

Running Head: PENSION DILEMMA: MAINTAINING A SAFE WORKFORCE

Executive Development

Pension System Dilemma:

Maintaining a Safe Workforce

Robert L. Smith

Battle Creek Air National Guard Fire Department

Battle Creek, Michigan

August 2004

CERTIFICATION STATEMENT

I hereby certify that this paper constitutes my own product, that where the language of other is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions, or writings of another.

Signed: _____

Abstract

The problem was that Michigan firefighter pensions required working beyond recognized fitness standards. The purpose of this research was to identify available pensions that support the standards. Historical and action research answered the questions: (a) what are the Federal Retirement Systems for firefighters? (b) what are neighboring states doing for retirements systems for firefighters on military bases? (c) what pensions were in place for State of Michigan employees? (d) what pension system will best support the National Fire Protection Association and military medical and fitness requirements that firefighters must meet? Procedures use to complete this project included interviews and literature reviews. This research's recommendations suggest steps to enhance firefighter pensions to facilitate retirement before a firefighter's fitness degrades.

TABLE OF CONTENTS

	PAGE
Abstract.....	3
Table of Contents.....	4
Introduction.....	5
Background and Significance	6
Literature Review.....	16
Procedures.....	54
Results.....	62
Discussion.....	82
Recommendations.....	92
References.....	96

LIST OF TABLES

Table 1: Percentage of Base Pension.....	25
Table 2: Comparison of Age and Service Requirements.....	77
Table 3: Comparison of Annuity Calculations	79
Table 4: Supplemental Incomes.....	82

Introduction

Pension System Dilemma: Maintaining a Safe Workforce

Pension systems, age and fitness issues are getting increased attention in the fire service. The problem is that the State of Michigan's retirement system assigned to the Fire Crash Rescue Officers requires its members to continue working beyond the safety standards for physical abilities and fitness as defined by the National Fire Protection Association (NFPA) and the Department of Defense (DoD). The Air National Guard (ANG) asked the State of Michigan to provide qualified firefighters to the installation fire chiefs. The ANG provides the funding necessary to implement and maintain the program. The State of Michigan agreed to provide the services. The ANG requires the firefighters to meet medical and fitness guidelines of the NFPA. These guidelines and mandates apply pressures to maintain young physically fit firefighters. The State of Michigan pension system for the firefighters is designed to produce acceptable annuities after a long career that often requires an employee to work beyond the age of 60. These pressures to maintain a high level of fitness and to work into high age ranges are contradictory to the employee's and the public's safety.

The purpose of this research was to identify available Michigan retirement systems that will support the NFPA and DoD standards for fire service personnel that hire into the system. This research also makes a recommendation for implementation of actions to enhance the firefighter retirement systems. The recommendation elements will provide a pension benefit that will encourage early retirement and provide an income level that is acceptable to the employee while maintaining adequate fiscal responsibility for the State of Michigan.

The methodologies for this research were historical and action research. A historical approach was taken by conducting a literature review of pension systems used by the federal and state governments that employ firefighters on military installations. A brief literature review was conducted that provides insight to the issues of age and fitness within the fire service and how retirements are effected by these issues. An action approach was taken to produce several recommendations that would help establish adequate pension systems to enhance firefighter and the public's safety.

The following are the research questions used to guide this study:

1. What, if any, are the Federal Retirement Systems for firefighters?
2. What, if any, are neighboring states doing for retirements systems for Civil Service Firefighters on military bases?
3. What, if any, are the retirement systems currently in place for State of Michigan employees?
4. What, if any, retirement system will best support the National Fire Protection Association and military medical and fitness requirements that the Fire Crash Rescue Officers must meet in the State of Michigan?

Background and Significance

State of Michigan Civil Service Crash Fire Rescue Program Creation

The primary Department of Defense (DoD) Instruction number 6055.6, *DoD Fire and Emergency Services Program* (2000) establishes fire protection programs within the DoD. This directive states "DoD Components shall establish and maintain an installation F&ES program, as an element of the overall DoD accident prevention program" (p. 2).

To comply with this guidance, the Air National Guard instituted a program to fund full time fire protection services at their facilities across the United States.

Crash Fire Rescue Officer Program Implementation, Requirements and Functions

In the 1980's, the Air National Guard Bureau (ANG) began an initiative to provide full-time fire protection services to all it's bases. The mechanism to provide these services was the use of State Civil Service employees. The first facility in the State of Michigan to receive firefighters is located in the City of Battle Creek at the W.K. Kellogg Airport. The process started with the ANG notifying the State of Michigan - Office of State Employer (OSE) that funds would be provided to support 24 firefighters at the facility. This offer came with the provisions that the personnel had to be hired and in place within one year or the funds would be returned and used to fund firefighters in other locations (G. Caldarea, personal communication, April 9, 2004). The Michigan Department of Military and Veterans Affairs (DMVA), which became the primary point of contact for coordination between the National Guard Bureau and the Office of State Employer was notified. The fire chief at the Battle Creek Air National Guard Base, Senior Master Sergeant (SMSgt.) Kenneth Shaw, was made the point of contact between the DMVA and the OSE. The first firefighters were to be in place no later than October of 1991.

At the initial notification, the State of Michigan did not have a state civil service job classification for firefighters. The positions had to be created, assigned to a bargaining unit and pension system prior to hiring of personnel. The Department of Civil Service was also under a hiring freeze. This created additional delays in establishing the

program on time. There was not enough time to establish new programs so the positions were assigned to an existing bargaining unit and pension systems.

Funding and budgeting for the entire program would be managed by the installation fire chief. The fire chief at the initial base in each state to receive firefighters worked with the State Civil Service Office to establish pay and benefit programs within each state system. The cost to provide Civil Service firefighters would be reimbursed to the state governments by the ANG. Although the funding was reimbursed 100% by the federal government, the employees in each state would be considered employees of that state and would not be entitled to pay or benefits from the federal government. The respective State assumed the responsibility to ensure all requirements and regulations including DoD, Air Force, ANG, NFPA and Occupational Safety and Health Administration (OSHA) requirements, guidance was enforced.

Under the guidelines provided by the ANG and the DoD, the state must provide firefighters that could meet the requirements of several layers of regulations and standards. The primary guidelines for the program start at the federal level with the Department of Defense Instruction number 6055.6, *DoD Fire and Emergency Services Program* (2000). This document established very broad guidelines to Fire and Emergency Services (F&ES) on to the standards that should be implemented in fire protection.

Classification and Assignment of Pension System

At the time of the request from the DMVA to establish firefighters within the State of Michigan, the Department of Civil Service did not have a job classification that represented the traditional firefighter job. The closest Civil Service job class was the Conservation Offices who had fire fighting duties as part of their job specification. Their

duties were limited to wild land fire fighting and did not include more common fire fighting duties such as structural fire fighting, confined space, and hazardous material responses. The duties of the new firefighter would also include being prepared and proficient in structural, aircraft and munitions fire fighting and emergency medical responses. A new job class was created.

With the help of SMSgt. Kenneth Shaw, a new job specification was created that more directly related to the functions required in National Guard Regulation 5-1/Air National Guard 63-101 (2002) (NGR 5-1/ANG 63-101). The primary job classification title for firefighters became “Fire Crash Rescue Officers” (FCRO). Three levels were created, firefighter, crew leader and supervisor with each having a slightly different job specification within the job class. These job classifications were used to hire all Civil Service firefighters within the State of Michigan. The next step was to determine which bargaining unit would be adequate to represent the new job classes.

There were eight primary bargaining units in the state of Michigan. None of the units had experience with firefighters who worked 24 hour shifts. They each had wage, benefits and retirement issues different from traditional 40 hour per week employees. The unit that was selected was required to negotiate new work rules and regulations that suited fire protection operations with the DMVA. The bargaining unit leadership required time to understand the issues relating to the Fair Labor Standard Act, firefighter work conditions and military standards that affected the program. The Michigan State Employees Association bargaining unit was selected as the representative for the Fire Crash Rescue Officers. They were selected due to a large portion of the existing

membership being classified as *safety and regulatory* in nature, and having some familiarity with federal regulations (K. Shaw, personal communication, May 7, 2004).

The State of Michigan had three different pension systems within the Civil Service System. The Michigan State Police Retirement System, the Public School Employees Retirement System and the State Employees Retirement System were the choices available for the Department of Civil Service to place the Fire Crash Rescue Officers into. None of the systems had any special provisions for firefighter pensions. Since the firefighter positions were not at all like the Public School Educators, that system was not considered. The Michigan State Police Retirement System was bypassed for consideration because this system was reserved for sworn officers in the Department of State Police. The Fire Crash Rescue Officers were placed in the traditional State Employees Retirement System, which was a defined benefit pension system. In 1997, the State implemented a State Employees Retirement System that was a defined contribution system and all new employees are required to enroll in this program. All existing employees at the time were given the opportunity to convert to the new system. Few Fire Crash Rescue Officers opted into the system (Public Act 240, 1943).

The State Employees Retirement System did not include special provisions for firefighters. The system was a general retirement system that encouraged employees to work extended years to receive full benefits. Traditional firefighter issues, such as mandatory retirement ages, minimum retirement ages and penalty free collection of annuities at an early age were not addressed in the system (Public Act 240, 1943).

The Hiring Process

The first Fire Crash Rescue Officers were hired in February of 1991. The hiring process followed a standard format used by the Department of Civil Service to fill the newly vacant positions, which included application solicitations, grading of applications, written testing and interviews of each candidate. An additional requirement for a physical agility test was added for this hiring process. Every candidate was required to complete and pass the agility test prior to the interview process. Since Civil Service guidelines prohibited age discrimination in employment, perspective employees were considered regardless of age. Subsequently, one of the individuals hired was 52 years old, another was 48 years old, and three were between the ages of 35 and 40 years old. The remaining 19 hires were under the age of 35 (K. Shaw, personal communication, May 7, 2004).

The first eight Fire Crash Rescue Officers for the Alpena CRTC were hired in July of 1997. Alpena received eight personnel at that time. In 2002, two additional personnel were hired. During the initial hiring, one candidate hired was 52 years old. The remaining seven hires were under age 35 (K. Shaw, personal communication, May 7, 2004).

Fitness Requirements

The Fire Crash Rescue Officer program was intended to utilize the individual states to provide firefighters that could perform the required tasks. Fitness requirements are addressed in several guiding documents for the program. Under the guidelines provided by the ANG and DoD, the state must provide firefighters that could meet the requirements of several layers of regulations and standards. The primary guideline for the program was DoD Instruction number 6055.6, *DoD Fire and Emergency Services*

Program (2000). This document established broad fire protection standards to implement Fire and Emergency Services (F&ES).

To further support the efforts to keep physically fit firefighters in the service, the DoD had previously implemented Directive Number 1402.4 (1988), which states, “This Directive establishes a maximum age standard of 35 years for entry into selected fire fighter and law enforcement officer positions under reference (a)” (p. 1). Where, “Reference (a) is section 3307 of title 5, United States Code” (p. 1).

The NGR 5-1/ANG 63-101 (2002) further implemented fitness standards on the Civil Service firefighters by imposing the requirements of NFPA Std. 1582, *Standard on Comprehensive Occupational Medical Program for Fire Departments* (2003) and NFPA Std. 1500, *Fire Department Safety and Health Program* (2003). Both standards provide references to established fitness programs for firefighters.

Retirement Demographics

The State Employees Retirement System had several provisions for retiring with benefits. The earliest that an employee could retire and draw a full annuity was at age 55 with 30 years of service. To achieve this, an employee would have to hire into the system at age less than twenty five. Short of getting to the 30 years of service, an individual must work until age 60 to collect a non-penalized annuity. This restriction causes firefighters to work until age 60 in most cases. Additionally, the State of Michigan does not have a maximum age at which an individual could gain employment into the Fire Crash Rescue Program (Public Act 240, 1943).

The defined benefit pension system allows for individuals to retire and collect benefits at age 60, however, individuals may retire prior to age 60 and receive reduced

benefits for early annuity disbursements. The reduction in benefits is 0.5% of the final annuity for each month that an individual collects prior to age 60. This reduction is severe enough that it reduces an employee's income recovery rate to an unacceptable level. The current employees will be forced to work through the age of 60 to receive adequate pension benefits. This causes concern that a conflict may arise between fitness and the ability to retire with benefits suitable to support a comfortable life style (Public Act 240, 1943).

The defined contribution system that was developed and implemented in 1997 is a traditional Internal Revenue Service (IRS) 401k and/or 457 tax deferment plan. The State of Michigan and the Employee contribute percentages of the employees earning to the account each pay period. The employee's pension is based on the account growth over time. This system allows employees to retire and draw a pension benefit at the age of 59½ years old. The amount of pension is dependant on the amount of savings and projected life span of the employee after retirement. Any withdrawal of pension funds prior to age 59½ will result in IRS penalties for early withdrawal (Public Act 240, 1943).

Since the inception of the Fire Crash Rescue program in the State of Michigan there have been 35 long-term hires into the system. One individual has retired and received a monthly annuity. That individual was one of the initial hires and was age 52 at the time of hire. He subsequently retired after the minimum requirement of ten years employment at the age of 62. In calculating the annuity benefit, this individual receives 15% of the average of the highest three years salary. As of May 2004, the Fire Crash Rescue Program had two individuals that would be retiring with the similar reduced benefits due to hiring in at a late age (K. Shaw, personal communication, May 7, 2004).

Significance of Study and Linkage

This research project is related to the National Fire Academy's (NFA) Executive Development Course, because the "course is intended to prepare the fire service executive for the 21st century. Executive traits must include the leader as a learner, one who can anticipate future trends" (Executive Development, 2004, p. SM iii). In the future, nearly 40% of the work force will be over the age of 45. The trend of increasing retirement ages will have adverse effects on firefighters and the public safety (Lusa, Sirpa, Louhevaara Veikko, Kari and Kinnunen, 1994).

At the same time, the fire service is being asked to prepare to provide services that are traditionally viewed as military operations such as terrorist events as identified in the United States Fire Administration's (USFA) Emergency Response to Terrorism self study guide (1999) which says, "Experts generally agree that there are five categories of terrorist incidents. We need to take a brief look at the five: biological, nuclear, incendiary, chemical and explosive" (p. 8). These military types of operations are generally carried out by younger, physically fit firefighters.

This research project relates to the five operational objectives of the United States Fire Administration's (Executive Development R123, 2003, p. 3). In this document, objectives 1 and 2 focus on reducing the loss of life from fire in the age group 14 years old and below, and reduce the loss of life from fire in the age group 65 years old and above. There is no doubt that all ages of people travel by air. Fire Crash Rescue Officers primarily work on airports that have commercial air traffic. The ability to maintain a youthful work force and operate in a highly efficient manner during aircraft incidents or

fires should result in reduced life loss in all ages of people. Dr. Loren Myhre stated in congressional hearings:

I think the age factor has to go away some time-and I keep saying that—but not today, because right now, the probability of a fire fighter of 55 being able to perform successfully is so low that it would jeopardize the safety of the people he is supposed to help. (S.553 and H.R. 849: Age Discrimination in Employment Amendments of 1995, March 8, 1996)

Objective 3. “Reduce the loss of life from fire of firefighters” (Executive Development R123, 2003, p. 3). The correlation between firefighters over the age of 35 and medical injuries, such as heart attacks, is documented (USFA Firefighter Fatality Retrospective Study: 1990-2000 (2002). Providing early retirements for firefighters will reduce the likelihood that a firefighter will succumb to a serious condition on the fire ground, which would endanger themselves and their co-workers.

