

**DEVELOPING A TRAINING POLICY FOR THE MERIDIAN TOWNSHIP  
FIRE DEPARTMENT**

**EXECUTIVE LEADERSHIP**

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*Appendices Not Included. Please visit the Learning Resource Center on the Web at <http://www.lrc.dhs.gov/> to learn how to obtain this report in its entirety through Interlibrary Loan.*

## **ABSTRACT**

The Meridian Township is a small career fire department of 43 personnel. The Training Division has the responsibility to conduct, coordinate and assure that training is properly conducted. The problem was that Meridian Township Fire Department lacks a training policy to aid in meeting the training needs of fire fighting personnel.

The purpose of this research project was to gather accurate information about the legal requirements for training, identify the training needs of the Meridian Township Fire Department, and to identify published training recommendations so that a training policy can be adequately developed. This study utilized action and descriptive research methodologies to answer the following research questions:

1. What are the training needs or deficiencies of the Meridian Township Fire Department?
2. What local, state or nationally recognized mandates, standards or benchmarks are applicable to fire training within the Meridian Charter Township Fire Department?
3. How do staffing levels of the Meridian Township Fire Department impact training?

4. What actions can be taken to increase the efficiency and quality of training delivery?

A literature review, interviews and a review of Meridian Township records were conducted. A study of the on-duty training format revealed that an overwhelming majority of the time training were interrupted by alarms. Changes in the training format were made to determine if the training completion rate could be increased. Personnel surveys revealed perceived training deficiencies and provided suggestions to improve training content as to frequency, type and format.

The results uncovered found that staffing levels provide inadequate personnel to train and answer alarms simultaneously. Changes in format increased training completion rates but placed a greater time burden on the Training Division. Providing simple task specific objectives to the company officers proved to be very successful in the completion rate and quality of training.

The recommendations were to develop a three-year training plan, which in it adds a company office directed element. This element provides options to the company officer so that specific needs of the crew can be addressed. A one-year pilot policy will be used to test the effectiveness of the recommendation. The policy provides simple, verifiable and job specific objectives that can be easily prepared for and delivered by the company officer to their firefighters while on duty.

## TABLE OF CONTENTS

ABSTRACT .....	2
TABLE OF CONTENTS .....	4
INTRODUCTION.....	5
BACKGROUND AND SIGNIFICANCE.....	6
LITERATURE REVIEW.....	12
TRAINING .....	18
PROCEDURES.....	20
RESULTS.....	25
DISCUSSION.....	35
RECOMMENDATIONS .....	40
REFERENCES.....	43
APPENDIX A.....	45
APPENDIX B.....	46
APPENDIX C .....	48
APPENDIX D .....	51
APPENDIX E.....	53
APPENDIX F .....	55
APPENDIX G .....	56

## INTRODUCTION

“What should we do for drill?” (Smith, 1998). This question has been pondered many times through out the history of the fire service and generally goes without a long-term satisfactory answer. “A primary mission of any fire service training facility is to train personnel to fight structural fire.” (Murry, 1989) and “...we train our personnel is to improve performance.” (Thornton, 1999).

The Charter Township of Meridian Fire Department frequently must address the issue of training, quality training directed at structural fire operation with the end goal of improving performance. The problem is that Meridian Township Fire Department lacks a training policy to aid in meeting the training needs of fire fighting personnel.

The purpose of this research project is to gather accurate information about the legal requirements for training, identify the training needs of the Meridian Township Fire Department, and to identify published training recommendations so that a training policy can be developed.

This study utilized action and descriptive research methodologies to answer the following research questions:

1. What are the training needs or deficiencies of the Meridian Township Fire Department?
2. What local, state or nationally recognized mandates, standards or benchmarks are applicable to fire training within the Meridian Charter Township Fire Department?

3. How do staffing levels of the Meridian Township Fire Department impact training?
4. What actions can be taken to increase the efficiency and quality of training delivery?

### **BACKGROUND AND SIGNIFICANCE**

The Charter Township of Meridian (Meridian Township) is a 32 square mile suburban mid-Michigan community located 8 miles east of the state capitol, Lansing. The township shares boundaries with the cities of Lansing and East Lansing on its west side and rural communities to the north, east and south. Within its boundaries are the communities of Haslett and Okemos, which include many retail businesses, a portion of a Michigan State University, limited industry, many residential structures (single family, apartments and student housing) many parks, lakes, ponds, streams and a river. The population of Meridian Township from the 2000 census was 39,116 residents.

The Meridian Township Fire Department (MTFD) is a small career department of 43 personnel operating out of three fire stations and a separate administration building. Thirty-six personnel are assigned to the MTFD Fire Suppression Division working a 24-hour shift on a 50.4-hour workweek, providing fire, rescue and Advanced Life Support (ALS) transport. The Suppression Division has 2 Battalion Chiefs, 3 Captains, 7 Lieutenants and 24 Firefighter/Paramedics. Six personnel are assigned to

administration on a 40-hour workweek; the Fire Chief, Assistant Fire Chief (operations), Fire Marshal, Chief of Training, Fire Inspector, and the EMS Coordinator. Completing the personnel roster is the department secretary who is a civilian employee assigned to administration.

Until 1994 the department lacked an assigned training position, therefore most non-EMS training was conducted by a shift Lieutenant. This arrangement proved to provide inconsistent training between the shifts. Most sessions involved watching a monthly fire training videotape during the afternoon with limited hands on practice. In September of 1994 a Training/Safety Coordinator position was created in an effort to increase training quantity and quality; the position was filled by a shift firefighter on overtime. In January 1996 this position became a 40-hour position with the emphasis being directed toward providing Michigan Fire Fighter I & II certification to all career firefighters. In-house training was also conducted to bring all personnel to the level of Hazardous Materials First Responder – Operations, National Fire Academy Incident Command System and Michigan Emergency Vehicle Operator certified.

The township's governing board directed the Public Safety Director in March of 1996 to increase the amount of volunteer fire fighters and to train police officers so that they too would be certified as firefighters. In August of 1996 the position of Training /Safety Coordinator was to be eliminated under a re-organization of the police and fire departments into an integrated Public Safety organization. At that time there were five Inspector grade positions established and placed on 12 hour rotating shifts to provide fire/EMS supervision, incident command and training needs. These five positions worked on rotating shifts until being eliminated by reorganization in August of 1997. In



December of 1997 a 40-hour position was re-established to facilitate training and to act as second in charge during the reorganization from an integrated police/fire department back to a traditional fire department.

