as the data collected provides an in-depth snapshot of the current status of fire service degree programs in the United States. Data were collected in the following five areas: Degree Program Information,

Student Information, Faculty Information, Distance Education Information, and Program Directors/Coordinators Perceptions.

Findings of the study included: 1) much is unknown about fire service degree programs during the 80s and 90s based on a void in research during this time period, 2) degree programs lack diversity in gender and race for coordinators/directors, faculty, and students, 3) the most important reported challenges facing degree programs included means and methods to increase enrollment, updating curriculum, finding quality instructors, lack of funding, and lack of incentives for earning an advanced degree, and 4) program changes coordinators/directors plan to make include updating and revising curriculum, working on distance education initiatives, and adding new courses, certifications, and programs.

Recommendations for further research included extending this study into a consistent collection process and expanding investigation into other related/advanced degree programs and into the fire service itself. Based on the findings and analysis of the study, the researcher suggested that fire service degree program coordinators/directors in cooperation with national fire service organizations such as the National Fire Academy, the International Association of Fire Chiefs, the International Association of Fire Fighters and other organizations work together toward: 1) supporting ongoing fire and emergency service higher education research, 2) developing nationally recognized traditional and distance education curriculum, 3) establishing meaningful incentives for obtaining advanced fire service degrees, 4) providing increased assistance to degree programs, and 5) increasing the diversity of students and faculty within fire service degree programs.



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# CHAPTER I

## INTRODUCTION

### **Background**

Throughout the history of the fire service, training of firefighters most often occurred from within a fire department. As a discipline, the fire service is training-oriented (Clark, 1993). Even today, almost every fire department in the United States has a training division. However, fire department training programs have been overburdened by the need to address several disturbing trends. These include lack of progress toward reducing the staggering number of U.S. emergencies, the continued increase in complexity and diversity of these emergencies, and the changing role and scope of services provided by fire departments. These three issues have highlighted the need to embrace formalized higher education as a required supplement to traditional fire department training programs.

Each year, fire and emergency service personnel respond to a staggering number of emergencies. According to the United States Fire Administration, each year fire departments respond to an average of 2.1 million fires that result in 5,117 civilian fire deaths, 28,400 civilian injuries, and \$9.6 billion in property loss ("Fire in the United States," 1998). To put the large number of annual fires in perspective, Karter reported that during 1999, a fire department responded to a fire somewhere in the nation every 17 seconds (2000, p. 81). Firefighters themselves are not immune to the devastating effects of fire. During 1997, a total of 94 firefighters lost their lives (Washburn, LeBlanc, & Fahy, 1998) and in 1998 a total of 87,500 firefighters were

injured (Karter & LeBlanc, 1999). Progress toward reducing these trends has been slow and, in some cases, non-existent.

Today, fires in general are more dangerous than ever before. Materials commonly found in most homes help fire to spread quickly as well as produce volumes of toxic smoke. For example, the increased use of plastics in the U.S. has resulted in more fire deaths from toxic fumes and rapid-fire progression during a fire. Construction methods can also make fires more dangerous. The move to reduce construction costs has triggered a growing trend to use lightweight construction methods that tend to accelerate the spread of fire and reduce the time it takes for structures to collapse.

Added to the dilemma of responding to a large number of dangerous fires is the changing role and scope of fire departments. Thirty years ago, fire departments primarily responded to fires. Fifteen years ago, fire departments were expected to respond to medical and hazardous materials emergencies (“America Burning Revisited,” 1990). Today, citizens throughout the United States rely upon, and expect, firefighters and emergency service personnel to respond instantly to a wide range of emergencies. Emergency service personnel are being forced to explore and develop more sophisticated methods to mitigate emergencies. This changing landscape requires emergency service personnel to be better educated (Wilson, 1996).

Although fire service degree programs in higher education have been in existence for a number of years, only recently has the fire service actively supported and encouraged the trend. An informal review of job announcements in professional journals finds that many senior ranking positions in the fire service now require an

advanced degree. In addition, advancement through lower ranks within the fire service increasingly has a pre-requisite of a two-year or four-year degree program (Weiger, 1998). This recent emphasis on higher education by the fire service has resulted in an increase in the number of institutions offering fire service degree programs.

The growth in fire service degree programs has not occurred without controversy. One important issue centers on the distribution of training and education between in-house fire training departments, two-year programs, and four-year programs. Lack of communication and coordination between and among the fire service and higher education institutions offering fire service degree programs is another issue. This lack of communication and coordination has led to a variety of different fire service degree programs. The result is confusion for both the fire service and higher education.

Over the past three decades, several efforts were made to assist the fire service and educational institutions offering fire service degree programs. The major focus of efforts during the 1970s was research. The National Fire Prevention and Control Administration, U.S. Department of Commerce, sponsored several national research projects that attempted to identify the status, trends, and issues of fire related degree programs. During the late 80s and early 90s, the major focus appeared to center on enhancing communication and coordination between and among fire service degree programs. During this time, the National Fire Academy (NFA) took a lead role by sponsoring several regional and national meetings and conferences. Funding issues in the mid 90s limited the NFA's efforts to build on initial success. During the late 90s,

with funding issues resolved, the NFA initiated the most recent, and perhaps most aggressive, effort to assist fire service degree programs.

In April 1999, the NFA sponsored a conference of fire training and higher education coordinators to discuss a formalized process for networking, planning, and collaborating. During the conference, discussions in breakout sessions were hampered by a lack of descriptive information on the current status of degree programs such as the number of degree programs, degree names, enrollment and graduation trends, instructor qualifications, and delivery methods.