Objective 4. “To promote within communities a comprehensive, multi-hazard risk-reduction plan led by the fire service organization” (Executive Development R123, 2003, p. 3). By maintaining a healthier work force, a risk reduction can be projected to the Department of State Civil service through the reduction of Workman’s Compensation claims, and possibly loss of firefighter lives on the job. The Fire Crash Rescue Program in the State of Michigan is only 13 years old and has yet to experience the death of a firefighter. However, there have been conditions identified that could have resulted in catastrophic events on the fire ground at given times.

Objective 5. “To respond appropriately in a timely manner to emerging issues” (Executive Development R123, 2003, p. 4). The issue of firefighter fitness is rapidly

expanding. Fire organizations will be implementing fitness programs due to the requirements of NFPA standards 1500 and 1582. The implementation and assessments will identify some firefighters that will never meet the standards. What will the organizations do? Is early retirement an option over a disability retirement for failure to meet the standards? This issue will not simply go away. The fire service is being called upon to perform a greater variety of tasks that may be beyond the capabilities of an older generation. Some of the tasks include anti-terrorism and weapons of mass destruction responses. The fire service is a para-military organization and each new requirement and regulation demands that it function in that manner. In recognition of these demands, the military and Federal Civil Service have established maximum hiring ages and mandatory retirement ages for firefighters to ensure the work force is young and viable.

I carried out this research project focusing on action and historical research methods. Data was collected to answer the research questions: (a) what, if any, are the Federal Retirement Systems for firefighters? (b) what, if any, are the neighboring states doing for retirement systems for Civil Service firefighters on military bases? (c) what, if any, are the retirement systems currently in place for State of Michigan Employees? (d) what, if any, retirement system will best support the National Fire Protection Association and military medical and fitness requirements that Fire Crash Rescue Officers must meet in the State of Michigan?

Literature Review

The purpose of this review was to gather and review information relating to the primary research questions. Literature that was specific to each federal and state retirement systems was located by going to each state's primary web site and reviewing

material available to employees in each respective governmental agency. The Department of Defense, United States Air Force, Air National Guard and personal interviews provided literature relevant to the establishment of the Fire Crash Rescue Officer field within the State of Michigan. A review of National Fire Protection Association standards that are referenced in military documentation was conducted. Finally, due to the relationship between pension system requirements and health/fitness issues, a search of the internet became the primary source of documents relating to the development, implementation and administration of pension systems. Using the internet, a search of pensions, retirements and firefighter health and fitness was conducted to provide material that supported question 4 of this research. By analyzing the existing body of knowledge from these firefighting organizations, pension governing boards, and federal, state and local governments produced material that is relevant to each research question that was further used to develop the discussions and recommendations of this author.

The literature search and review that supports the four research questions also provides the basic layout of this section. The research questions to be answered by this literature review are:

Question 1. What, if any, are the Federal Retirement Systems for firefighters?

Question 2. What, if any, are neighboring states doing for retirement systems for Civil Service firefighters on military bases?

Question 3. What, if any, are the retirement systems currently in place for State of Michigan Employees?

Question 4. What, if any, retirement system will best support the National Fire Protection Association and military medical and fitness requirements that Fire Crash Rescue Officers must meet in the State of Michigan?

This section will conclude with a summary of the literature that was reviewed during the research of pensions systems in general, firefighter fitness issues and a various pension systems utilized for Crash Rescue Fire Officers in Michigan and other States.

Federal Civil Service Employees Pension System

The literature review for federal retirement systems constitutes a limited amount of documentation. This was due to the federal civil service employees having a single option for a pension system. Question 1 in this research, what, if any, are the Federal Retirement Systems for firefighters is addressed with a review of a single document.

Federal civil service firefighters participated in the Federal Employees Retirement System (K. Shaw, personal communication, May 7, 2004). A review of literature for Federal civil service firefighter pension system was conducted by reviewing Title 5 of the United States Code, *Government Organization and Employees* (1966). Retirement provisions for federal civil service employees are addressed in Title 5, Part III, Subpart G, Chapter 84, *Federal Employees Retirement System* (1986). Chapter 84, Federal Employees Retirement system (1986) was an amendment that was added in 1986 converting all new employees from the Civil Service Retirement System (CSRS) to the Federal Employees Retirement System (FERS). The FERS system included a combination of a defined benefit and defined contribution pension system. Under the FERS system firefighters may retire:

After completing 25 years of service as a law enforcement officer, member of the Capitol Police or Supreme Court Police, firefighter, or nuclear materials courier, or any combination of such service totaling at least 25 years, or

After becoming 50 years of age and completing 20 years of service as a law enforcement officer, member of the Capitol Police or Supreme Court Police, firefighter, or nuclear materials courier, or any combination of such service totaling at least 20 years is entitled to an annuity. (Section 8412)

The computation of the basic annuity was calculated by multiplying 1.7 % of the individual's average pay by total years worked, not to exceed 20 years. All years of service over 20 were credited by adding an additional 1% of the individual's average pay for each year over 20 (Section 8415).

The normal penalty for early annuity collection for Federal Civil Service Employees was a reduction of 5/12 of 1 percent for each full month that the annuity precedes the 62nd birthday of the employee. However, firefighters may collect an annuity anytime upon retiring after age 50 without a penalty being applied (Section 8415).

The Thrift Savings Plan was an involuntary defined contribution plan for the employee. Each pay period, the employer would contribute an amount equal to 1% of the employees pay period salary to the plan. In addition, the employee may contribute up to an additional 10% of their pay. If the employee elected to contribute additional funds, the employer would match the first 3% of contributions, the next 2% that the employee elected to contribute would be matched 50 cents to each dollar. The total contributions to this plan are subject to the Internal Revenue Service limits for tax-deferred contributions (Section 8432).

An employee may withdraw funds without penalty at the age of 59 ½ in accordance with Internal Revenue Service limitation. All annuities paid are subject to taxes at the time of distribution and if the funds are drawn prior to age 59 ½, a 10% early withdrawal penalty will be assessed (Section 8432).

The federal civil service retirement system also had a mandatory separation requirement for firefighters at the age of 57.

A law enforcement officer, firefighter, or nuclear materials courier who is otherwise eligible for immediate retirement under section 8412(d) shall be separated from the service on the last day of the month in which that law enforcement officer, firefighter, or nuclear materials courier, as the case may be, becomes 57 years of age or completes 20 years of service if then over that age . . . (Section 8425)

The federal civil service pension system provided a unified pension system for all federal civil service employees regardless of the location of the individual's worksite. Federal employees may transfer from worksites located in different states or countries and still participate in the same pension system. The ANG firefighters were civil service employees of the state in which they work. Each state provides a pension system that was unique to the laws and regulations of that state.

Pension Systems from Neighboring States

Literature was gathered from neighboring states to answer question 2: What, if any, are neighboring states doing for retirement systems for civil service firefighters on military bases? Four state systems were reviewed. They were Illinois, Indiana, Ohio and Wisconsin. These states were picked because they boarder and surround Michigan.

The Illinois State Employees Retirement System.

There were three Air National Guard bases in Illinois that have state civil service firefighters. They were located in Chicago, Peoria and Springfield. The Illinois civil service firefighters are members of the State Employees Retirement System (J. Boyd, personal communication, May 18, 2004). The State Employees Retirement System of Illinois included an alternative retirement formula that covers firefighters (Your Right & Responsibilities Handbook, 2001, p. 22). The qualifications for retirement are:

The Alternative Formula applies to members in certain positions with 20 years of alternative service. Members eligible for the alternative formula may retire at age 50 with 25 years of service, or at age 55 with 20 years of service. (Your Rights & Responsibilities Handbook, 2001, p. 20)

The alternative retirement formula had two slightly different methods of calculating the annuity payment. The difference was based on the employee's decision to participate in social security. The final annuity was determined by multiplying the creditable service years and months by a multiplier and the final average compensation. The multiplier was 2.5% for employees covered under social security and 3.0% for those who are not (Your Rights & Responsibilities Handbook, 2001, p.20). The final average compensation was:

For an alternative formula employee, final average compensation is the rate of pay on the last day of employment, or the last 48 months of average compensation, whichever is greater. The benefit maximum is 80% of final average compensation. (Your Rights and Responsibilities Handbook, 2001, p. 20)

Penalties for early annuity collection were in place for employees participating in the regular retirement program. Employees who elect to retire between the ages of 55 and 60 with 25 to 30 years of service will incur a reduction of $\frac{1}{2}$ of 1% for each month under age 60 (Your Rights and Responsibilities Handbook, 2001, p. 23). These penalties did not apply to the personnel who retire under the alternative formula.

The Indiana Public Employees Retirement Fund.

There were two Air National Guard bases in Indiana that have state civil service firefighters. They were located in Fort Wayne and Terre Haute. The Indiana civil service firefighters are members of the Public Employees Retirement Fund (PERF) (K. Maxwell, personal communication, May 18, 2004). The Public Employees Retirement Fund of Indiana was comprised of a defined benefit and mandatory defined contribution system. The pension system age and service requirements follow a rule of 85 for those under the age of 60. An employee must have an age and years of service equal to age 85 to retire with unreduced benefits. The qualifications for a full un-reduced retirement are:

1. If you are age 65 and have 10 or more years of creditable service under PERF;
2. If you are age 60 and have 15 or more years of creditable service under PERF; or
3. If you are at least age 55 and the sum of your age at retirement and your total years of creditable service under PERF equals 85 or more (known as the “Rule of 85”). (2002 Member Handbook, p. 27)

The Public Employees Retirement Fund allowed for an early retirement with a reduced pension. The amount of the reduction was dependent on the age of retirement.

PERF also provides early retirement options, where the pension benefit will be reduced based on your age. You will qualify for early retirement with a reduced pension if you are not in categories 1, 2 or 3 for normal (unreduced) benefits and:

1. If you are between the ages of 50 and 59, and
2. If you have 15 or more years of creditable service under PERF.

Keep in mind, that if you choose to take early retirement, your pension benefits will remain at a reduced level even after you reach 60 years of age. (2002 Member Handbook, p. 28)

If you are entitled to early retirement with reduced benefits, the following chart shows how the pension part of the benefit is reduced according to your age.

Retirement Age	Percentage of Pension
59	89%
58	84%
57	79%
56	74%
55	69%
54	64%
53	59%
52	54%
51	49%
50	44%

(2002 Member Handbook, p.28)

The computation of the basic annuity was calculated by multiplying 1.1% of the individual's final average pay by years of creditable service (2002 Member Handbook, p. 6). Final average pay was equal to the highest five years of compensation (2002 Member Handbook, p. 7).

A separate annuity savings account was set up for the state civil service employees. The required contribution was 3% of an employee's gross wages. "Indiana

law requires the State of Indiana to pay the 3% contributions for state employees” (2002 Member Handbook, p. 17). Any annuity collection of the savings account that occurs prior to age 59 ½ may be subject to an additional 10% federal penalty (2002 Member Handbook, p. 41).

The Ohio Public Employees Retirement System.

There were four Air National Guard bases in Ohio that have state civil service firefighters. They were located in Rickenbacker, Springfield, Mansfield and Swanton. The Ohio civil service firefighters were members of the Ohio Public Employees Retirement System (R. Togliatti, personal communication, May 18, 2004). The Ohio Public Employees Retirement System (OPERS) is comprised of a defined benefit plan and a voluntary defined contribution system. The qualifications for a full unreduced retirement were “Any age with 30 years of total service credit; age 55 with 25 years of total service; any age 60 with 5 years of service credit” (Member Handbook, n.d.).

Ohio Public Employees basic annuity benefits were calculated by multiplying the years of total service credit by 2.2% of the final average salary for each of the first 30 years of total service credit. Any years over thirty were multiplied by 2.5% of the final average salary. The final average salary was calculated as the members three highest years of annual salary (Member Handbook, n.d.).

Employees may retire as early as age 55 if they have 25 years of service. However, a reduced annuity benefit will be incurred. Employees with 30 years of service may retire and receive 100% of the basic annuity benefit. Any employee with less than 30 years service would be penalized and receive only a percentage of the base pension amount as shown in table 1.

Table 1

Percentage of Base Pension Based on Age and Service

Attained Birthday	Years of Service Credit	Percentage of Base Pension Amount
65	30 or more	100%
64	--	97%
--	29	95%
63	--	94%
62	--	91%
--	28	90%
61	--	88%
60	27	85%
59	26	80%
55 thru 58	25	75%

Note: Retrieved from <http://www.opers.org/member/traditional/benefits/index.shtml>

Ohio employees had the option of participating in a defined contribution plan rather than the defined benefit plan, or a combination of the two plans together. The defined contribution plan was subject to IRS rules for retirement and annuity collection (Member Handbook, n.d).

The Wisconsin Retirement System.

There were three Air National Guard bases in Wisconsin that have state civil service firefighters. They were located in Madison, Milwaukee and Camp Douglas. The Wisconsin civil service firefighters were members of the Wisconsin Retirement System (WRS) that was administered by the Department of Employee Trust Funds (ETF) (B. Brittenhouse, personal communication, May 18, 2004).

The Wisconsin Retirement System (WRS) contains two distinct retirement benefit plans:

A money purchase retirement plan

A formula benefit retirement plan

The money purchase retirement plan guarantees that your retirement benefit will never be less than the annuity provided by an amount equal to your required contributions with interest, plus an equal amount of employer contributions with interest. Therefore, your employer will pay for at least one-half the total cost of your retirement benefit.

The formula benefit retirement plan pays retirement benefits based on your final average earnings, a formula factor based on your employment category(ies) years of creditable WRS service, age at retirement and annuity option selected.