Under yet another reorganization of the fire department In September 1998 the Training/Safety Coordinator position was again eliminated and a Chief of Training position was created to direct the Training Division. Currently this position is responsible for all training needs including fire, rescue, OSHA compliance and EMS. After the 1998 reorganization the fire suppression force in Meridian Township consisted of all career personnel, shifting the focus of training from entry-level certification training to maintenance training with introduction of new skills/procedures/advancements in the fire service.

The Training Division currently has two personnel assigned, a Chief of Training and an EMS Coordinator. The EMS coordinator handles all training for EMS re-licensure, EMS equipment, continuous quality improvements and all administrative functions relating to EMS. This leaves the Chief of Training as the sole party to research, develop, and implement training for all fire and rescue related activities in addition overseeing the EMS Coordinator.

Staffing levels have always played a role in the department's training because to run medium scale drills with on-duty personnel everyone on duty must participate to make the drill realistic. Quite often personnel must leave the training drills to answer calls for service. A staffing analysis conducted for the year 2000 noted the availability of personnel within MTFD decreases to its lowest level, on average, at 1400 hours. Coincidentally, MTFD training is generally scheduled between 1300 hours and 1600

hours. Minimum daily staffing for MTFD is seven, providing one company officer and one paramedic firefighter at each of the three fire stations. The seventh person is the Battalion Chief who functions as the shift supervisor. The two personnel assigned to each of the fire stations must cover the fire apparatus and advanced life support (ALS) ambulance. Depending on the nature of the response, personnel "jump" between the fire apparatus and the ambulance.

Shift staffing varies between seven and a maximum of eleven; Table 1 indicates the current MTFD *Station Staffing Policy* ("Meridian Fire Department Station Staffing Policy," 1996) directing on-duty MTFD personnel deployment.

**Table 1**

<b>Number of Shift</b>	<b>Battalion Chief</b>	<b>Station 1</b>	<b>Station 2</b>	<b>Station 3</b>
<b>7</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>2</b>
<b>8</b>	<b>1</b>	<b>3</b>	<b>2</b>	<b>2</b>
<b>9</b>	<b>1</b>	<b>4</b>	<b>2</b>	<b>2</b>
<b>10</b>	<b>1</b>	<b>4</b>	<b>3</b>	<b>2</b>
<b>11</b>	<b>1</b>	<b>4</b>	<b>4</b>	<b>2</b>

The average for available staffing levels in the 2000 was 7.8 persons on duty (Harper, p. 27). With staffing at the current levels a single vehicle accident removes five personnel (more than half the shift) from the training assignment.

The MTFD work week is established by labor contract, the (*"Agreement Between The Charter Township of Meridian and Meridian Township Fire Fighters Association Local 1600, IAFF,"*) effective date of January 1, 1999 states in Article X, 10.1:

[t]he Township shall establish a work week schedule for all fire fighters working a twenty-four (24) hour duty day which shall average 50.4 hours per week. This work schedule shall be worked under a two-platoon system with Kelly days. The duty day shall begin at 7:00 a.m. (p. 9).

This contractual language creates difficulty in conducting training because it requires a system where there are six work units. Currently training sessions are established on the Master Training Schedule six times per month on each topic or drill. This is done in an effort to provide training to all personnel on the single topic or drill. The official training days are Monday through Friday, usually in the afternoon. If a crew missed training due to an emergency response it will be six days until the same make up of crews are working again so a make-up session can be conducted.

It may take much longer in some instances, for example when a crew misses training on Monday the next scheduled time they all work together again is Sunday. Because the Training Division does not work weekends the session is put off for six more days falling on a Saturday. Once again no the Training Division off so the shift postpones the training until the next Friday, eighteen days later. Fridays are generally EMS training days and is identified as the day of the week with the fewest personnel available for training or alarm response (Harper, 2001, p. 27). A recent 4-hour clandestine drug lab initially scheduled for the month of March took until June to

complete due to interruptions; even then only 33 of the 36 personnel completed the training.

Since 1998 the direction of the Master Training Schedule has been directed at compliance with OSHA regulations and new equipment. Due to the large amount of new employees most of the documented training hours are generated by new employee orientations and the completion of probationary employee quarterly objectives.

### **Relevancy to the Executive Leadership Class**

The topic of this paper is related to the National Fire Academy, Executive Leadership course in Unit 2: Developing as a Leader and Unit 8: Influencing. In Unit 2 Executive Leadership Qualities, leadership is defined as "...a process through which an individual influences others toward the accomplishment of a common goal" (NFA, 2000). This unit also encourages leaders to have a sense of direction and "a vision that empowers others to transform vision into action" (NFA, 2000).

By using leadership this research project will provide a vision and a plan to influence the company officers of the Charter Township of Meridian Fire Department to improve performance and increase safety.

### **Relevancy to the United States Fire Administration Operational Objectives**

The first USFA Operational objective to is reduce the loss of life from fire by 15%. The secondary objective for this is to reduce by 25% the loss of life to; 1) the age group 14 years old and below, 2) the age group 65 years old and above, and 3) firefighters.

By training fire service personnel with the intent to improve performance, the chances of quicker, more efficient fireground operations should provide greater chances of decreasing the risk to all civilian age groups. Solid, realistic, ongoing and verifiable training will, most importantly, lessen the chances of fire fighter injury and death.

The third USFA operational objective is to appropriately respond in a timely manner to emergent issues. A well-trained, efficient, educated and competent fire department will be able to meet this goal and provide the best service to the community it serves.

## **LITERATURE REVIEW**

“Training is certainly no stranger to the fire service; it is an integral element within the infrastructure of any department or agency” (Naum, 1989). The NFPA (National Fire Protection Association) Fire Protection Handbook 18th edition states that “[t]he principal resource of a fire department is its highly trained personnel(NFPA, 1997a)... “The main question for the [fire] Service is whether it can afford not to change the way it trains personnel” (Thornton, 1999). “It is no longer enough to drill and practice our students in the component skills needed by the fire service...[w]e have to prepare our firefighters to use their heads as well as their hands” (Wilson, 1996).

In an effort to objectively evaluate and further develop proper fire suppression training for the Meridian Township Fire Department and answer the questions posed in this research paper, the past work of others was reviewed and the following results discovered.