The final report generated by this conference contained several goals related specifically to research needs (“Fire & Emergency Services Higher Education Conference” 1999). These goals were:

1. Conduct a national survey of higher education institutions offering fire service degree programs to determine demographic information such as the number, structure, and enrollments of fire service programs.
2. Analyze and determine the current level of service provided by two-year and four-year programs as the first step toward development of a model curriculum.
3. Conduct a survey to identify current use of distance education methods in fire service higher education degree programs.

This study was designed to help achieve these goals.

## **Statement of the Problem**

To date, no recent empirical studies on the status of fire service degree programs have been reported in the literature. The National Fire Prevention and Control Administration sponsored the most recent national study on fire service degree programs in 1975.

The National Fire Academy sponsored the first conference for the Fire and Emergency Services Higher Education Conference in April 1999. Throughout the conference, participants echoed the concern of not having important information on the current status of fire service degree programs in the U.S. What types and levels of degree programs are being offered? What qualifications do instructors in these programs possess? How many students are enrolled and graduate from these programs? How is distance education being used in these programs? Should a model curriculum be developed? What are current and future issues for fire service degree programs? This study was designed to answer these questions.

## **Purpose of the Study and Research Questions**

The main purpose of this study was to gather descriptive information concerning fire service degree programs offered at two-year and four-year level institutions in the United States. Specific research questions investigated were:

1. Of the institutions offering fire service degrees, what percent are associate degrees and bachelor degrees and are these programs evenly distributed across the United States between the two levels or are there regional patterns or trends?"

2. Are there differences within each degree level concerning degree name and between the levels concerning enrollment, graduation, and purpose?
3. What are the directors' and instructors' characteristics concerning highest earned degree, salary, and number of full-time/adjunct instructors?
4. What is the percentage of technical and general education courses, and who controls the curriculum?
5. To what extent do degree granting institutions accept transfer credit other than college courses such as national certificates and/or Academic Council on Education (ACE) recommendations for National Fire Academy (NFA) courses?
6. How many and what percent of fire service degree programs use distance learning methods to deliver courses?
7. What are the types of distance learning delivery methods used and what courses are offered through distance learning methods?

A second purpose of this study was to identify the perceptions fire service degree program coordinators/directors hold concerning current and future issues affecting fire service degree programs. Specific research questions investigated were:

8. What do coordinators/directors consider to be current challenges facing fire service degree programs?
9. What degree program changes are planned?
10. What are the views of coordinators/directors toward program funding, purpose of degree programs, acceptance of higher education in the fire service and the development of a model fire service curriculum?

## **Significance of the Study**

The fire service is in a critical period as it attempts to both enhance its professional image as well as provide expanding services in an efficient and effective manner. The current method of training firefighters in-house is perceived by some to be ineffective in reducing the staggering number of U.S. emergencies and lacking in ability to address the changing role and scope of services provided by fire departments. The fire service must increase the integration of formalized education into their training and education program. This study may help this process by providing the NFA, the International Fire Chiefs Association, the International Fire Fighters Association, the fire service, and higher education institutions with descriptive data from which to begin cooperative planning. The information collected as part of this study will provide baseline data for future studies allowing for more accurate tracking of trends. In addition, institutions offering fire service degree programs can use this information as a benchmark and/or for comparing their program to national averages. Finally, policymakers at the state and national level can use the information gathered to initiate and/or support program and legislative initiatives.

The ultimate goal of the fire service is to save lives and property. Indirectly, this study, all those who provided guidance for the study, and those who participated in the study will assist in the fire service's goal of saving lives and property. The information provided in this study may help the NFA and higher education institutions work toward increasing the acceptance and use of higher education in the fire service. In turn, a better-educated fire service may begin to meaningfully affect the staggering

number of fires in the United States. It is conceivable that lives could be saved and suffering reduced based on the information derived from this study.

### **Assumptions**

This study is based on the following assumptions:

1. Fire service degree coordinators are knowledgeable about various aspects of their degree program.
2. Degree program coordinators provided accurate information on the questionnaire.

### **Limitations and Delimitations**

The following limitations of the study were identified:

1. The study was limited by the willingness of fire service degree program coordinators to participate in the survey.
2. This study was limited by the extent to which respondents accurately and thoroughly completed the survey instrument.

This study was delimited to:

1. Institutions that held regional accreditation during the 1999/2000 academic year.
2. Institutions offering two-year and four-year fire service degree programs with a 43.02 Classification of Instructional Programs (CIP) code as listed in the 1990 edition of the Classification of Instructional Programs.



3. Responses from coordinators of fire service degree programs.

### **Definition of Terms**

The following statements define selected terms as they are used in the study.

Accredited institutions refers to higher education institutions that are accredited by one of the regional accrediting bodies.

Asynchronous learning refers to instructional interaction between the professor and students that occurs with a time delay.

Distance education refers to a system of instruction that uses a wide spectrum of delivery technologies such as video, email, Internet, and telephone to reach students that are geographically distanced from the instructor.

Fire service refers to organizations that respond to emergency calls.

Fire service degree programs are formalized instruction programs offered by higher education institutions that prepare individuals for firefighting, fire protection specialist, fire service administration and related services.

General education courses include those academic courses typically required in most degree programs such as English, speech, math, psychology, and history.

HazMat is a common acronym in the fire service for Hazardous Materials.

Higher education institutions refers to regionally accredited institutions offering AS, BS, and post-baccalaureate degree programs.

ProBoard is the accepted acronym for the Professional Qualifications Board.

Synchronous learning refers to instructional interaction between the professor and students that occurs in real time.