Your retirement benefit will be calculated under both plans and based on the plan that provides you with the higher benefit. (Your Retirement Handbook, 2002, p. 2)

The money purchase retirement plan included an employee and employer mandatory contribution to the WRS. Firefighters were considered a protected class within the WRS and had an option of contributing as a protected class with or without a Social Security benefit. Members opting for the Social Security benefit would contribute 4% of their gross salary while those without the Social Security benefit would contribute 3% (Your Retirement Handbook, 2002, p. 4). The mandatory employer contribution varied as well. Within the money purchase retirement plan,

There is no minimum age for a distribution. However, if you terminate WRS participation prior to age 55, you may be subject to an early distribution penalty if

you receive your balance before you attain age 59 ½. You should contact a tax advisor for more information regarding this potential tax penalty. (Your Retirement Handbook, 2002, p. 7)

The formula benefit retirement plan included an age and service requirement. Wisconsin firefighters are a Protective Occupation Employee, therefore, the minimum retirement age is 50 years old. This was the earliest that an employee could begin to collect a retirement annuity, however, the annuity would be reduced. For a normal non-penalized annuity, an employee with less than 25 years of creditable service may retire at the age of 54, and an employee with more than 25 years of creditable service may retire at the age of 53. (Your Retirement Handbook, 2002, p. 12)

If you retire before your normal retirement age, your annuity is reduced by a small percentage for each month between your actual age and your normal retirement age. Prior to age 57, the reduction is 0.4% per month (4.8% per year). Beginning with age 57, the reduction is less than 0.4% per month, depending on your number of years of creditable service. For non-protective employees with at least 30 years of creditable service, the actuarial reduction at age 57 is zero. (Your Retirement Handbook, 2002, p. 12)

If you were actively employed under the WRS after 1999, the maximum formula retirement benefit limit is 70% of final average earnings for all employment categories except the protective categories. The maximum formula benefit remains at 65% of final average earnings for protective category employees covered under Social Security, and at 85% for protective employees

not covered under Social Security (fire fighters). (Your Retirement Handbook, 2002, p. 16)

Assuming you have reached normal retirement age, the formula benefit annuity would be the lower of the following two calculations:

- Monthly final average earnings x formula multiplier (0.01765, 0.02165 or 0.02665) x years of creditable service prior to 2000, plus monthly final average earnings x formula multiplier (0.016 or 0.020 or 0.025) x years of creditable service after 1999 = monthly annuity
- Monthly final average earnings x 70% (65% for protectives with Social Security and 85% for protectives without Social Security) = maximum formula benefit payable. (Your Retirement Handbook, 2002, p. 16)

Indiana, Illinois, Ohio and Wisconsin pension systems had unique provisions for firefighters. The State of Michigan pension system that firefighters participated in did not include unique provisions for them. There were several pension systems within the state which contain various qualification requirements and pension calculations.

Pension System within the State of Michigan

The State of Michigan had three retirement systems that covered various job classes within the state. A literature review was conducted to find answers to question 3, what, if any, are the retirement systems currently in place for State of Michigan Employees. The three retirement systems were the State Employees Retirement System, State Police Retirement System and Public School Employees Retirement System. The Fire Crash Rescue Officers were members of the State Employees Retirement System. This system contained a defined benefit and a defined contribution system. All

employees hired after March 31, 1997 were enrolled in the defined contribution plan and were not eligible for the defined benefit plan. This literature review looked at documentation for both plans.

The State Employees Retirement System.

The State Employees Retirement system was created in 1943 with the passing of Public Act 240 of 1943, as amended (Michigan Compiled Laws 38.1 et seq.). Under the defined benefit system employees could retire when:

Sec. 19. (1) A member who is 60 years of age or older and has 10 years of credited service or a member who is 60 year of age or older and has 5 or more years of credited service . . .

(2) A member who is 55 years of age or older, but less than 60 years of age, and has 15 or more years of credited service, may retire...Except as otherwise provide in this act, the retirement allowance of a member who has less than 30 years of credited service shall be reduced by an amount that is 0.5% of the retirement allowance multiplied by the number of months the person's age at retirement is under 60 years . . . (Section 38.19, p. 17)

The computation of the basic annuity was calculated by multiplying 1.5 % of the individual's final average pay by total years worked (Section 38.20, p. 27).

Public Act 240 of 1943 had been amended seven times to provide limited period application times for early retirements to reduce the number of state employees (Sections 38.19 b-g and 38-19i, pages 21 -28). Another amendment was for the conservation officer job class (Section 38.48, p. 44). This amendment established the conservation officer's pension annuity at 60% of their final average compensation.

The defined contribution program was added to Public Act 240 of 1943 as an amendment in 1996 with an effective date of March 31, 1997 (Section 38.1i, page 4). The defined contribution program was initially referred to as the Tier 2 program. Current employees, including the conservation officers, were given an opportunity to make a one-time selection to terminate from the Tier 1 program and elect to become a member of the Tier 2 program (Section 38.50, p. 45). Contributions to the account are made by both the employer and the employee, if the employee elects to (Section 38.63, p. 52).

Sec. 63. (1) This section is subject to the vesting requirements of section 64.

(2) A qualified participant's employer shall contribute to the qualified participant's account in Tier 2 an amount equal to 4% of the qualified participant's compensation.

(3) A qualified participant may periodically elect to contribute up to 3% of his or her compensation to his or her Tier 2 account. The qualified participant's employer shall make an additional contribution to the qualified participant's Tier 2 account in an amount equal to the contribution made by the qualified participant under this subsection.

(4) A qualified participant may make contributions in addition to contributions made under subsection (3) to his or her Tier 2 account as permitted by the state treasurer and the internal revenue code. The qualified participant's employer shall not match contributions made by the qualified participant under this subsection. (Section 38.63, p. 52)

Employees could receive distributions of the balance of the account when they are no longer a qualified participant. At that time, the employee could elect a lump sum payment or periodic distributions as authorized by the State Treasurer. Any distribution would need to be consistent with Internal Revenue Service rules for deferred compensation programs (Section 38.67, p. 53).

The Michigan State Police Retirement System.

The Michigan State Police Retirement System was a defined benefit plan. The System operated under Public Act 182 of 1986, as amended (Michigan Compiled Laws 38.1601 et seq.). This system was: “A Michigan state police retirement system is created for the state police officers who have subscribed to the constitutional oath of office” (Section 38.1605, p. 2). Eligibility for retirement in this system is:

Sec. 24 (1) A member who has 25 years or more of credited service under this act or former Act No. 251 of the Public Acts of 1935, or both, may retire upon his...desires to retire. However, a member who becomes 56 years of age shall retire. A member retiring under this subsection shall be entitled to receive a retirement allowance equal to 60% of his or her final average compensation. (Section 38.1624, p. 7)

Final average compensation means the average annual salary for the last 2 years of service with the department of state police for which the member was compensated as defined in subsection (10). . . . (Section 38.1603, p. 1)

Members who retired with more than 10 years service, but did not meet the 25 year service requirement may elect to take a lump sum payment of all employee contributions to the account or take a deferred retirement. The calculation for the annuity

was 2% of the member's final average compensation times the number of years worked. The member could not collect the annuity before the age of 60 (Section 38.1630, p. 9).

The Public School Employee Retirement System.

The Michigan Public School Employee Retirement System was a defined benefit system. It operated under the provisions of Michigan's Public Act 300 of 1980, as amended (Michigan Compiled Law 38.1301 et seq.). The act provided several eligibility requirements for retirement.

Sec. 81. (1) A member who is no longer working as a public school employee or in any other capacity for which service credit performed in this state is allowed under this act...to a retirement allowance...if 1 of the following applies:

(a) The member is 55 years of age or older and has 30 years of credited service as provided under this act of which at least 15 years were served as a public school employee.

(b) The member is 60 years of age or older and has accumulated 10 or more years of credited service as a public school employee.

(c) The member is 55 years of age or older and has 15 or more years of credited service, but less than 30 years of credited service of which the last 5 consecutive years are immediately preceding the member's retirement allowance effective date. (Section 38.1381, p. 29)

Annuity calculations were based on years of service, final average compensation and a multiplier of 1.5%.

Sec. 84. (1) Except . . . a member shall receive a retirement allowance that equals the product of the member's total years, and fraction of a year, of credited service multiplied by 1.5% of the member's final compensation. A member shall not be allowed to use more than 15 years out of system public education service, or more out of system public education service than service performed under this act...

(2) If a member having less than 30 years credited service retires before the member's sixtieth birthday as provided in section 81, the member's retirement allowance provided in subsection (1) shall be reduced $\frac{1}{2}$ of 1% for each month, and fraction of a month, within the period from the effective date of the member's retirement to the date of the member's sixtieth birthday, and shall continue at the same percentage after becoming 60 years of age. (Section 38.1384, p. 30)

The Public Act 345, Fire Fighters and Police Officers Retirement Act.

While reviewing literature for pension systems currently in use for State Civil Service Employees, a Michigan Public Act titled *Fire Fighters and Police Officers Retirement Act* was found. The Public Act 354 of 1937, as amended (Michigan Compiled Law 38.551 et seq.). The act is:

AN ACT to provide for the establishment, maintenance and administration of a system of pensions and retirements for the benefit of personnel of fire and police departments employed by cities, villages, or municipalities having full paid members in the departments . . . (Preamble, p. 1)

Within this act, age and service requirements for qualification included a mandatory retirement provision and an additional possibility of retiring and receiving an annuity at ages younger than fifty with 25 years of service.

Sec. 6. (1) Age and service retirement benefits payable under this act are as follows:

(a) A member who is 55 years of age or older and who has 25 or more years of service as a police officer or fire fighter in the employ of the municipality affected by this act may retire from service upon written application to the retirement board. . . Upon the approval of the legislative body or the electors of a municipality under this act, a member under 50 years of age who has 25 or more years of service, or without the necessary approval, a member 50 years or more who has 25 or more years of service, may leave service and receive the full retirement benefits payable throughout the member's life as provided in subdivision (e). (Section 38.556, p. 2)

(b) "A member who is 60 years of age or older shall be retired by the retirement board upon written application of the legislative body, or board or official provided in the charter of the municipality as the head of the department in which the member is employed. . . . (Section 38.556, p. 2).

Calculating an annuity payment within this system used a variable multiplier of the final average compensation multiplied by the years of service. The calculation changes if the member has over 25 years of service.

(e) Upon retirement from service as provided in this subsection, a member shall receive a regular retirement pension payable throughout the member's life of

2% of the member's average final compensation multiplied by the first 25 years of service credited to the member, plus 1% of the member's average final compensation multiplied by the number of years, and fraction of a year, of service rendered by the member in excess of 25 years. . . .

(f) As used in this section, "average final compensation" means the average of the highest annual compensation received by the member during a period of 5 consecutive years of service contained within the member's 10 years of service immediately preceding the member's retirement or leaving service. However, if so provided in a collective bargaining agreement entered into between a municipality under this act and the appropriate recognized bargaining agent, average final compensation may mean the average of the 3 years of highest annual compensation received by a member during the member's 10 years of service immediately preceding the member's retirement or leave service. . . . (Section 38.556, p. 3)

Early retirement was not permitted under this system. "If the fire fighter or police officer becomes separated from the service before being eligible for retirement, the member shall be paid the total member's contributions together with interest as the board may determine, but not to exceed 2% per annum . . ." (Section 38.558, p. 8).

The pension system alone was not the only issue to affect firefighters. Pension systems are a mechanism to provide adequate income during the later stages of life after employment ends. Firefighters are subject to many external factors that could force early retirements despite not have enough service time or being old enough to qualify for an

adequate pension. Firefighters may not be in control of their own ability and desires to work.

What Pension System Will Work?

A literature review of the material relevant to question 4; what, if any, retirement system will best support the National Fire Protection Association and military medical and fitness requirements that Fire Crash Rescue Officers must meet in the State of Michigan was an extensive review of military and civilian rules, regulations and codes. A literature search was accomplished to determine the standards that are applicable to the Fire Crash Rescue program. This search began with the Department of Defense guidelines that were used to establish the Fire Crash Rescue positions within the State of Michigan and the medical and physical requirements. It became apparent that additional information would be helpful that described the concepts, implementation and application of pension systems for firefighters, and the health and fitness standards that had influence on retirement issues.

The Military and Civil Service Fire and Emergency Services Program.

The Fire and Emergency Services program (F&ES) was established to provide fire protection to military installations across the country. Therefore, a review of the literature that details the creation of the Fire Crash Rescue program started with the Department of Defense Fire Emergency Services program. Department of Defense Instruction 6055.6, *DoD Fire and Emergency Services Program* (2000), despite being an updated edition from the one that was in place at the inception of the Michigan Civil Service Fire Crash Rescue Officers, directs the activities of fire protection. The DoD required all DoD components to establish and maintain an installation F&ES program on

each installation (p. 2). Each head of the DoD Components was given the responsibility to “Establish and maintain programs that conform to the requirements and procedures specified in the instruction.... Provide management support, resources, and professionally qualified F&ES staff to ensure effective implementation of such programs at all organizational levels” (p. 3). The Secretary of the Air Force was tasked with implementing and maintaining a DoD Firefighter wellness program for all DoD components that is “consistent the NFPA 1500, *Standard on Fire Department Occupational and Health Program*” (p. 4). No edition of the standard was cited. The DoD adopted many codes and standards by reference without citing specific editions.

DoD F&ES shall comply with the standards outlined in relevant standards promulgated by the Department of Labor-Occupational Safety and Health Administration (OSHA), the National Fire Protection Association (National Fire Codes), MIL-HDBK 1008 Series, the Commission on Fire Accreditation International (Self Assessment Manual), (references (c), (f) and (i)), and other fire safety criteria published by the Department of Defense. (p. 9)

The age of firefighters was addressed in DoD 6055.6, *DoD Fire and Emergency Services Program* (2000) as requiring DoD components to follow DoD Directive 1402.4, *Entry Age for Selected Firefighter and Law Enforcement Officer Positions*, (1998). This directive established the maximum age of 35 for entry into the firefighter and law enforcement positions. This provision specifically applied to federal civil service firefighters covered under Title 5 of the United States Code (p. 1).

It is the DoD policy to apply a maximum age standard of 35 years to individuals entering firefighter and law enforcement officer occupations officially identified

by the Secretary of Defense or the Deputy Secretary as being sufficiently rigorous that employment opportunities in these positions are limited to young and physically vigorous individuals. (p. 1)

Physical and medical requirement guidance was addressed in the DoD 6055.6, *DoD Fire and Emergency Services Program* (2000). DoD components were directed to include medical and physical programs that are consistent with NFPA 1500, *Standard on Fire Department Occupational and Health Program* and NFPA 1582, *Standard on Medical Requirements for Fire Fighter* (p. 16). Once again, there was no reference to the edition of the standard that must be followed.

The National Guard Bureau, developed NGR 5-1/ANG Instruction 63-101 (2002) to provide states with the guidelines that the fire protection program must meet. Chapter 36 of this document provided guidance for the administration of Air National Guard Fire Protection Activities and authorized 100% federal funding to the states for the programs (p. 36-1).

Health and fitness issues were addressed as authorized charges in which medical charges included personnel participating in the Occupational Safety and Health program and in particular, NFPA 1500, *Fire Department Safety and Health Program*. No edition of the standard is cited. However, in reviewing the referenced material at the end of the document, multiple references were listed including DoD 6055.6, *DoD Fire and Emergency Service Program*, (latest edition), NFPA Std. 1500, *Fire Department Safety and Health Program* (latest edition), and NFPA 1582, *Standard on Medical Requirements for Fire Fighters* (latest edition) and others (p. 36-8).

National Guard Regulation 5-1/ANG 63-101 established the requirement on each state to meet National Fire Protection Association Standards (NFPA) as directed by the Department of Defense, United States Air Force and Air National Guard. The military had already adopted the NFPA standards to a very high degree and expected the most current standard to be implemented. For the purposes of this research, National Fire Protection Standard 1500, *Fire Department Safety and Health Program* (2003) and NFPA 1582, *Standard on Comprehensive Occupational Medical Program for Fire Departments* (2003) [sic] were the most significant. The title of NFPA Std. 1582 had changed with the newest edition.

An Overview of Pension Systems.

Pension systems were typically either defined contribution system or defined benefit systems. Both systems could have donations made by employers and employees alike. Defined benefit systems were obligated to pay out a guaranteed amount at the time of retirement. Defined contribution systems were dependent on the performance of retirement investments or funds (Managing Fire Services, 1988; The Fire Chief's Handbook, 2003).