In the video *Fire Department Civil Liability: The True Story*, Gordon Graham states that to reduce liability fire departments should “[t]rain, train, train... get so good at what you do [the potential for litigation diminishes]”. He recommends the using the “SROVT” approach to training that is; Solid, Realistic, On-going, Verifiable Training .

The *Charter Township of Meridian 2002 Operating Budget* includes within the narrative a section titled *Description of Activities Supporting Township Goals*. To support budgetary improvements Section 1.2 (a), Health and Safety Ends, states that the goal of the fire department is to “[p]rovide a safer work environment through training...” This document does not mandate training although it does direct and justifies requests for funding from the local governmental unit .

Michigan, being an OSHA state, has enacted worker safety standards through the Michigan Department of Consumer and Industry Services (MDCIS), more commonly known and referred to as MiOSHA (Michigan OSHA). In November 1974, the *Michigan Department of Consumer and Industry Services, Part 74 Firefighting* was enacted and used to protect firefighters working in Michigan. This safety standard was amended in November 2001 establishing the current requirements for Michigan fire departments. The provisions of Part 74 include:

#### OPERATIONS

Rule 7451 Supervision of emergency operations.

(1) Each fire department shall establish and implement written procedures for emergency scene operations. The written procedures shall includes all of the following:

...(d) A requirement for initial training for and annual refresher training in emergency operations and the incident management system.

(2) A trained employee shall function as the incident commander at each emergency

#### Rule 7411 Duties of employer

(1) An employer shall comply with all of the following requirements:

(a) Provide training to an employee commensurate with the duties and functions that the employee is expected to perform.

(2) An employer shall prepare and maintain a statement or written policy which establishes its basic organizational structure and which establishes the type, amount, and frequency of training to be provided to fire service personnel. ("Part 74 Fire Fighting,")

The National Fire Protection Association has several documents that provide recommendations and guidance in training fire fighters. *NFPA 1500, Standard on Fire Department Occupational Safety and Health Programs* states:

Section 5.1.1 the fire department shall establish and maintain a training and education program with a goal of preventing occupational deaths, injuries, and illnesses.

Section 5.1.2 The fire department shall provide training and education for all department members commensurate with the duties and functions that they are expected to perform.

Section 5.1.10 Training programs for all members engaged in emergency operations shall include procedures for the safe exit and accountability of members during rapid evacuation, equipment failure, or other dangerous situation and events...(NFPA, 2002)

According to *Webster's New World Dictionary*, (*Webster's New World Dictionary*, 1988) the term "commensurate" as used in these two documents, means "equal in measure and size...corresponding in extent or degree; proportionate (p. 280). The term "duties" is defined as "any action, task, etc. required by or relating to one's occupation or position" (p. 427).

Gary Wilson wrote in *Fire Chief Magazine* :

Education is about the context of knowledge, learning and understanding as much as about the mastery of any particular set of skills or information. It's not just learning what to do.. It's learning what it is you're really doing... [E]ducation involves understanding what it means personally, professionally, socially and organizationally to take certain actions...Education develops the employee as a person, not just the person as an employee...Today's fire service needs education as much as training. (Wilson, 1996)



To provide guidance for fire fighter education and training the most widely recognized document to benchmark fire service training is the National Fire Protection Association standard, *NFPA 1001, Standard for Fire Fighter Professional Qualifications* was reviewed. This standard clearly explains the training and education elements required for certification as Fire Fighter Level I and Fire Fighter Level II. NFPA 1001 Chapter 3 provides the objectives for Fire Fighter I certification and Chapter 4 lists the objectives for Fire Fighter II certification. Unfortunately *NFPA 1001* makes no frequency recommendations for update/refresher fire suppression training. (NFPA, 1997b)

Michigan Act 291 has adopted by reference *the National Fire Protection Association Standard 1001- standard for Firefighter Professional Qualifications*, as the basis for knowledge and skills firefighters must meet. Act 291 requires that all “[f]ull-time firefighters must, within 12 months of hire, pass the Firefighter I & II written and practical skills exam as adopted by the [Michigan Fire Fighters Training Council].” (“Fire Fighters Training Council Act,” 1966)

An article in *FIREHOUSE* magazine titled *Training Balance; developing a comprehensive Training Program* outlines that:

A well-developed training program requires looking at an organization's current and past training practices and establishing conditions to improve and allow for growth to meet the challenges imposed upon the department...The objective of [training] is to establish and provide an acceptable level of skill and education commensurate with the function the personnel are expected to perform ...The majority of this

nation's training programs are structured around and delivered by departmental training groups...In many of these organizations, one person or a small group of individuals handles the duties and responsibility of the training officer or coordinator...The design and development of a comprehensive training program...can be developed to meet the specific and individual needs of the organization... Care must be given toward making the programs stimulating, intensive and geared toward the competency level of the assigned group...[E]fforts must be made to establish a program to provide a sequential development of subjects that will offer trainees unity in skill training and transition from subject area to build upon the previous topic, both in terms of intensity and challenge.” (Naum, 1989)

The NFPA Fire Protection Handbook 18th edition (1997a) states:

The goal of any fire department training program should be to teach each person in the department to operate at acceptable performance levels for his or for rank and assignment. Ideally, training courses should have their own instructional objectives, a list of enabling objectives showing how the instructional objectives can be reached, and stated methods that explain how anticipated or desired behavioral changes can be measured (p. 10-17).

On the topic of training content and frequency the *NFPA Fire Protection Handbook 18th edition* (1997) recommends that “basic training requirements...ensure that members are trained adequately to provide for their own safety and that they do not create any hazard to others in the performance of their duties.... members of the department [who] engage in structural firefighting...must be held at least monthly.” (p. 10-66)

A booklet of *Michigan Laws, Regulations and Standards Pertaining to Training For Local Fire Departments* (Weisberber, 2001) provided by Michigan Consumer and Industry Services and Oakland Community College, Oakland Fire Training Institute summarizes the Michigan fire service training requirements for both initial and refresher training. This document explains the type of training and the frequency of delivery to employees for the following;

TRAINING	FREQUENCY
Care, use, inspection, cleaning, maintenance and limitations of protective clothing assigned and available for employee use	As often as necessary, but not less than twice a year
Incident Command System	Annual Refresher
Structural fire fighting training sessions	10 monthly sessions, but not less than two hours a month
Two-In/Two-Out, interior structural fire fighting	Trained to work in teams of two or more, maintain voice or visual contact with each other (no specific amount given)
Non-structure fire fighting training sessions	24 hours annually if primary assignment or 9 hours if occasional assignment
Emergency scene operations and Incident Command System	As often as necessary, but not less than twice a year
Safe and proper use of SCBA certification	Annual training and certification

The International Fire Service Training Association (IFSTA) published the fourth edition of *Essentials of Fire Fighting* (1998) which is intended to serve as a “primary text for the firefighter candidate or as a reference text for fire fighting personnel who are already on the job. This book addresses most of the fire fighting objectives found in NFPA 1001, *Standard for Fire Fighter Professional Qualifications, 1997 Edition* (p. xxiv). The NFPA 1001 requirements as outlined in Chapters 3 and 4 of the standard are references by location within the *Essentials of Fire Fighting, Fourth Edition* (1998) on page xxii of the manual.

The document *Skill Session Training Programs* provides an introduction to the concept of “mini-drills”. These drills are standardized drills developed from the NFPA 1001 Standards and from departmental operating procedures with the intention of focusing on one objective at a time for the purpose of providing quality training at the company officer level with shorter preparation time and increasing consistency between instructors. The author suggests that career departments “give each company officer a copy of the Skill Session list and tell him or her to pick which ones they want, specifying so many Skill Sessions per shift/week/month/etc” (Smith, 1998).

Another drill-based document is (*“NFPA 1410, Standard on Training for Initial Emergency Scene Operations,”*). This is “a training standard designed to provide fire departments with an objective method of measuring performance for initial fire suppression and rescue procedures using available personnel and equipment (p. 1410-4)”. This document outlines fourteen basic drills that allow for options in hose size and water supply. The drills are designed to measure the initial capability of a fire department’s first responding units.

At the February, 2002 meeting of the Michigan Fire Service Instructors meeting, Chief David Purchase explained the document *An Overview of the Norton Shores Fire Department Training Program Calendar – 2002*. The booklet contained the three-year training plan for his department that was developed in a new format for the fire service. His plan was modeled after the concept used in Michigan to re-license Medical First Responders (MFR's) Emergency Medical Technicians (EMT) and Advanced-EMT/Paramedics.

A yearly calendar was developed for each of the next three years showing mandatory training in various disciplines of the departments operation. The second section provided for "elective training. The electives were calculated by credits and a minimum number of credits each year, being 24, must be completed by each Norton Shores firefighter. The personnel assigned to conduct training were directed to prepare and submit to their shift Captain an outline, list of training aids used, copies of handouts/tests and any outside resources used. To track this training each employee has an individual training "credit" sheet that must be reviewed a minimum of four times each year by the supervisor.

## **PROCEDURES**

The research procedures used in preparing this document focused on five main areas: a literature review, a review of actual training sessions conducted by Meridian Township Fire Department, interviews with Assistant Fire Chief Dale Monnier and Michigan Department Of Consumer and Industry Services CET Inspector Lee Jay Kueppers, a survey questionnaire of MTFD personnel and a review of other fire

department training procedures. This research project employed action research and historical research methodologies to: (a) examine past training events and to assess the current training needs within MTFD, (b) determine what training recommendations and mandates apply to MTFD, (c) compare the recommendations and mandates to the current MTFD training situation in an effort to uncover any actions that can be taken to increase the efficiency and quality of training delivery, and (d) to determine how staffing levels of the Meridian Township Fire Department impact training.

### **Literature Review**

The focus of the literature review targeted materials that contained information on fire department training and determined adequate type, frequency and amount of training, additional research was conducted to locate various formats of training delivery. Sources such as trade journals, magazines, textbooks, Michigan OSHA Standards, other Fire Department's procedures and the NFPA Standards were reviewed. Any applicable information found was summarized and included in this research report.

### **Review of Meridian Township Records**

A review of Meridian Township training sessions was conducted between January 2002 and July 2002. The records reviewed provided history and background, although the main focus was directed at discovering how often MTFD personnel were able to complete a training assignment without interruption while on duty. The statistical data collected, measured in actual numbers, was attained from the "*Daily Training*

*Report” (Daily Training Report, 2002)* and notations kept by the author. The research data was collected and analyzed over a six-month period.

The raw data collected was compiled onto a single form created by the author showing successful completion, or the failure to complete a training sessions for the study period. The time of day that the training was conducted was also analyzed and compared to successful completion of the training objectives.

### **Interviews**

Lee Jay Kueppers, Occupational Safety Consultant, from the State of Michigan Consumer and Industry Services, Consultation Education and Training Division, was interviewed in February, March and July in an effort to gather perspective on the training requirements mandated by Michigan OSHA (MiOSHA). The interview were invaluable in locating the Michigan required OSHA documents and materials used in the literature review.

Assistant Fire Chief Dale Monnier was interviewed on several occasions, initially to determine information about budget issues, cost of personnel and shift coverage formulas. Subsequently, he helped to develop formulas and the proper formatting to request funds to support the recommendation made to increase MTFD training quality.

### **MTFD Personnel Survey**

Descriptive research was used to gather perspective from fire suppression personnel. To achieve this objective an opinion survey was developed (see Appendix A, B and C) asking for opinions and observations about training needs. The survey

period was July 02 to July 29, 2002. The survey questionnaire consisted of several parts, with slight modifications providing greater applicability to the different levels in the Suppression Division.

The first section of the survey sent to the firefighters the questions asked about the content and frequency of the training they should receive based on their own needs. Another similar survey was sent to the company officers and Battalion Chief's asking for training content and frequency that should be provided based on the needs of the personnel they supervise. The foundation for this bank of questions was based on the 19 chapters topics in the *Essentials of Fire Fighting-Fourth Edition* (1998). The respondent was asked to provide a frequency of review for the topic being 1, 2, or 3 years and the amount of hours spent on the topic during that time.

In the second section of the firefighter, Lieutenant and Captain surveys asked open-ended questions regarding the preferred time to conduct training during the shift with forced choice questions dealing specifically with classroom and hands-on training times. The Battalion Chiefs were asked open-ended questions about specific training needs for their Lieutenants, Captains and firefighters in addition to other questions. All surveys asked if off-duty drills in 3 to 4 hour blocks would be an effective way to increase quality of the training and, if yes, how many drills each year. Ending the survey was an open-ended question asking for suggestions and comments on the type, frequency, topics, delivery content, delivery method or any other issue the individual wished to present to the Training Division.