The National Association of State Retirement Administrators published works titled *Myths and Misperceptions of Defined Benefit and Defined Contribution Plans* (2002, updated 2003) which determined that defined contribution systems did not guarantee adequate funds will be available for retirement years (p. 10-11), therefore, defined benefit plans should constitute a basic retirement and defined contribution plans should only constitute a supplement to those plans (p. 1). This study primarily addresses

the defined benefit pension systems. The literature review for pension systems focuses on defined benefit systems.

Michael Bucci's (1992) research *Police and Fire Fighter Pension Plans* provides tremendous insight into those systems. Bucci's research concluded that:

Police and firefighters typically may retire with full pension benefits at a younger age and with less service than other private or public sector employees. In 1990, 15 percent of full-time police and firefighters covered by defined benefit pension systems were able to retire and receive full benefits after completion of 20 years of service regardless of age. (p. 37)

According to Bucci, these lucrative benefit packages were in exchange for the risky and stressful work of protecting lives and property. Since the fire service is a paramilitary organization, firefighters often were given a pension similar to those of the military. Also contributing to the lucrative packages was "the dangerous nature of the work and physical and mental demands" (p. 37). Packages were designed that firefighters could retire at an earlier age and receive annuities that were not reduced because of early collection. A great deal of the annuity formulas included provisions for higher percentages for each year of service (p. 38).

Bucci also determined that organizations were interested in keeping a young physically and mentally sound workforce. Bucci's own words further emphasized the health of the work force:

Police and firefighter pension plans, since their inception, have been modeled after military pensions. The fundamental concern of these plans is to keep the force youthful and physically and mentally sound by encouraging retirement at an

early age. This is achieved by keeping minimum age and service requirements for retirement low and allowing full benefits at an early age. . . . As mentioned earlier, a key component of police and firefighter pension plans is the provision for receipt of full benefits-known as normal retirement benefits-at a relatively early age. (p. 37)

Bucci introduced a concept to calculate the value of a pension. He used the term replacement rate to determine the value of a pension. Replacement rates are the percentage of income that an individual retains upon retirement. It is determined by calculating the average of the maximum benefit in each retirement plan using an identical wage and years of service. "The replacement rate represents the portion of a participant's final year's earnings that is replaced by the retiree's pension" (p. 38).

While lucrative packages seem good, they are not without controversy. These packages have been challenged. The results have created some legal foundations for allowing pensions for firefighters to be different than that of fellow employees in the same organization. In the court case *Erie City Retirees Association v. City of Erie* (1990), the Erie City Retirees Association alleged that the city was treating retirees unfairly by providing three different pension benefit systems for employees. The plans were different for firefighters, police officers and non-uniformed employees. The court ultimately dismissed the case stating:

The city had a legitimate interest in differentiating between the three groups by occupation, since it may be difficult to recruit and retain firefighters and police officers because of the dangerous nature of these jobs without inducement of better retirement benefits. There was a rational relationship between the

classification and the city's legitimate interest in providing police and firefighting protection for its citizens. The pensions made it easier to employ such workers.

(Erie City Retiree Association v. City of Erie, (1990)

The Wisconsin Retirement Research Committee had been conducting comparisons of retirement systems throughout the country since 1992. A review of the document titled *2000 Comparative Study of Major Public Employee Retirement Systems* (2000) was conducted. This study emphasized retirement programs for general employees and teachers. It reviewed 85 public employee pension plans with at least one from every state (p. 1).

The Wisconsin study provided details on normal and early retirement provisions, contribution and vesting requirements, retirement benefit calculations, post-retirement adjustments and taxes, and actuarial and accounting information for each of the 85 plans studied. Nation wide trends of pension systems were identified within each section of the document. Nearly all of the plans in the study were defined benefit plans that required an age and years of service requirement to qualify for pension benefits (p. 5).

This review revealed that age and service requirements in various systems were determined in a multitude of ways. Many of the public systems have adopted a minimum service years and out system. This system simply allowed an individual to retire after completing only a service requirement with no minimum age necessary to retire (p. 5). Other systems utilized the "Rule of Y" (p. 6) system which required a combination of years of service and an age to equal a predetermined number with the most common being 80. This number was up from the previous study. Despite the rule of Y provision,

most plans incorporated a minimum retirement age requirement of 55 (p. 5) There were trends developed from this the 2000 study.

The 2000 study indicates a resumption of a trend noted in previous studies to permit normal retirement at earlier ages – particularly for career employees with long service. Since the 1996 study, 35 plans have reduced their normal retirement provisions by reducing the minimum age or the number of years of service required, or both. (p. 5)

Another method of increasing benefits identified in the Wisconsin Study (2000) was by raising the formula multipliers. This was the amount multiplied by the years of service to determine the percentage of the Final Annual Compensation that employee will receive as an annual annuity. The trend in this area indicated that the multiplier had continued to rise since 1996 with 32 of the 85 plans increasing the multiplier (p. 14). The Current average multiplier across the country was 1.84% (p. 14).

While the Wisconsin study provided a plethora of information on pension systems, it did not address possible special provisions that may be included in each plan for law enforcement, firefighters or other public safety officials. These provisions were discovered in literature associated with each individual plan. The Wisconsin study did provide an analysis of general trends in employee benefits which could be reflected to those law enforcement, firefighter or other public safety officials pension systems as well.

Mandatory retirement provisions versus firefighter fitness testing.

A review of literature on pension systems forced the author in a direction that was not initially anticipated. The concepts mandatory retirement and firefighter fitness seemed to be relevant to the discussion of firefighter pension systems.

The Age Discrimination in Employment Act (ADEA) (29 U.S. Code, Section 621) was passed in 1967. The act initially prohibited discrimination on the basis of age against all persons age 40 and over. However, in 1986, Congress amended the act to allow state and local governments to implement mandatory retirement ages for firefighters, police officers and correction officers. A review of the Fire Chief's Handbook (2003) gave a slight history on the initial act as well as follow on amendments and court cases that supported the exemptions and allowed mandatory retirement ages and minimum hiring ages to be established.

The Age and Discrimination in Employment Act (ADEA) (29 U.S. Code, Section 621) was enacted and argued on the federal congressional and courts on multiple occasions, however it had relatively little impact on the State of Michigan. Since Michigan was a sovereign state, the ADEA did not apply. Sovereign states were allowed to implement their own rules and regulations regarding ADEA, subsequently, the states have experienced legal issues regarding age discrimination. (Fire Chief Handbook, 2003)

Despite the applicability to the State of Michigan, the ADEA arguments are relevant to the issues. A review of the Hearing of the Committee on Labor and Human Resources United States Senate regarding Age Discrimination in Employment Amendments of 1995 produced much testimony on using mandatory retirement ages to ensure that the public's safety was preserved by maintaining a young work force. In testimony, Dr. Loren Myhre stated in the congressional hearings:

I think the age factor has to go away some time-and I keep saying that –but not today, because right now, the probability of a fire fighter of 55 being able to perform successfully is so low that it would jeopardize the safety of the people he

is supposed to help. (S.553 and H.R. 849:Age Discrimination in Employment Amendments of 1995, March 8, 1996)

Contrary testimony made by Dr. Frank J. Landy in an effort to eliminate the ADEA exemption emphasized that age itself should not be a factor in determining the fitness of a firefighter and therefore should not be the determining factor in mandatory retirement conditions. There are many other factors including lifestyle, illness and injury that affect the fitness of the firefighters (p. 43). Dr. Frank further went on to conclude that:

It is our belief that not only the public safety is not jeopardized by the elimination of that exemption, but also that the increase in the experience base and the protection of the rights of additional workers actually add to the public good. (p. 43)

The final outcome of the senate hearing resulted in the exemption being renewed and allowing state and local governments to establish mandatory retirement ages as they see fit. However, the debates continued. The literature review for this research identified several studies conducted in the same time period of the congressional hearings.

One such study, *Are the Job Demands on Physical Work Capacity Equal for Young and Aging Firefighters?* (1994). Lusa, Sirpa, Louhevaara, Veikko, Kari and Kinnunen (1994) found:

In the near future, about 40% of the work force in the Organization of Economical and Cooperative Development countries will be between 45 and 65 years, and also the mean age of professional firefighters is rapidly increasing. This trend will be accentuated, if the retirement age of firefighters is raised from 55 to 65 years. .

. . This is a great challenge for the authorities which are responsible for the safety, health and work ability of firefighters. . . . In conclusion, this study suggests that the job demands on physical work capacity remain equal throughout the firefighters career. (p. 73-74)

In another, *Implementing Health and Fitness Programs for Firefighters* (1996)

Joan E. Pynes writes:

In preparation for the review, the EEOC contracted with the Center for Applied Behavioral Science (CABS) at Pennsylvania State University to determine if public safety would be compromised by barring mandatory retirement based on chronological age for public safety jobs. The investigation revealed that age is a poor predictor of job performance among public safety officers. (p. 1)

Saupe, K; Sothmann, M.; and Jasenof D. (1991) conducted research and published findings in support of mandatory retirement ages.

This case study of a large metropolitan fire department illustrates the complexity of the mandatory retirement age issue faced by municipalities. These data suggest that substantial age associated declines do occur in the health and physical fitness of fire fighters, although these declines are not necessarily age dependent.

Although fitness standards have been advocated as an alternative to mandatory retirement ages, the data presented here demonstrate that using published recommendations as standard for the aerobic fitness of fire fighters would have an “adverse impact” on a large segment of the existing work force. . . . Lowering standards to avoid adverse impact is legitimate only if public safety is not compromised. Our data suggests that any consideration of a shift in national

policy away from mandatory retirement ages should be accompanied by an in depth examination of the feasibility of developing and implementing medical and fitness standards at the municipal level, and clarification of the controversial issue of whether fitness standards that have adverse impact on certain groups are necessary to maintain public safety. (p. 1194)

A review of the study by the United States Fire Administration titled, *USFA Firefighter Fatality Retrospective Study: 1990-2000* (2002) provided some relevant material that related firefighter death and injury to the age factor.

Nature of Fatal Injury — The leading nature of fatal injuries to firefighters is heart attack (44 percent); trauma, including internal and head injuries, is the second leading type of fatal injury at 27 percent. Asphyxia and burns combined account for 20 percent of fatalities. More firefighters die from trauma than from asphyxiation and burns combined. (p. 1)

Firefighters under the age of 35 are more likely to be killed by traumatic injuries than they are to die of medical causes (e.g., heart attack, stroke). After age 35, the proportion of deaths due to traumatic injuries decreases, and the proportion of deaths due to medical causes rises steadily. (p. 1)

Age- approximately 60 percent of firefighter fatalities were over the age of 40 when they were killed, and one-third were over 50. Nationally, firefighters over the age of 40 comprise 46 percent of the fire service, with those over 50 accounting for only 16 percent of firefighters. Although older firefighters possess a wealth of invaluable knowledge and experience, they are killed while on duty at a rate disproportionate to their representation in the fire service. Also, these older

firefighters tend to be affiliated with volunteer agencies. About 40 percent of volunteer firefighters are over the age of 50, compared to only 25 percent of career firefighters. (p. 2)

The National Fire Protection Association collects data on firefighter fatalities annually and publishes the findings. The NFPA Journal published the research of Fahy and Leblanc (2003), *Firefighter Fatalities in the United States 2003* (2003) which found that many of the same factors that the United State Fire Administration study found were relevant in 2003.

Heart attacks account for a higher proportion of the deaths among older firefighters, as might be expected. Two thirds of the firefighters over age 50 who died in 2003 died of heart attacks. The youngest heart attack victim was 35 years old. . . . The rate of fire fighters in their fifties is two-thirds higher than the average and for firefighters age 60 and over, it is almost four times the average. Firefighters over age 50 accounted for two-fifths of all firefighter deaths over the fire year period although they account for less than on-sixth of all firefighters. (p. 47)

In 2003, the number of heart attack deaths was quite a bit higher than in 2002, and almost 10 percent higher than the most recent 10-year average. Unfortunately, on-duty heart attacks appear to be at a plateau of approximately 43 per year. Although that is an improvement over the average 10 years ago (51 deaths per year), there hasn't been any sustained improvement since 1992. We consistently find that approximately half of the victims of fatal heart attacks had had prior heart attacks or bypass surgery, and another third had severe

arteriosclerotic heart disease. Adopting and adhering to a comprehensive safety and health program could reduce these, and other on-duty fatalities. . . . (p. 51)

Persons with certain health-related problems should not be allowed to become firefighters and those who develop problems after they are firefighters should be carefully evaluated to be sure they are capable of continuing to perform firefighting and other emergency duties. Persons not physically fit or medically qualified pose a danger not only to themselves but to their fellow firefighters and the public as their sudden incapacitation can affect the success of a mission. (p. 51)

Firefighting is a dangerous profession, but a large portion of the on-duty deaths reported each year could be prevented. (p. 51)

The National Fire Protection Association Standards.

The National Fire Protection Association published several documents that were required to be followed by Department of Defense, United States Air Force and Air National Guard directives.

National Fire Protection Association Standard 1500, *Standard on Fire Department Occupational Safety and Health Program* (2003) began to implement medical and physical fitness requirements for the fire services. Chapter 10 of this document addressed medical and physical issues for firefighters and fire departments. Para. 10-1 in this chapter required personnel who engage in fire suppression to meet the medical requirements of National Fire Protection Association Standard 1582, *Standard on Medical Requirements for Fire Fighters and Information for Fire Department*

Physicians (latest edition)[sic]. Para. 10-2 and 10-3 institute Physical Performance Requirements and Physical Fitness.

In the *NFPA 1500 Handbook* (1993), which was actually written as supplementary material for the 1992 Edition of NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program*, significant supplementary material was available that appeared relevant for all editions of the standard. It was written that:

The selection of the fitness tests and the defining of satisfactory fitness scores are critical issues, since failure to achieve the minimum score will likely be interpreted as indicating that the fire fighter is not physically fit, resulting in duty restrictions. Currently, there is insufficient information to allow the use of fitness assessments (tests) as a predictor of an individual's successful fire fighting job performance. Nevertheless, NFPA 1500 requires that a "fitness standard" be defined and that individuals not meeting this standard be rehabilitated. (p. 410)

At this time, there are no clearly acceptable fitness standards. In fairness, it must be admitted that it is very difficult to design an appropriate standard. . . . In addition, such testing fails to measure other factors that affect job performance, such as recognition of hazards, training, and experience. (p. 411)

Thus, a physical standard that has disparate impact on any fire fighter, including women or older employees, would not be considered discriminatory if the employer could demonstrate that employees who could not meet the standard would have difficulty performing work safely and efficiently. (p. 412)

A review National Fire Protection Association Standard 1582 was attempted, however, the document name had change with the 2003 edition. The document was now titled, NFPA Std. 1582, *Standard on Comprehensive Occupational Medical Program for Fire Departments* and it provided data on frequency of medical physical assessments and physical fitness and fitness testing requirements for firefighters. With the 2003 edition, medical physical assessment became an annual requirement for all ages. Prior to this edition, medical evaluations were based on age with younger personnel completing an evaluation as infrequently as every three years. Physical fitness and fitness testing had been introduced as an annual requirement. Both, medical evaluations and fitness testing must be evaluated by a fire department physician.