Draft copies of the questionnaire were presented to the administration as a field test and to provide suggestions for improvements. Some minor editing to format was



done to clarify the questions and provide accuracy to the forced answer questions.

The questionnaire survey instrument was provided to all MTFD personnel assigned to fire suppression. A total of 36 copies of the survey, with cover letter and return envelopes, were distributed through interdepartmental mail on July 02, 2002 (see Appendix A, B, and C). Of the 36 surveys distributed 19 were returned for a total response rate of 53%. The breakdown in responses was 100% (2) from the Battalion Chiefs, 60% (6) from the Lieutenants and Captains and 46% (11) from the firefighters.

These responses from the survey questionnaire were entered into Microsoft Excel 2000© spreadsheets. The resulting data was placed into graph charts illustrating the data collected from survey (Figures 3 to 8).

### **Assumptions and Limitations**

An assumption was made that the respondents to the surveys understood each question and possessed the knowledge and ability to answer them accurately. Another assumption is that the respondents answered all questions fairly and accurately and did not discuss the issues in the survey with each other until after completing the survey. Next, it is assumed that the authors referenced in the literature review performed objective and unbiased research, and that the data collected from Meridian Township records was accurate and reflects the actual events. Lastly, due to the research abilities of the author, research materials related to the topic and this applied research project may have gone undetected which could have changed the results of the research.

Several limitations were experienced in researching and developing this applied research project and should be noted. The first, of the 36 survey questionnaires sent

out only 19, or 53%, were returned. Two additional survey forms, 1 from a company officer and 1 from a firefighter, were returned blank therefore no data could be ascertained from them.

This research was limited in the amount of time to analyze the various changes made to the training schedule. Efforts were made to determine the best format and time to conduct training, again, due to the short study period the changes made in format were limited in data collection. Lastly, the Fire Prevention Division generally schedules training with the Suppression Division on most Wednesdays therefore the information in this research generally does not reflect conditions on that day of the week.

## **RESULTS**

### **Answers to Research Questions**

1. What are the training needs or deficiencies of the Meridian Township Fire Department?

From the firefighter survey responses the greatest deficiency in training expressed was the lack of adequate staffing levels to properly run drills and answer the routine calls for service. Concern was expressed about needing to return to the basics and that too much training energy is spent on specialized rescue (trench, confined space and high angle rescue). More time needs to be placed into pump operation, firefighter safety and saving our own, building construction, standpipe operation and

suppression systems. Additionally the current format for confined space training provides to few personnel trained and the training they do have is in question. Suggestions were made to make training more realistic and even to re-institute live fire training.

The company officers stated training should involve more practical evolutions, Incident Command Systems (ICS) training and fireground procedures. The concern is that many of the younger personnel are close to becoming acting company officers and they must be able to implement ICS and command an emergency scene. Specific suggestions asked to conduct more confined space training, terrorism response, pump operation, hydraulics and engineering training.

The Battalion Chiefs recommended that firefighters receive ICS training to assure that everyone understands ICS and follow orders correctly. Training must also reinforce to the firefighters' understanding of their role at emergency scene incidents. As noted by other groups MTFD need a pump operation-training program developed and implemented. The Battalion Chiefs' suggested that the Captains and Lieutenants be instructed and certified to the NFA Incident Safety Officer level. Leadership training will provide company officers the tools to manage the firefighters more effectively.

2. What local, state or nationally recognized mandates, standards or benchmarks are applicable to fire training within the Meridian Charter Township Fire Department?

The literature review revealed both general and detailed documents pertaining to fire department training. The *Michigan Department of Consumer and Industry Services, Part 74 Firefighting* is used to protect firefighters working in Michigan. This document requires each fire department to establish and implement written procedures for emergency scene operations. Written procedures must include a requirement for initial training and annual refresher training in emergency operations and the incident management system. The document also requires that a trained employee function as the incident commander at each emergency.

Part 74 continues by mandating that each fire department provide training to an employee commensurate with the duties and functions that the employee is expected to perform before assignment to the task. To assure compliance the fire department must prepare and maintain a statement or written policy which establishes the type, amount, and frequency of training to be provided to fire service personnel.

Nationally, the National Fire Protection Association has published several documents with recommendations and guidance in training fire departments. *NFPA 1500, Standard on Fire Department Occupational Safety and Health Programs* states that the fire department shall establish and maintain a training and education program with a goal of preventing occupational deaths, injuries, and illnesses. To accomplish this the fire department shall provide training and education for all department members commensurate with the duties and functions that they are expected to perform. The training programs for all firefighters engaged in emergency operations shall include procedures for the safe exit and accountability of members during rapid evacuation, equipment failure, or other dangerous situation and events.

The National Fire Protection Association standard, *NFPA 1001, Standard for Fire Fighter Professional Qualifications* clearly explains the training and education elements required for certification as Fire Fighter Level I and Fire Fighter Level II but makes no frequency recommendations for update/refresher training.

A Michigan law, Act 291, has adopted by reference *the National Fire Protection Association Standard 1001- standard for Firefighter Professional Qualifications*. This Act requires that all firefighters, depending on status, must pass the Firefighter I and/or II written and practical skills exam based on NFPA 1001 as adopted by the Michigan Fire Fighters Training Council.

A publication called *Michigan Laws, Regulations and Standards Pertaining to Training For Local Fire Departments* distributed by Michigan Consumer and Industry Services and Oakland Community College, Oakland Fire Training Institute summarizes the Michigan fire service training requirements for both initial and refresher training. This document explains the type of training and the frequency of delivery to employees for the care, use, inspection, cleaning, maintenance and limitations of protective clothing, the Incident Command System, structural and non-structural fire fighting training sessions, emergency scene operations, “Two-In/Two-Out” interior structural fire fighting and the safe and proper use of self contained breathing apparatus (SCBA)

The International Fire Service Training Association (IFSTA) *Essentials of Fire fighting fourth edition* textbook serve as the nationally recognized text for the firefighter candidate or as a reference text for fire fighting personnel who are already on the job. This book addresses most of the fire fighting objectives found in NFPA 1001, *Standard for Fire Fighter Professional Qualifications, 1997 Edition*).