The medical evaluation was “The analysis of information for the purpose of making a determination of medical certification. Medical evaluation includes a medical examination (p. 5). The medical examination will be performed by the fire department physician. At the completion of the examination, it is the fire department physician’s responsibility to inform the fire department chief “whether or not the candidate...is medically certified to perform the essential job tasks”. (p. 6) Medical conditions that would preclude a firefighter from continuing to perform his/her job duties are classified as Category A or Category B medical conditions.

6.2.1 Medical conditions that can affect a candidate’s ability to safely perform essential job tasks shall be designated either Category A or Category B.

6.2.2 Candidates with Category A medical conditions shall not be certified as meeting the medical requirements of this standard.

6.2.3 Candidates with Category B medical conditions shall be certified as meeting the medical requirements of this standard only if they can perform the essential job tasks without posing a significant safety and health risk to themselves, members, or civilians. (p. 8)

The standard continued with a comprehensive review of the medical conditions that constitute the two categories. The standard also implemented an annual fitness evaluation in chapter 8. The evaluation included testing aerobic capacity, muscular strength, muscular endurance and flexibility.

Firefighters must have a certificate of fitness from the physician prior to performing fire ground activities. However, the fire department physician must recommend restricting member activities:

9.3.1 If an illness, injury, or other debilitating condition has altered a member's ability to safely perform an essential job task, the fire department physician shall notify the fire department that the member is restricted from performing that task while on duty. (p. 15)

Summary of the Literature Review

In summary, a review of the available literature that related to questions 1 and 2 was very straight forward as it identified existing pension systems for federal and state civil service firefighters. *United States Code Title 5* (1966) outlined the pension provisions for federal firefighters and established mandatory retirement ages as well as maximum hiring ages. The existing pension systems for four states neighboring Michigan included a review of Indiana, Illinois, Ohio and Wisconsin pensions systems that similar

civil service firefighters participate in. The variance of the systems was wide with each presenting unique service requirements and calculations for a final annuity.

A review of the available literature that related to question 3 is again, very straight forward. The State of Michigan used three different retirement systems for various professions within the state. Two of the systems strictly impacted civil service firefighters. The State Employees Retirement System was the largest of the systems. Prior to 1997, all employees participated in the defined benefit program. After 1997, the state added a defined contribution program and required all new employees to enroll. The defined benefit system was no longer available to new employees. Existing employees were given a one time opportunity to convert to the defined contribution system. The State Police Retirement System was a defined benefit system and included provisions for mandatory early retirement and annuity collection. The final pension system that was administered by the State of Michigan is the Public School Employee Retirement System. This was a defined benefit system designed for teachers and school administrators within the State of Michigan. Individuals who participated in this system were not state civil service employees, but were employees of local school districts, colleges and universities.

The review of the literature for question 3 also revealed the existence of Public Act 345, *Fire Fighters and Police Officers Retirement Act (1937)*, which the State of Michigan adopted giving local municipalities the authority to establish pension systems for firefighters. This act allowed mandatory retirement ages to be established and exempted firefighters from paying social security taxes in lieu of a higher annuity multiplier in determining the final average compensation.

A review of literature for question 4 became long and in-depth. Since the availability of literature to directly answer this question was limited, and the final answer was dependant on the research of this author, other relevant issues were researched, including a review of history, theory and development of pension systems for firefighters. This author felt it important to determine the rational behind pension systems for firefighters. This review of pension system objectives for firefighters led to the question of how to maintain a fit and safe work force. Various documents were introduced with different views on health and fitness with age becoming a significant factor in both. The National Fire Protection Standards and Federal Age Discrimination laws were reviewed to determine how the firefighter profession was working to maintain a fit work force. Finally, a review of literature that established and governed the Fire Crash Rescue Program was conducted and documented.

Procedures

The purpose of this research project was to identify pension systems that would allow the State Civil Service program of Michigan to hire, employ and retire firefighters that meet National Fire Protection Association and United States military requirements for health and fitness standards. The purpose of this research was to identify one or more pension systems that exist within the State of Michigan that would provide adequate benefits for firefighters that may be forced to retire at an early age.

This author utilized action and historical methodologies to complete the research for this paper. A historical methodology was taken in this research as literature was reviewed to develop an understanding of the history and trends of pension systems for firefighters. A review of legal documents, including public acts and laws, to identify

limiting factors in the establishment and administration of pension systems for firefighters was conducted. Finally, a review of the establishment of the Crash Fire Rescue Program within the State of Michigan was conducted to provide insight into the events and decisions that influenced the present conditions and future events that may be associated with the existing pension systems.

The research was also contained an action methodology in the fact that a recommendation to solve an existing problem will be presented. An evaluation of the historical data and comparison of existing pension systems against the requirements of Department of Defense, State Civil Service and nationally recognized standards provided by the National Fire Protection Association will identify an existing problem and provide a recommendation to enhance firefighter and public safety.

This research began with an informal interview of the key figures in the establishment of the Michigan Civil Service Fire Crash Rescue Program. A direct interview with Chief Master Sergeant (CMSgt.) Kenneth L. Shaw, who is the fire chief at the Battle Creek Air National Guard base, located at 3367 West Dickman Road in Battle Creek, Michigan was conducted. A telephone contact was made at (269)-969-3327 to set up the interview. During the initial interview, CMSgt. Shaw recommended follow-up discussions with Mr. Ken Holzman and Mrs. Gail Caldarea. Mr. Holzman is the Deputy Human Resources Director for State Operations in the Department of Military Affairs for the State of Michigan.

Mr. Holzman was located in the Department of Military Affairs building at 2500 South Washington Avenue in Lansing, Michigan. The telephone number called was

(517)-483-5699. His role in establishing the Fire Crash Rescue program was to facilitate labor and management coordination and ensure contractual agreements could be reached.

Mrs. Caldarea was the point of contact in the Classifications division of the Department of Civil Service. Her role was to assist in creating the job and position descriptions within the Department of Civil Service. Mrs. Caldarea was located at the Selfridge Air National Guard Base in Mt. Clemens, Michigan. Provided with her email address by Mr. Holzman, contact was made at gail.caldarea@miself.ang.af.mil.

Chief Master Sergeant Shaw and Mrs. Caldarea planned, coordinated and conducted the initial hiring of the Crash Fire Rescue Officers after the positions were established. Both individuals participated in the interviews and as observers for a physical agility test of the candidates.

The next step in the process was to review literature relevant to question 1. What, if any, are the Federal Retirement Systems for firefighters? An employee hand book was acquired from Technical Sergeant (TSgt.) Melissa Labruzzzy who was the Federal Civil Service personnel representative for the Battle Creek Air National Guard Base. The Civilian Personnel Office on the Battle Creek Air National Guard base was located at 3543 Mustang Avenue in Battle Creek, Michigan. Her telephone number was (269)-969-3415. TSgt. Labruzzzy recommended an additional contact be made to Mrs. Carol Wotring at (517)-483-5624 to discuss specific pension issues that may be in place for firefighters in the Federal Civil Service System. Mrs. Wotring was the representative of the Civilian Personnel Office in Lansing, Michigan. Mrs. Wotring provided valuable information regarding the special provisions for federal civil service pensions for firefighters and non-firefighters. She also made reference to the U.S. Office of Personnel

Management web site at <http://www.opm.gov> for employee information regarding the Federal Employees Retirement System (FERS). Mrs. Wotring also recommended using the US Code Collection web site that is established and maintained by the Legal Information Institute at <http://www4.law.cornell.edu/uscode/5/index.html>. This site provided specific wording of the Title 5 program elements.

The next step was to review literature relevant to question 2. What, if any are neighboring states doing for retirement systems for civil service firefighters on military bases? Gathering the information to determine what other states are doing for retirements started with a web search of state pension systems. Using the search engine at Google.com, the web site InvestmentSeek.com was located. InvestmentSeek.com contained pension plans and fund listings for every state. Some states contained multiple plans, therefore, telephone calls to bases located at Springfield, Illinois; Terre Haute, Indiana; Mansfield, Ohio and Madison, Wisconsin were made to determine which plans covered the firefighters in the respective states. Contact was made with a member of each fire department.

Mr. Jim Boyd was contacted at the 183rd Fighter Wing in Springfield, Illinois. The telephone number called was (217)-757-1290. Mr. Boyd provided limited information regarding the pension system. He referred me to the State of Illinois Retirement System web site at <http://www.state.il.us/srs> where I located employee handbooks and contact telephone numbers for the Office of Retirement services which I called for further explanation of specific provisions for the firefighter pensions.

Mr. Kim Maxwell was contacted at the 181st Fighter Wing in Terre Haute, Indiana at telephone number (812)-877-5216. Mr. Maxwell provided limited information

regarding the pension system. He referred me to the Public Employee Retirement Fund of Indiana web site at <http://in.gov.perf> where employee handbooks and contact telephone numbers for the Office of Retirement services which I called for further explanation of specific provisions for the firefighters pensions.

Mr. Rod Togliatti was contacted at the 179th Air Wing Mansfield, Ohio at telephone number (419)-521-0143. Mr. Togliatti provided limited information regarding the pension system. He referred me to the Ohio Public Employees Retirement System web site at <http://www.opers.org> where I located employee handbooks and contact telephone numbers for the Office of Retirement services which I called for further explanation of specific provisions for the firefighters pensions.

Mr. Bob Brittenhouse was contacted at the 115th Fighter Wing in Madison, Wisconsin at telephone number (608)-245-4561. Mr. Brittenhouse provided limited information regarding the pension system. He referred me to the Wisconsin Employee Trust Fund at <http://etf.wi.gov> where I located employee handbooks and contact telephone numbers for the Office of Retirement services which I called for further explanation of specific provisions for the firefighters pensions. The Wisconsin Employee Trust Fund website provided an unexpected number of web links, such as the National Association of State Retirement Administrators at <http://www.nasra.org> used by the author to become more versed in the retirement issues.

The next step was to review literature that was relevant to question 3. What, if any, are the retirement systems currently in place for State of Michigan Employees? Since this question was not specific to firefighter provisions and required a review of all pensions within the State of Michigan, all literature needed for this research was obtained

from the Office of Retirement Systems for Michigan web site. The retirement services web site contained links to handbooks and public acts for each of the three systems that were evaluated in this research. The web address is <http://michigan.gov/ors>. A follow up telephone call was placed to the Office of Management and Budget Retirement Services at (517) 322-6215 to get assistance in interpreting the provisions of the public acts that were obtained.

Finally, a pursuit of literature to answer question 4, What, if any, retirement system will best support the National Fire Protection Association and military medical and fitness requirements that the Fire Crash Rescue Officers must meet in the State of Michigan. This literature review was conducted through many avenues. Willard Library in Battle Creek, Michigan provided access to educational and professional research web sites. Extensive search for pension systems and firefighter fitness was accomplished using search databanks titled *SearchBank*, *Infotrac*, *Wilson Select*, *Article First* and *World Cat*. Sources that could be printed in full text were. Those that could not be directly printed were ordered through the inter-library loan system. Willard Library also provided access to the inter-library loan services to obtain copies of the materials that could not be found or copied through web access. Access to Willard Library sources was obtained by contacting the library office and getting an access code to enter the web site located at <http://www.willard.lib.mi.us>.

A search of these data bases started with the keywords of *firefighter pensions* and *firefighter retirements*. The data that was gathered focused on early retirements due to excessive physical demands on firefighters and public safety. This prompted a further search using keywords of *firefighter fitness*, *firefighter health* and *firefighter safety*. All

literature that was found has been evaluated in the literature review. Much of the data created additional questions regarding the correlation between age, fitness and retirements.

A return to the Battle Creek Air National Guard Base Fire Department was made. Additional information was obtained by retrieving reference documents and books such as *The Fire Chiefs Handbook*, *NFPA 1500 Handbook*, *Managing Fire Services* and the *National Fire Protection Association* standards. A review of firefighter medical and fitness standards that impact the State of Michigan Fire Crash Rescue Offices was accomplished.

In addition to the literature found on site that the Air National Guard Base, information was provided that lead to the review of Department of Defense directives and instructions. Literature regarding these directives and instructions was obtained by reviewing documents at the Washington Headquarters Service web site. The Executive Services & Communication Directorate, Directives and Records Division provided access to relevant material. The web site is located at <http://www.dtic.mil/whs/directives/>.

Through the literature review of these documents, the author formed a discussion of the material, and a recommendation that could ensure firefighters have the opportunity to retire with adequate benefits. Additionally, those retirements may come to firefighters based on age rather than years of service, thereby enhancing public safety.

Assumptions and Limitations

A significant limitation to this research was the lack of historical data on firefighter retirements within the State of Michigan Fire Crash Rescue program. The

program itself is young with the initial hiring taking place in 1991. As of the date of this research, only one employee had retired from the organization.

Another limitation is projecting accurate impacts on safety and fitness induced by age. Any statement of events that could potentially happen, such as degradation of public safety, is primarily speculative in nature and cannot be accurately detailed. Throughout the fire service there are examples of young firefighters having difficulty passing fitness tests and older firefighters that successfully complete such tests. Predictions of events occurring based on health and fitness can only be accomplished with generalities. These generalities will be met with exceptions found on many fire departments.

A relatively new trend is the increasing number of pension systems that included a defined contribution plan as an intricate part of the retirement. A limitation existed in trying to factor in these provisions. These plans cannot be factored into determining an appropriate retirement date. Internal Revenue Service requirements for collecting annuities is set at age 59 ½, however, an individual's decision to retire may very well be based on the amount of funds in the defined contribution system rather than health and safety.

Severe limitations existed within the fire protection community regarding what was an appropriate concept for the retirement of firefighters. The debate on using fitness or a mandatory retirement age continues with firefighters, doctors, professional firefighter organizations and lawyers taking both sides of the issue. Definitive answers to provide guidance were not available.

As a result of the limitations, one major assumption that was encountered during this research was that age is the best factor in determining retirement ages. Fitness testing

was gaining popularity, but very slowly. Finding an acceptable fitness test is difficult and subject to a large amount of debate.

The final assumption in this research was that public safety is affected by the age of a firefighter. Literature to support the concept was not clear or concise. The concept of public safety is based on having a young, healthy work force with a statistically low chance of firefighter death and injury during firefighting. While, statistically, older firefighters accounted for a disproportionately high number of deaths and injury, this could not easily be equated to a reduction of safety to fellow firefighters or the public.

Results

Research Question 1: What, if any, are the Federal Retirement Systems for Firefighters?

Federal Civil Service Firefighters participated in the Federal Employees Retirement System (FERS) established by Title 5 of the United States Code, *Government Organization and Employees* (1966). Retirement provisions for federal civil service employees were addressed in Title 5, Part III, Subpart G, Chapter 84, *Federal Employees Retirement System* (1986). The FERS system included a combination of a defined benefit and defined contribution pension system. Under the FERS system firefighters could retire after completing 25 years of service, or after completing 20 years of service and being over 50 years old.

The computation of the basic annuity was calculated by multiplying 1.7 % of the individual's average pay by total years worked, not to exceed 20 years. All years of service over 20 were credited by adding an additional 1% of the individual's average pay for every year over 20 (Section 8415).