3. How do staffing levels of the Meridian Township Fire Department impact training?

In the study of training conducted by MTFD from January 1 to June 31, 2002, it is quite apparent that the MTFD daily staffing levels have a significant impact on training. From January to March 2002, training was conducted utilizing the regular method scheduled training at 1330 hours in the afternoon under the direction and instruction of the Chief of Training. This proved to provide a 16.3% completion or in other words an 83.7% interruption rate for regular shift training. This was in part due to one or more companies being called out for a response.

A staffing study done in 2000 revealed that, on average on any given day, 1400 hours was the time of day when the fewest numbers of personnel were available for any purpose including training. Since training was generally scheduled during this time the schedule was changed so that training began at 0900 hours in the morning for the month of April 2002. The change in time proved to decrease the interruption rate to 42.8% or created a 57.2% success rate.

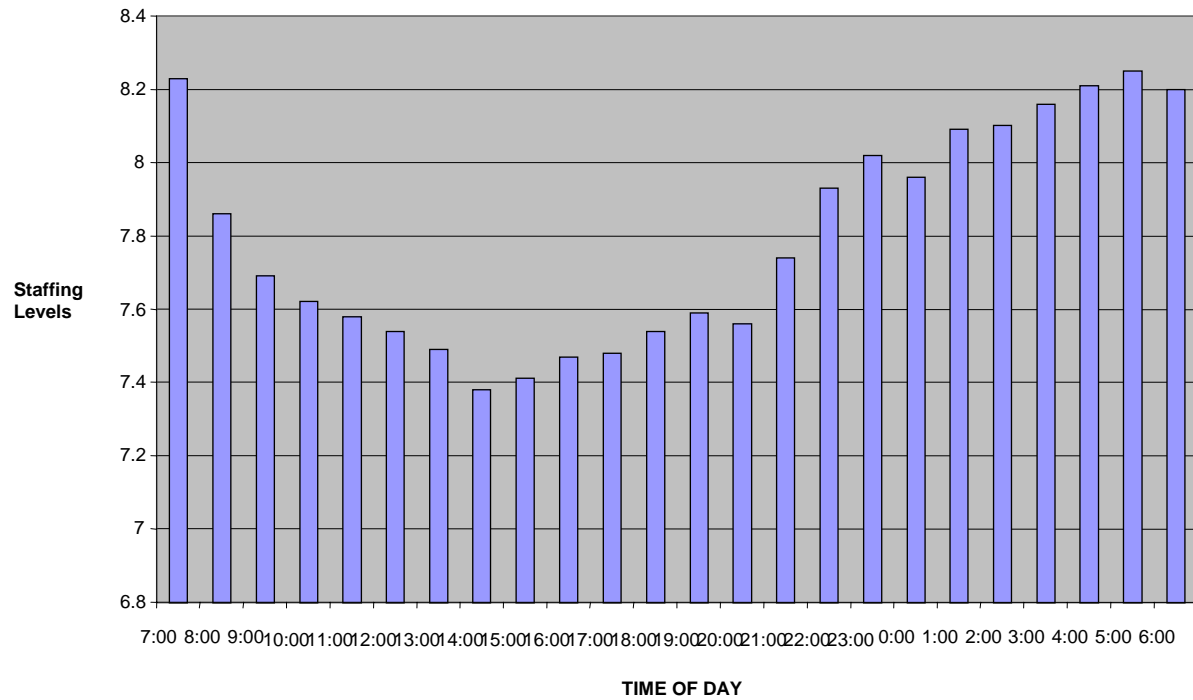
In the month of May 2002, another change was made so that training was conducted both in the morning and afternoon. This was facilitated by splitting the shift in two parts, one trained while the other responded to calls for service. An 83.3% completion rate (16.7% interruption rate) was seen. The objectives for training were being met but the time to run the many training sessions taxed the training resources and allowed only one topic to be delivered for the month.

During June 2002, two company officer level drills were presented on the training schedule. One drill was review of the operation of the departments boat and the other an hose drill based on NFPA 1410. The drills were conducted at the company level at a time and location determined by the company officer. This provided the greatest success rate of 94.4% (5.6% incompleteness rate). Again in July 2002 a single NFPA 1410 drill was presented on the schedule to the shifts. This drill had a 91.7% success rate (8.3% incompleteness rate). The feedback from the personnel was favorable and requests to continue this type of drill for training were received.

To determine the day of the week and time of day to schedule the various training tasks, the personnel survey provided the following information. Fifty-three percent of the respondents preferred that classroom training be conducted in the morning with 0900 hours being the preferred starting time. The respondents preferred an afternoon scheduled practical training session, although the morning was a very close second. The MTFD staffing study of 2000 indicated that staffing levels decreased steadily from 0900 hours to the lowest average levels at 1400 hours, indicating that scheduling morning training sessions provides a greater chance of completing the training objective (see Figure 1). To determine the day of the week to conduct training most respondents had no preference although 33% indicated a preference to avoid Mondays and Fridays. This too is supported by the 2000 staffing study that showed the staffing level on Mondays and Fridays had the fewest personnel available (see Figure 2).

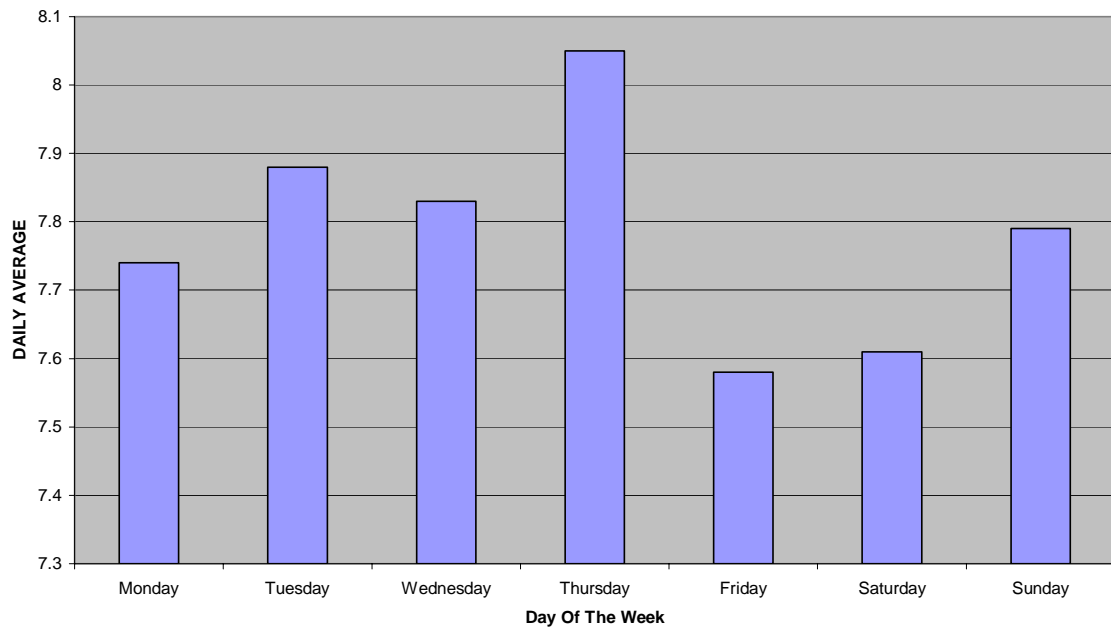
**Figure 1**

**MERIDIAN TOWNSHIP FIRE DEPARTMENT 2000 STAFFING AVERAGES**



**Figure 2**

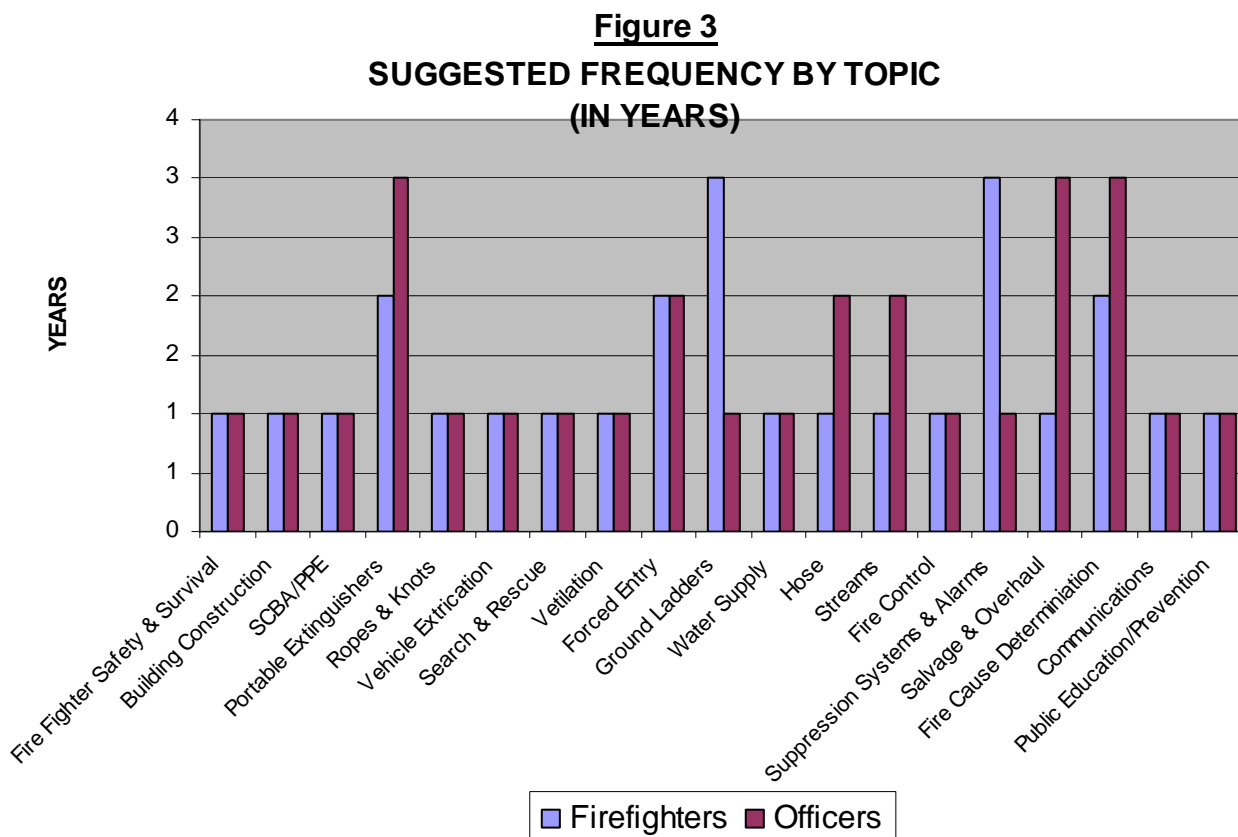
**MERIDIAN TOWNSHIP FIRE 2000 DAILY STAFFING AVERAGES**





4. What actions can be taken to increase the efficiency and quality of training delivery?

The first step is to amend the MTFD master training schedule to include to company level drills as outlined by NFPA 1410. Next is to develop and implement a company-officer directed, objective-based training policy by combining the elements outlined in the *Skill Session Training Program* (Smith, 1998), the *Norton Shores Fire Department Training Program Calendar* (Purchase, 2002) and *NFPA 1001*. The objectives are consistent while allowing the company officer to choose the training objective based on the need of their personnel.



To improve training content the majority opinion recommended that yearly training be conducted on all topics except the following; Forced entry, portable extinguishers, ground ladders, hose, fire streams, suppression systems/alarms, salvage and overhaul and fire cause. The suggested frequency of training for MTFD is depicted in Figure 3.

To illustrate the amount of training suggested for each topic, Figures 4 and 5 were created. Figure 4 depicts the average numbers of hours training each group felt is appropriate for classroom presentations on the specific topic.