The normal penalty for early annuity collection for federal civil service employees was a reduction of 5/12 of 1 percent for each full month that the annuity preceded the 62nd birthday of the employee. However, firefighters may collect an annuity anytime upon retiring after age 50 without a penalty being applied (Section 8415).

The Thrift Savings Plan was a defined contribution plan that was involuntary for the employee. Each pay period, the employer contributed an amount equal to 1% of the employee's pay period salary to the plan. In addition, the employee could contribute up to an additional 10% of their pay. If the employee elected to contribute additional funds, the employer would match the first 3% of contributions, the next 2% that the employee elected to contribute would be matched 50 cents to each dollar. The total contributions to this plan were subject to the Internal Revenue Service limits for tax-deferred contributions (Section 8432).

An employee may withdraw funds without penalty at the age of 59 ½ in accordance with Internal Revenue Service limitations. All annuities paid were subject to taxes at the time of distribution and if the funds were drawn prior to age 59 ½, a 10% early withdrawal penalty would be assessed (Section 8432).

The Federal Civil Service Retirement system also had a mandatory separation requirement for firefighters at the age of 57.

Research Question 2: What, if any, are neighboring states doing for retirement systems for Civil Service Firefighters on military bases?

The Illinois State Employees Retirement System.

The State Employees Retirement System (SERS) of Illinois included an alternative retirement formula that covered firefighters. The requirements for a pension

were age and service based, however, the Alternative Formula applied to members in certain positions with 20 years of alternative service. Members eligible for the alternative formula could retire at age 50 with 25 years of service, or at age 55 with 20 years of service (Your Rights & Responsibilities Handbook, 2001, p. 20).

The alternative retirement formula had two slightly different methods of calculating the annuity payment. The difference was based on the employee's decision to participate in social security. The final annuity was determined by multiplying the creditable service years and months multiplied by a multiplier and the final average compensation. The multiplier was 2.5% for employees covered under social security and 3.0% for those who were not (Your Rights & Responsibilities Handbook, 2001, p.20).

Firefighters were considered to be under the alternative formula for pension calculation. Employees covered by the alternative formula could not retire prior to age 50, therefore penalties for early annuity collection were not incorporated into the system.

The final average compensation was determined by using the two different rates of pay for the calculation. For an alternative formula employee, final average compensation was the rate of pay on the last day of employment, or the last 48 months of average compensation, whichever was greater. The benefit maximum was 80% of final average compensation. (Your Rights and Responsibilities Handbook, 2001, p. 20)

The Indiana Public Employees Retirement Fund.

The Public Employees Retirement Fund (PERF) of Indiana was comprised of a defined benefit and mandatory defined contribution system. The pension system age and service requirements followed a rule of 85 for those under the age of 60. An employee must have an age and years of service equal to age 85 to retire with unreduced benefits.

There were three minimum criteria to qualify for a full un-reduced retirement. They were all based on age and service time. The first was to be age 65 and have 10 or more years of service; second, age 60 and have 15 years of service; and third, be at least 55 and the sum of your age and years of service equal to 85.

The computation of the basic annuity was calculated by multiplying 1.1% of the individual's final average pay by years of creditable service (2002 Member Handbook, p. 6). Final average pay was equal to the highest five years of compensation (2002 Member Handbook, p. 7).

The Public Employees Retirement Fund did allow for an early retirement with a reduced pension. To qualify for an early retirement with a reduced pension an employee had to be between the ages of 50 and 59 with at least 15 years of creditable service. The amount of the reduction was based on the age at the time of annuity collection (2002 Member Handbook, p.28).

A separate annuity savings account was set up for the state civil service employees. The required contribution was 3% of an employee's gross wages. "Indiana law required the State of Indiana to pay the 3% contributions for state employees" (2002 Member Handbook, p. 17). Any annuity collection of the savings account that occurred prior to age 59½ may be subject to an additional 10% federal penalty (2002 Member Handbook, p. 41).

The Ohio Public Employees Retirement System.

The Ohio Public Employees Retirement System (OPERS) was comprised of a defined benefit plan and a voluntary defined contribution system. The qualifications for a

full unreduced retirement were 30 years of total service credit; age 55 with 25 years of total service; and age 60 with 5 years of service credit (Member Handbook, n.d.).

Ohio Public Employees annuity benefits were calculated by multiplying the years of total service credit by 2.2% of the final average salary for each of the first 30 years of total service credit. All years over thirty were multiplied by 2.5% of the final average salary. The final average salary was calculated as the members three highest years of annual salary (Member Handbook, n.d.).

Employees could retire as early as age 55 if they had 25 years of service. However, a reduced annuity benefit would be incurred. Employees with 30 years of service could retire and receive 100% of the basic annuity benefit. Employees with less than 30 years service would be penalized and receive only a percentage of the base pension amount as shown in Table 1 of the Literature Review section.

Ohio employees had the option of participating in a defined contribution plan rather than the defined benefit plan or a combination of the two plans together. The defined contribution plan was subject to IRS rules for retirement and annuity collection. Any annuity collection of the savings account that occurred prior to age 59½ would be subject to an additional 10% federal penalty.

The Wisconsin Retirement System.

Wisconsin civil service firefighters were members of the Wisconsin Retirement System (WRS). The WRS contained two pension plans that were used to determine final compensation. Benefits were calculated using both plans, and benefits were paid using the plan that provided the higher benefit.

The money purchase retirement plan included an employee and employer mandatory contribution to the WRS. Firefighters were considered a protected class within the WRS and had an option of contributing as a protected class with or without a Social Security benefits. Members opting for the Social Security benefit contributed 4% of their gross salary while those without the Social Security benefit contributed 3% (Your Retirement Handbook, 2002, p. 4). The mandatory employer contribution varied as well.

The money purchase retirement plan was a defined contribution plan. There was no minimum age for a distribution. Early retirement and withdrawal would be subject to IRS rules. An employee may be subject to an early distribution penalty if they received annuities before the age of 59 ½ (Your Retirement Handbook, 2002, p. 7).

The formula benefit retirement plan included an age and service requirement. Wisconsin firefighters were a Protective Occupation Employee therefore the minimum retirement age was 50 years old. This was the earliest that an employee could begin to collect a retirement annuity, but with a reduced annuity. For a full non-penalized annuity, an employee with less than 25 years of creditable service could retire at the age of 54; and an employee with more than 25 years of creditable service could retire at the age of 53 (Your Retirement Handbook, 2002, p. 12).

The formula benefit retirement used two methods of calculation to establish a benefit value. The first calculation used a two-step formula to establish the value. The formula used a different multiplier for years worked prior to 2000 and after 1999. The formula was the “monthly final average earnings x formula multiplier (0.01765, 0.02165 or 0.02665) x years of creditable service prior to 2000, plus monthly final average

earnings x formula multiplier (0.016 or 0.020 or 0.025) x years of creditable service after 1999 = monthly annuity” (Your Retirement Handbook, 2002, p. 16).

The second calculation used the “monthly final average earnings x 70% (65% for protectives with Social Security and 85% for protectives without Social Security) = maximum formula benefit payable” (Your Retirement Handbook, 2002, p. 16).

Once the two values are established, they are compared. The final formula benefit is the lower of the two values. There were maximum annuities under the program as well. The maximums were dependant on the when a person hired into the Wisconsin Civil Service program.

If you were actively employed under the WRS after 1999, the maximum formula retirement benefit limit is 70% of final average earnings for all employment categories except the protective categories. The maximum formula benefit remains at 65% of final average earnings for protective category employees covered under Social Security, and at 85% for protective employees not covered under Social Security (fire fighters). (Your Retirement Handbook, 2002, p. 16)

Earlier retirement was available under the Wisconsin system, with an associated penalty. The penalty for early retirement in the Wisconsin system was based on the age at the time of retirement.

If you retire before your normal retirement age, your annuity is reduced by a small percentage for each month between you actual age and your normal retirement age. Prior to age 57, the reduction is 0.4% per month (4.8% per year). Beginning with age 57, the reduction is less than 0.4% per month, depending on your number of years of creditable service. For non-protective employees with at

least 30 years of creditable service, the actuarial reduction at age 57 is zero. (Your Retirement Handbook, 2002, p. 12)

Research Question 3: What, if any, are the retirement systems currently in place for State of Michigan Employees?

The State of Michigan had three retirement systems that covered various job classes within the state. A literature review was conducted to find answers to question 3, what, if any, are the retirement systems currently in place for State of Michigan Employees. The three retirement systems were the State Employees Retirement System, State Police Retirement System and the Public School Employees Retirement System. The Fire Crash Rescue Offices were members of the State Employees Retirement System. This system contained a defined benefit and a defined contribution system. All employees hired after March 31, 1997 were enrolled in the Defined Contribution plan and were not eligible for the Defined Benefit plan.

The State Employees Retirement System.

The State Employees Retirement defined benefit system covered the majority of the Fire Crash Rescue Officers within the state. This system required an age and service requirement of 60 years of age or older and 10 years of service. In some cases an age and service requirement of 60 and 5 or more years of credited service qualified for benefits.

State Employees could retire prior to age 60 with reduced benefits. A member with 15 years of service and is over 55 years old could collect an early annuity. Members who collected an annuity between the ages of 55 and 60 were subject to penalties. The penalty was 0.5% of the retirement allowance multiplied by the number of months the person's age at retirement is under 60 years (Section 38.19, p. 17).

Annuity calculations were based on years of service, final average compensation and a multiplier of 1.5%. The computation of the basic annuity was calculated by multiplying 1.5 % of the individual's final average pay and the total years worked (Section 38.20, p. 27).

All employees hired after March 31, 1997 were forced into the defined contribution program and could not participate in a defined benefit plan. Contributions to the account were made by both the employer and the employee, if the employee elected to (Section 38.63, p. 52).

The State of Michigan contributed an amount equal to a minimum of 4% of the employee's wages. The employee could contribute up to 10% of their wages to the system. If the employee elected to contribute an additional amount, the State would contribute a matching amount up to 3% of the employee's wages.

Employees could receive distributions of the balance of the account when they were no longer a qualified participant. At that time, the employee could elect a lump sum payment or periodic distributions as authorized by the state treasure. Distributions would be consistent with Internal Revenue Service rules for deferred compensation programs (Section 38.67, p. 53).

The Michigan State Police Retirement System.

The Michigan State Police Retirement System was a defined benefit plan. The plan required a service qualification of 25 years of service. Troopers who achieved 25 years service would receive an annuity equal to 60% of their final average compensation. The final compensation was based on an average of the final two years of gross wages. This system also had a maximum employment age of 56 years old.

Members who retired with more than 10 years service, but do not meet the 25 year service requirement could elect to take a lump sum payment of all employee contributions to the account or take a deferred retirement. The calculation for the annuity was 2% of the member's final average compensation times the number of years worked. The member could not collect the annuity before the age of 60 (Section 38.1630, p. 9).

The Public School Employee Retirement System.

The Michigan Public School Employee Retirement System was a defined benefit system. The act provided several eligibility requirements for a full non penalized pension annuity. Age and service requirements were: 55 years old and 30 years of service; or 60 years of age with 10 years of service. A reduced annuity could be taken at the age of 55 with 15 years of service.

Annuity calculations were based on years of service, final average compensation and a multiplier of 1.5%. The computation of the basic annuity was calculated by multiplying 1.5 % of the individual's final average pay by total years worked.

Members could collect a reduced annuity if they retired before the age of 60. The annuity would be reduced by $\frac{1}{2}$ of 1% for each month, and fraction of a month, within the period from the effective date of the member's retirement to the date of the member's sixtieth birthday, and shall continue at the same percentage after becoming 60 years of age.

Research Question 4: What, if any, retirement systems will best support the National Fire Protection Association and military fitness requirements the Fire Crash Rescue Officers must meet in the State of Michigan?

This question allowed for a wide variety of material to be evaluated that presented impacts on firefighter pension systems. The results of the literature review for this question were focused on Department of Defense (DoD), United States Air Force (USAF), Air National Guard (ANG) and National Fire Protection Association Standards (NFPA). The issue of providing a pension system that supported United States military instructions and regulations, and the National Fire Protection Association Standards forced a review of the impact of mandatory retirement ages, physical fitness and health related materials.

Those plans that were either defined contribution or a combination of defined contribution and defined benefit were not reviewed heavily in this research. The National Association of State Retirement Administrators published works titled *Myths and Misperceptions of Defined Benefit and Defined Contribution Plans* (2002, updated 2003), which determined that the defined contribution systems do not guarantee adequate funds will be available for retirement years (p. 10-11), therefore defined benefit plans should constitute a basic retirement and defined contribution plans should only constitute a supplement to those plans (p. 1). This study only addresses defined benefit pensions system.

Much of the research findings indicated provisions to encourage the early retirement of firefighters was desirable for the safety of the public and the individual. Bucci's (1992) work indicated that firefighter pensions typically contained lucrative provisions that encouraged early retirement and produced high income recovery rates for those retirees. Those retirement systems were in exchange for the risky and stressful work that firefighters often encounter. These pensions closely matched those of the military.

Bucci also determined that organizations were interested in keeping a young, physically and mentally sound workforce. There seemed to be an emphasis on providing for retirements prior to degradation of skills and abilities needed to perform safely. Several other organizations had echoed these findings by enacting or adopting provisions that encouraged early exits from the work force.

The Department of Defense required Federal Civil Service firefighters to retire upon reaching the age of 57. Other provisions of the DoD included adherence to NFPA standards on medical and fitness requirements. Those requirements were emphasized at USAF, ANG and State Civil Service levels.

The State of Michigan recognized that some professions required a younger fit workforce. The Michigan State Troopers were assigned their own pension system that allowed for an early retirement with a high annuity rate. Troopers were forced to retire at the age of 56, while all other state employees must meet an age (60) and service (30 years) requirements.

The fitness issue appeared to be relevant to this author. While pension systems can easily provide early retirement provisions, they do not necessarily require retirement. A vast argument had raged for years on fitness versus age as trigger for retirement of firefighters. Organizations such as the NFPA were recommending fitness and medical requirements be used as a basis for continued employment as a firefighter, however, they could not impose pension system provisions that support the ideology. The requirements of the NFPA were changed more easily than pension systems.

The debate of age versus fitness had far reaching implications. Age discrimination laws that prohibited forced retirements were amended to allow governments to retain

mandatory retirement provisions based on age. Many law suits including congressional hearings were conducted on the issue (S.553 and H.R. 849: Age Discrimination in Employment Amendments of 1995, March 8, 1996). At the time of this research, those provisions were still in place.

A review of the history of the Age Discrimination in Employment Act (ADEA) (29 U.S. Code, Section 621) was passed in 1967. The act initially prohibited discrimination on the basis of age against all persons 40 and over. However, in 1986, Congress amended the act to allow state and local governments to retain mandatory retirement ages for firefighters, police officers and correction officers. A review of the Fire Chief's Handbook (2003) gave a slight history on the initial act as well as follow-on amendments and court cases that supported the exemptions and allowed mandatory retirement ages and minimum hiring ages to be established. Despite the federal level recognition of the ADEA, the State of Michigan was a sovereign state that was not mandated by the federal regulation. (Fire Chief's Handbook, 2003)

The United States Fire Administration and the National Fire Protection Association facilitated research on firefighter injury and fatalities. Two documents, *USFA Firefighter Fatality Retrospective Study: 1990-2000* (2002) and *Firefighter Fatalities in the United States 2003* (2003) provided information that indicated a higher percentage of firefighter death and injury are incurred by firefighters over the age of 50 than in other age groups.

The National Fire Protection Association Standard 1582, *Standard on Comprehensive Occupational Medical Program for Fire Departments* (2003) provided data on the frequency of medical physical assessment and physical fitness and fitness

testing requirements for firefighters. With the 2003 edition, the medical physical assessment became an annual requirement for all ages. Prior to this edition, medical evaluations were based on age with younger personnel completing an evaluation as infrequently as every three years. Physical fitness and fitness testing had been introduced as an annual requirement. Both, medical evaluation and fitness testing must be evaluated by a fire department physician.

Firefighters must have a certificate of fitness from the fire department physician prior to performing fire ground activities. Physicians must recommend restricting a members activities “if an illness, injury, or other debilitating condition has altered a member’s ability to safely perform an essential job task” (*Standard on Comprehensive Occupational Medical Program for Fire Departments* (2003), the fire department physician shall notify the fire department that the member is restricted from performing that task while on duty.

Typical mechanisms to ensure a young fit workforce through early retirements are minimal age requirements or minimal service requirements. Pension systems that emphasize early retirement had very small penalties, if any at all, for collection of annuities at an early age. Imposing mandatory retirement ages enabled firefighters in the federal system, and city level municipalities that have adopted Public Act 345, Fire Fighters and Police Officers Retirement Act, to retire at an age where health is still not a major cause for concern. Minimal service requirements had been implemented in the Michigan State Troopers pension system. Many of the systems had provisions for immediate annuity collection without penalty upon reaching 30 years of service.

The primary consideration of each retirement system is the value of the pension. The annuity of any pension must be adequate enough to ensure that the individual will continue with a life style that is comfortable. The two largest factors on recovery rates were the years of service and annuity multiplier. Years of service were the same within every plan that was reviewed. Employee's pensions were bigger for those who work longer. The multiplier varied greatly among the plans ranging from 1.5% to 2.5%. The pension plans for the Michigan State Police and Michigan Conservation Officers did not rely on a multiplier. These two plans had a service requirement only. Once that requirement was met, they received 60% of their final average compensation. The Michigan Conservation Officers were not members of the same pension plan as the State Troopers. They were members of the Michigan State Employees Defined Benefit pension system. The pension provisions for this class were permanently altered by congressional resolution.

The results from questions 1 through 3 can be better demonstrated and used to answer question 4 if displayed together. As shown in Table 2, a comparison of the age and service requirements for a non penalized annuity demonstrates the wide range qualifications. Column 2 is a brief description of the age and service requirement for each pension system reviewed. Any retirement prior to the age requirements listed usually result in a penalized annuity.

Table 2

Comparison of Age and Service Requirements

Pension System	Age and Service Requirement
Federal Employees Retirement System	25 years of service; or age 50 and 20 years of service
Illinois State Employees Retirement System	50 and 25 years of service; or age 55 with 20 years of service
Indiana Public Employees Retirement Fund	65 and 10 years; or age 60 and 15 years service; or at least age 55 with age and service equal to 85
Ohio Public Employees Retirement System	30 years service; or any age over 60 with 5 years service
Wisconsin Retirement System	54 with less than 25 years service; or age 53 with more than 25 years service
Michigan State Employees Retirement System – Defined Benefit	60 with 10 years service
Michigan State Employees Retirement System – Defined Contribution	59 ½ years of age
Michigan State Police Retirement System	25 years service; or between 10 and 25 years service which cannot be collected until age 60

Table 2 (continued)

Pension System	Age and Service Requirement
Michigan Public School Employee Retirement System	55 with 30 years service; or age 60 with 10 years service
Public Act 345, Fire Fighters and Police Officers Retirement Act	55 with 25 years of service; or age 50 with 25 years service upon approval of the municipality

Table 3 shows a comparison of the calculation systems used to determine the pension annuities and the income recovery rates. The recovery rate only includes the percentage of income replacement and not actual dollar amounts. To maintain consistency in the evaluation, the recovery rates identified here were based on a 25 year career. A multiplier was determined by the pension board and used in a formula that multiplies the number of years of service and final average compensation with it. There was a slight variance in how the final average compensation is determined. Those formulas indicating a high 3 or 5, for example, use the employees highest consecutive 3 or 5 years annual wages to average out a final average compensation.

The recovery rate of the State of Michigan Defined Contribution plan could not be determined since it was based totally on a savings account rather than years worked. In this system, final compensation was fully dependant on the amount of savings and investments made over the period of employment.

Table 3

Comparison of Annuity Calculations and Income Recovery Rates

Pension System	Annuity Calculation Method	Recovery Rate
Federal Employees Retirement System	High 3 X 1 7/10% X years of serviced up to 20 years + 1% for each year over 20	39%
Illinois State Employees Retirement System	Last Day or Average of last 48 months X 2.5% X years of service	62.5%
Indiana Public Employees Retirement System	High 5 X 1.1% X years of service	27.5 %
Ohio Public Employees Retirement System	High 3 (for first 30 years) X 2.2% X years of service + 2.5% for all years over 30	55%
Wisconsin Retirement System	Final monthly average earnings X formula multiplier X years of service, or Monthly final average earnings X 65% or 85%	65/85%
Michigan State Employees Retirement System – Defined Benefit	High 3 X 1.5% X years of service	37.5%

Table 3 (continued)

Pension System	Annuity Calculation Method	Recovery Rate
Michigan State Employees Retirement System - Defined Contribution	Based on amount in savings account	Undeterminable
Michigan State Police Retirement System	Average of final two years X 60% or, final compensation X 2% X years of service if between 10 and 25 years.	60%
Michigan Public School Employee Retirement System	Final Compensation X 1.5% X years of service	37.5%
Public Act 345, Fire and Police Officers Retirement Act	High 5 X 2% X years of service up to 25 years + 1% for each over 25	50%

Nearly every pension system evaluated incorporated a defined contribution element. Three of the systems required the defined contribution systems as mandatory supplement to the defined benefit system. The State of Michigan forced all members hired in after 1997 to participate exclusively in the defined contribution system. Table 4 shows a comparison of the supplemental incomes associated with them. Six of the systems provided a supplemental social security benefit. The States of Ohio and Wisconsin had provisions for firefighters to elect not to participate in the social security

program. Public Act 345 members also did not participate in the social security program. Members electing to not participate in social security typically received a higher annuity rate in exchange. Those states and employees that did not participate in the social security program did not give up the right to any benefit except that of an annuity provision.

Table 4

Supplemental Incomes

Pension System	Defined Contribution	Social Security
Federal Employees Retirement System	Mandatory	Yes
Illinois State Employees Retirement System	Mandatory	Yes
Indiana Public Employees Retirement System	Mandatory	Yes
Ohio Public Employees Retirement System	Voluntary	Optional
Wisconsin Retirement System	Voluntary	Optional
Michigan State Employees Retirement System	Voluntary	Yes
Defined Benefit		
Michigan State Employees Retirement System	NA	Yes
Defined Contribution		
Michigan State Police Retirement System	Voluntary	No
Michigan Public School Employees Retirement System	Voluntary	Yes
Public Act 345, Fire and Police Officers Retirement Act	Voluntary	No
Retirement Act		

Discussion

The result of this research revealed several factors that influence the retirements of firefighters. Perhaps the most compelling issues in this research were not the pensions themselves, but the conflicting ideologies between fire protection organizations and the employing agencies. The literature review results indicated two opposing struggles that

firefighters must contend with. The first was being able to meet medical and physical requirements to continue employment as a firefighter (NFPA Std. 1582, 2003); and the second was being able to work long enough to establish a pension that would be adequate to support a comfortable lifestyle after retirement (Bucci, 1992). While the two issues sounded like they are one in the same, the opposite is truly the case.

While the medical and physical standards being imposed on firefighters and fire protection organizations were becoming more stringent, the physical fitness of human beings does inevitably degrade with age. This problem is significant because it may affect the efficiency of operations on the fire ground and public safety (Saupe, et al., 1991). Fire Crash Rescue Officers in the State of Michigan were expected to perform duties and operations comparable to a military firefighter, which includes meeting rigorous mental and physical performance standards (NGR 5-1/ANG 63-101, 2002). The civilian firefighters were expected to be able to perform duties that are equivalent to that of military firefighters who are routinely younger and at a higher level of fitness than the general population. The probability of older firefighters incurring injury during such operations is higher than that of younger firefighters (USFA Fire Fighter Fatality Retrospective Study: 1990-2000, 2002; Fahy & LaBlanc, 2003). This study brings up the question, will those injuries interfere with ongoing operations and jeopardize the public's safety? If the answer is yes, do the state governments want to find out after someone is hurt?

What about the individuals who could no longer meet the medical and physical requirements of the job and did not have enough years of service to qualify for a pension? This could cause some Fire Crash Rescue Officers to be forced to leave the service prior

to qualifying for a pension. Conversely, some Fire Crash Rescue Officers may work beyond the point to which they are an asset to the State of Michigan. They could be become a liability because they attempt to work beyond their physical abilities to obtain a higher income recovery rate. If an employee cannot meet the fitness standards and is removed from duty, is it a disability, workman's compensation or a tough luck issue? The answers to these questions may help determine the need for changes in the retirement system for Fire Crash Rescue Officers.

One method used to ensure that the general firefighter community is a young organization is through the use of mandatory retirement ages. As discovered in the Lusa et al. (1994) study, the physical demand on firefighters remains constant regardless of the age of the firefighter. The study suggests that the ability to perform the tasks successfully would have a factor of age involved. However, some researchers (Pyne, 1996; Myhre, 1996; Saupe, et al., 1991) feel that using age is a poor indicator of fitness within the firefighting work force, while at the same time believing that the individual firefighter's and the general public's safety is in jeopardy by allowing firefighters to work after the age of 50 (Saupe, et al., 1991; USFA, 2002; Fahy & LeBlanc, 2003). This apparent difference of opinion suggest a movement to establish fitness standards for firefighters as a replacement for forced retirement at mandatory ages. As the trend by employers to increase retirement ages continues, the potential for jeopardizing the public's safety may be increased.

In an effort to move from age as a factor for determining a firefighter's ability to perform effectively, medical and fitness standards were being developed and supported by fire protection organizations. The difficulty over the years seemed to be the ability to

develop adequate standards. Medical and fitness standards were not adequate to be applied across the board to evaluate firefighters (NFPA 1500 Handbook, 1993). NFPA medical standards for firefighters were numerous and included some medical conditions that a firefighter can develop with the onset of age. The NFPA classified some issues in the area of hearing, eye sight and obesity as conditions that could preclude one from performing the duties of a firefighter.

The DoD recognized the necessity to provide unique pension provisions for firefighters and police officers. In recognition of the rigorous job conditions and physical demands, the Federal Employees Retirement System has incorporated provisions for firefighters to retire at an age that is lower than that of other career fields (Title 5, 1986). The Department of Federal Civil Service not only accepted the need for a younger firefighting work force, but ensured it by incorporating a mandatory retirement age of 57 (Title 5, 1986) for their firefighters and a maximum age to hire into the system of 35 years (DoD Directive 1402.4, 1998). Many of these retirement provisions had been in place before other regulatory agencies such as the NFPA started to address medical and physical fitness standards.

In the federal pension system, the government has provided a mechanism for employees to hire into the system; work a full career; then, retire with adequate pensions. Individuals are not permitted to hire into the system after the age of thirty-five (DoD Directive 1402.4, 1998). Presumably this was to ensure that each employee had a reasonable chance to retire with adequate benefits. This restriction ensured that individuals could not hire in at an age that would make it impossible to achieve this goal. The federal government may have been ahead of it's time in establishing this criteria.

The DoD has continued to recognize the importance of maintaining medically and physically fit firefighters by adopting the NFPA Standards 1500 and 1582 without reference to any specific edition (DoD Instruction 6055.6, 2000). The NFPA standards had been modified over the years and continue to be re-evaluated periodically. Continuous strengthening of medical and fitness requirements for firefighters may cause older firefighters to face the prospect of failing to meet minimal performance criteria. The addition of provisions requiring approval from a physician before performing firefighting duties and specific medical conditions that would cause a firefighter to be decertified by the doctor had been published (NFPA Std. 1582, 2003) and were being enforced. A firefighter of any age could suddenly become ineligible to work in their chosen career field due to these medical requirements.

The 2003 edition of NFPA Standard 1582, *Standard on Comprehensive Medical Program for Fire Departments* added the physical fitness testing element. Requirements of this document forces fire departments to implement a physical fitness evaluation program for firefighters. The DoD required it's subsidiary organizations to follow these standards. This negated much of the arguments of using age as an indication of fitness. While the DoD still had the mandatory age for retirement, it also incorporates the NFPA standards for medical and fitness levels.

The DoD had established a need for qualified fire protection personnel to be established at all of it's installations (DoD Instruction 6055.6,). The results of this research indicated that various rules and regulations were in place at the federal level to provide guidance to the subsequent lower levels of governments. The DoD's concept of qualified firefighters appeared to be personnel that met the requirements of the NFPA

standards. The DoD expected the federal civil service and the Air National Guard (ANG) to provide qualified firefighters on the military installations. The ANG in turn authored, adopted and provided NGR 5-1/ANG 63-101 to the individual states to establish fire protection programs and provide qualified firefighters on the installations. In each edition of the regulation, the ANG provided total reimbursement to the state governments for these programs (NGR 5-1/ANG 63-101, 2002). However, not all states followed the federal pension example despite the provisions that the total cost would be reimbursed by the Air National Guard.

The results of the research on pension systems for the States of Illinois (Your Rights & Responsibilities Handbook, 2001) and Wisconsin (Your Retirement Handbook, 2002) reflected that these states had unique provisions for firefighter retirements that allowed for retirement at a younger age. The firefighters on those military installations were state civil service employees with provisions different from other civil service employees. There appeared to be recognition for the need of a younger work force.

The State of Ohio (Member Handbook, n.d.) did not have provisions for firefighters to retire at an age younger than the general civil service worker, however, the multiplier used by all employees to calculate the final annuity was much higher than the other states. A firefighter could retire at a younger age and still collect an acceptable income recovery percentage despite a penalization.

The pension systems for Indiana (2002 Member Handbook) and Michigan (Public Act 240 of 1943) did not appear to have considerations for firefighter issues. The firefighters in these states must meet the same criteria as other employees who may be working in much less vigorous career fields. The State of Michigan had already

encountered one firefighter who retired at the age of 62 and had an income recovery rate of 15%. The state faced the prospect of several others to follow (K. Shaw, personal communication, May 7, 2004).

While the states of Illinois, Indiana, Michigan, Ohio and Wisconsin allowed for retirements prior to what was generally termed as a normal retirement age, these did not occur without penalties being applied. The comparison of data in Table 2 represented the earliest age at which an individual could retire without encountering a penalized annuity, not necessarily the earliest an employee could retire. The penalties in each of the systems could circumvent most individuals from retiring prior to deteriorating health and fitness. The income recovery rate would not be adequate to support retirement.

The State of Michigan did have several pension systems available depending on the career field the employee is in (<http://michigan.gov/ors>). The Michigan State Police Retirements System provided a mechanism for retiring at a younger age by implementing only a service requirement and a mandatory retirement age of 56 years old (Public Act 182 of 1986). The data suggests this was in recognition of the rigorous physical demands of the job. The Michigan Public School Employee Retirement System (Public Act 300 of 1980) was administered by the State of Michigan, but was not available to firefighters. This system will not be discussed further. The final system was the State Employees Retirement System. This was the system that the Fire Crash Rescue Officers were assigned to (Public Act 240 of 1943).

The State Employees Retirement System was comprised of the defined benefit and defined contribution systems. Those who participated in the defined benefit program had the ability to predict their income recovery rates since the years of service and

multiplier can be used to determine the income recovery rate. Despite the ability to forecast a recovery rate, the employee could find it necessary to work well after the 60th birthday in an attempt to get the rate high enough for a comfortable retirement.

The State Employees Retirement system was changed in 1996 for all employees hired after 1997. The defined benefit system was replaced by the defined contribution system (Public Act 240 of 1943). According to the National Association of State Retirement Advisors (2003) defined contribution systems are inadequate to rely on for a total pension system. Pension balances are dependent on the savings and investment plan that may not perform as expected. If this happens, a firefighter may have to work longer to guarantee an income recovery rate that is acceptable. The final annuity in these systems was determined by dividing the savings balance by the number of expected years of collection. Early retirement will end contributions and cause the balance to be divided by a higher number resulting in a lower annuity.

State lawmakers in Michigan had recognized the need for special provisions for various career fields due to the physical nature of the jobs. As discussed earlier, the State Police Officers have been granted a pension system that offers and forces an early retirement. Another was found within the State Employees Retirement System in which special provisions were made for the State Conservation Officers who were allowed to retire with 60% of their final average compensation after 25 years of service (Public Act 240 of 1943). Finally, the state legislature passed Public Act 345, *Fire Fighter and Police Officers Retirement Act of 1937*, in recognition of the need for municipalities to establish pension systems that allowed and/or forces firefighters to retire earlier than other employees in the same municipalities. The study suggests that this was an effort by the

state to assist organizations to provide pension benefits to firefighters before age and fitness became serious issues.

Perhaps the data that represented the best comparison of the quality of a firefighter pensions within the existing defined benefit systems was addressed by looking at the income recovery rate for the respective pension plans (Bucci, 1992). Table 3 shows this comparison. Using 25 years of service as a standard, the income recovery rates show what can be expected from each the systems. The defined contribution program in Michigan could not be evaluated in this manner because the value of the investments cannot be determined years in advance. However, the defined benefit system rated very low in comparison to the other plans. In fact, only Indiana provided a smaller income recovery rate than the State of Michigan. Both systems will provide questionable recovery rates upon retirement and both can only be increased by working additional years.

The State of Michigan did not have a maximum age that it will allow an individual to be hired into the Fire Crash Rescue Program, nor did it have special provisions for firefighters to retire prior to age 60 with adequate benefits. For an employee to work 25 years and acquire a 37.5% income recovery rate, they would have to hire into the system prior to age of 35. Those firefighters who are fortunate to hire in prior to age 35 will be forced to work careers in excess of 25 years due to the severe penalties associated with retiring and drawing a pension prior to the age of 60. The only firefighters that could retire prior to age 60 and draw unreduced benefits were those that work 30 years. This could only be achieved if the individual hired into the system prior to the age of 30. The firefighters that worked extended years will still needed to meet the

same medical and physical requirements that a much younger firefighter must meet. This length of service may be detrimental in itself as fitness requirements alone may add to firefighter stress and hazards.

According to the data, Fire Crash Rescue Officers will most likely be working past the age of 50. As discussed earlier, the firefighter and public safety is in jeopardy by allowing firefighters to work after the age of 50 (Saupe, et al., 1991; USFA, 2002; Fahy & LeBlanc, 2003). Finally, the probability of older firefighters incurring injury is higher than that of younger firefighters (USFA Fire Fighter Fatality Retrospective Study: 1990-2000, 2002; Fahy & LaBlanc, 2003). Without the ability to retire comfortably prior to the age of 60, the age group between 50 and 60 years old will be subject to the fitness evaluations that they may not be able to pass. The dilemma for the State of Michigan became fitness verses age. For the firefighter this was easily translated into a choosing between a comfortable annuity or struggling with quality of life. Further complicating the issue is the medical and physical performance criteria that was continuously being re-evaluated and made more stringent. Another question that this study brought up was, if the Fire Crash Rescue Officers could no longer perform fire fighting duties due to a doctor's opinion how would the State of Michigan administer this situation? The military fire chief was responsible for ensuring personnel meet the standards. If an employee did not get a doctor's certification to be a firefighter, they could not perform firefighting duties on the installations yet they would still be an employee of the State of Michigan. As noted earlier, if an employee could not meet the standards, is it a disability, workman's compensation or a tough luck issue? The data in this study suggests that in

either case, the State of Michigan assumed the liabilities for employees not working on the military installations.

The two pension systems assigned to the Fire Crash Rescue Officers, defined benefit and defined contribution, required extended service years to earn an annuity benefit high enough to provide an acceptable quality of life. Income recovery rates must be high enough to ensure a smooth transition from employment to retirement with a limited reduction in lifestyle. The data suggests that to acquire enough service years, the firefighter in many cases would have to work beyond the age of 50 at which time it becomes more difficult to meet the standards as defined by the National Fire Protection Association. The State Police Retirement System which, by statute, was only available to sworn Michigan State Troopers was the only system that allowed members to leave public service prior to the age of 59 ½ without penalties. It was also the only system that theoretically would allow Fire Crash Rescue Officers to retire before deteriorating health and fitness limited their ability to meet the standards that they must pass. The State of Michigan had some avenues that may be pursued to assist Fire Crash Rescue Officers to obtain an adequate annuity prior to failing to meet national standards due to age and fitness related issues.

Recommendations

The problem, as previously stated, was that the State of Michigan's pension system assigned to the Fire Crash Rescue Officers required members to work beyond the safety standards for physical abilities and fitness as defined by the National Fire Protection Association and the Department of Defense Standard 6055.6, Fire and Emergency Service Program. While no single document, regulation, law or standard

provided all the necessary data to identify this as a problem, the assembly and evaluation of the many pieces of literature found in this study seemed to reveal that the problem was real and had an impact on the Department of Defense, State of Michigan and Fire Crash Rescue Officers.

The Michigan State Police Retirement System was adequate for the Fire Crash Rescue Officer's, however it was not available to them. The public act that established this system had not been amended over time. In contrast, the State Employees Retirement System had been amended on many occasions for different classes of employees. This system could be amended again to enhance the ability of Fire Crash Rescue Officers to retire before health and fitness issues arise.

This study produced several questions that must be answered to increase the effectiveness and validity of the pension systems for the Fire Crash Rescue Officers. Further research should be conducted to answer these questions. If a Fire Crash Rescue Officer cannot meet the medical and physical standards required, does it become a disability, workman's compensation or tough luck issue? The answer to this question may provide additional emphasis on establishing a pension system that encourages the retirement of firefighters prior to the decline of health or physical abilities. The answer to this question will lead to a follow up question, if the military fire chief determines that an individual cannot work on the installation, what will the State of Michigan do with the employee? The Fire Crash Rescue program was 100% federally funded. The individual state's were reimbursed for all the expenses in providing fire protection to the installations, however, will the ANG continue to pay the State of Michigan for an employee who cannot work as a firefighter, but could work in another career field? Who

will assume financial liability for that employee, the ANG or the State of Michigan? The State of Michigan must conduct some research to determine the answer to these questions.

The State of Michigan needs to institute a pension system that allows firefighters to retire before health and fitness issues reduce the employee, co-worker's and the public's safety. Based on this research it was apparent that the State of Michigan must re-evaluate the provisions of the State Employees Retirement Act to eliminate the defined contribution system as the mandatory pension system for Fire Crash Rescue Officers; re-establish the employee option to elect the defined benefit system for all new hires and allow all current members of the defined contribution system to transfer to the defined benefit system.

The existing defined benefit and defined contribution systems penalized members who retire and draw an annuity prior to the age of 59 1/2 . The defined contribution systems were administered under the rules of the Internal Revenue Service and could not be controlled by the State Governments. The State of Michigan did have control over the provisions of the defined benefit systems. As was the case in the State Police Retirement System, the system administrative rules must be amended to remove the penalties for retiring and drawing an annuity prior to age 60.

Provisions must be established in the pension system to allow firefighters to qualify for an annuity at a younger age without danger to the state of exuberate annuities being paid to firefighters who work over 30 years. The multiplier used to determine the final annuity must be increased to allow a firefighter to earn a higher annuity with low years of service, there-by allowing an income recovery rate that makes early retirement

reasonable. A cap on annuities could be established at 60% of wages to prevent excessive benefits from being paid. The annuity could be reduced to 50% when social security benefits start for the employee.

The State of Michigan must ensure longevity of firefighters in the system that is advantageous to the state. To further ensure that exuberate pensions are not paid for short duration service, the state must implement a minimum hiring age of 35 years old and a minimum retirement age of 50 years old. This would ensure that an employee performs at least 15 years service with the State of Michigan to qualify for a pension annuity.

The State of Michigan should implement a mandatory retirement age of 57 to ensure the work force is kept relatively young. By implementing a mandatory retirement age, perspective employees could make rational decisions about seeking employment based on projections of retirement incomes. The data in this study shows that the chance of injuries incurred by a firefighter is increased significantly with age. The federal government and DoD have recognized that the age 57 seems to be an acceptable median to fitness testing.

The cost of implementing these recommendations is minimal to the State of Michigan. The NGR 5-1/ANGI 63-101, guaranteed funding to the state for the cost of the program. At the same time, these regulations required the work force to be medically fit to perform the essential job duties. This research indicated that an enhanced pension system is fully justifiable and attainable by the State of Michigan.

References

- Age Discrimination in Employment Act (29 U.S. Code, § 621) (1967). Retrieved May1, 2004 from <http://www4.law.cornell.edu>
- Bucci, Michael (1992). *Police and firefighter pension plans*. Monthly Labor Review, Nov 1992, v115, n11, p37(4)
- Coleman, R. J. ... {et al.}. (2003). *The Fire Chief's Handbook*. (6th ed.). Pennwell, Tulsa, OK
- Coleman, R.J., & Granito, J. A. (Eds.), (1988). *Managing Fire Services* (2nd ed.), International City Management Association, MD: ICMA Training Institute
- Department of Defense Directive Number 1402.4. (December 29, 1988). *Entry Age for Selected Firefighter and Law Enforcement Officer Positions*. Department of Defense: Author
- Department of Defense Instruction Number 6055.6. (October 10, 2000). *Dod Fire and Emergency Services Program*. Department of Defense: Author
- Erie City Retirees Association v. City of Erie, 838 F.Supp. 1048 (Pennsylvania 1990)
- Fahy, Rita F. & Leblanc, Paul R (2003). Firefighter Fatalities in the United States 2003. NFPA Journal, July/August 2004, v98, n4, p44(7)
- Lusa, Sirpa; Louhevarra, Veikko; Kinnunen, Kari (January 1994). *Are the job demands on physical work capacity equal for young and aging firefighters?* Journal of Occupational Medicine, January 1994, v36, p70(4)
- National Association of State Retirement Administrators. (2002, updated 2003). *Myths and Misperceptions of Defined Benefit and Defined Contribution Plans*. National Association of State Retirement Administrators: Author

National Fire Academy, (2003) *Executive Development (R123) Self-Study Guide* [student study guide]. Emmitsburg. MD: Author.

National Fire Academy. (2004). *Executive Development* [student manual]. Emmitsburg, MD: Author.

National Fire Protection Association. (2003). *Standard on Comprehensive Occupational Medical Program for Fire Departments* (NFPA 1582). Quincy, MA: Author.

National Fire Protection Association. (2003). *Standard on Fire Department Occupational Safety and Health* (NFPA 1500). Quincy, MA: Author

National Guard Regulation 5-1/Air National Guard Instruction 63-101. (March 2002). *Master Cooperative Agreement*. Air National Guard: Author

Ohio Public Employees Retirement System. (n.d.). *Member Handbook*. Retrieved May 18, 2004, from <http://www.opers.org>

Payne, J. E. (Summer 1996). *Implementing Health and Fitness for Firefighters*. Public Personnel Management, v25, p237-242

Public Act 182 of 1986, (Michigan Compiled Laws § 38.1601 et seq.) (1986). Retrieved May 1, 2004, from <http://michigan.gov/ors>

Public Act 240 of 1943, (Michigan Compiled Laws § 38.1 et seq.) (1943). Retrieved May 1, 2004, from <http://michigan.gov/ors>

Public Act 345 of 1937, (Michigan Compiled Laws § 38.551 et seq.) (1937). Retrieved May 1, 2004, from <http://michigan.gov/ors>

Public Employees Retirement Fund of Indiana (2002). *2002 Member Handbook*. State of Indiana: Author. Retrieved May 18, 2004, from <http://www.in.gov/perf>

S. 553 and H.R. 849: *Age Discrimination in Employment Amendments of 1995: Hearing of the Committee on Labor and Human Resources United States Senate*, 104th Cong., 74 (1996) (testimony of Frank J. Landy, Ph.D.)

S. 553 and H.R. 849: *Age Discrimination in Employment Amendments of 1995: Hearing of the Committee on Labor and Human Resources United States Senate*, 104th Cong., 74 (1996) (testimony of Loren G. Myhre, Ph.D.)

Saupe, K.; Sothmann, M.; and Jasenof D. (1991) *Aging and Fitness of Fire Fighters*. American Journal of Public Health, v81, no9, p1192

State Employees' Retirement System of Illinois. (2001). *Your Rights & Responsibilities Handbook*. Springfield, IL: Author. Retrieved May 1, 2004, from <http://www.state.il.us/srs>

State of Wisconsin Retirement Research Committee. (2000). *2000 Comparative Study of Major Public Employee Retirement Systems* (Staff Report No. 83). Madison, WI: Wisconsin Legislative Council. Retrieved May 3, 2004 from <http://eft.wi.gov>

Teele, Bruce W. (Eds.). (1993). *NFPA 1500 Handbook*. Quincy, MA: Author

Title 5 - Government Organization and Employees, 5 U.S.C § 8400 (1966). Retrieved May 1, 2004, from <http://www4.law.cornell.edu/uscode/5/index.html>

U.S. Fire Administration. (June 1999). *Emergency Response to Terrorism self study*. Federal Emergency Management Agency, Arlington, VA: Author

U.S Fire Administration. (2002). *USFA Firefighter Fatality Retrospective Study: 1990-2000*. Federal Emergency Management Agency, Arlington, VA: Author

Wisconsin Department of Employee Trust Funds. (2002). *Your Benefit Handbook*. Retrieved May 18, 2004, from <http://etf.wi.gov/publications>