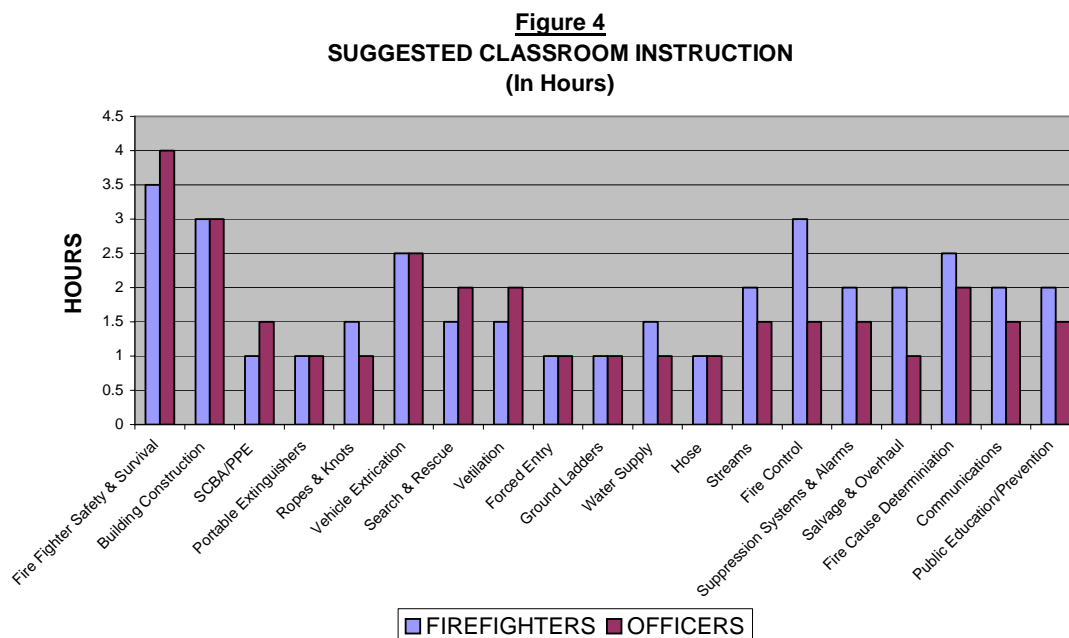
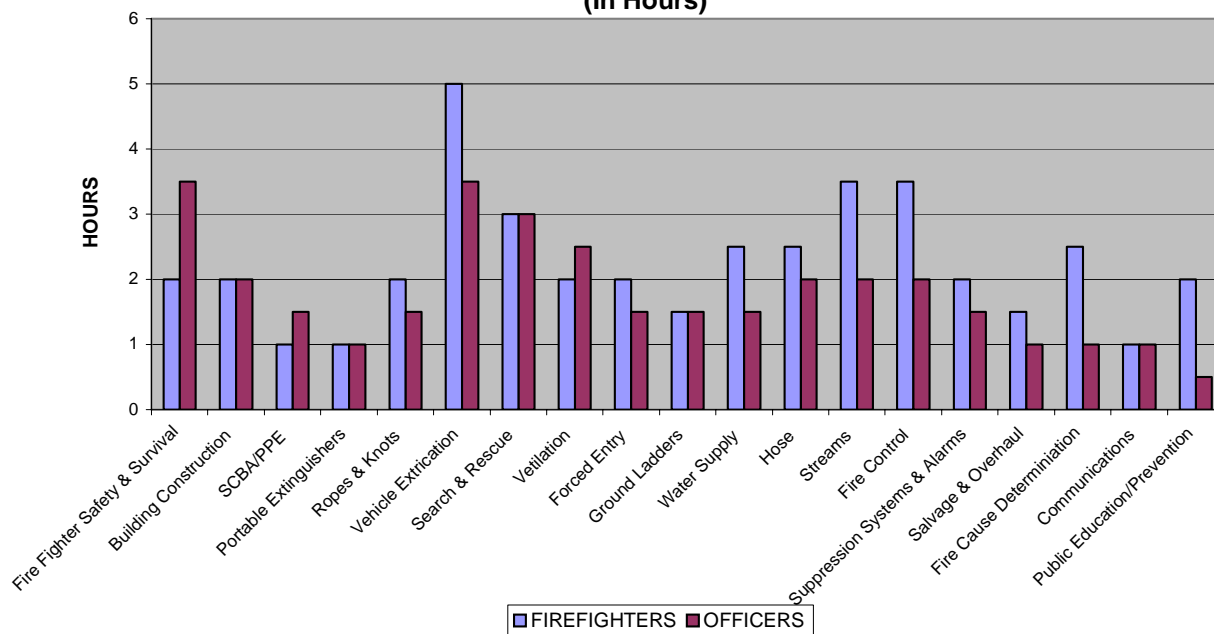


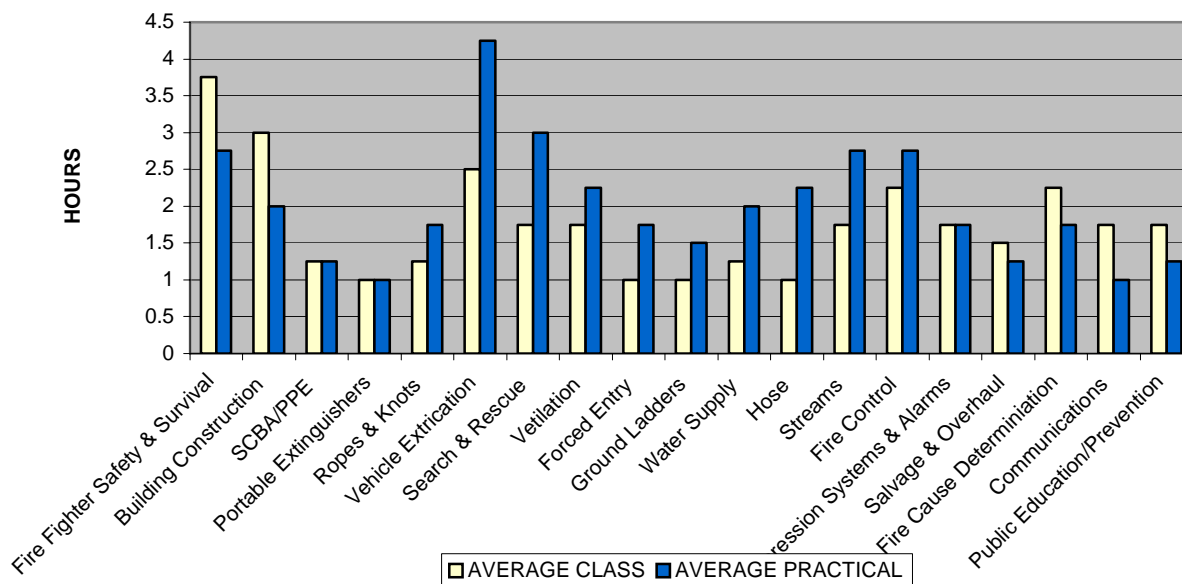
Figure 5 depicts the average numbers of training hours each group felt is appropriate for practical and hands on drills for a topic. Figure 6 combined the classroom and practical hours suggested by the firefighters and the officers and illustrated the average suggestions in a graph form.

In the various interviews with Assistant Chief Monnier a plan was submitted to Fire Chief Fred Cowper requesting budget considerations for off-duty training. Overtime costs and amounts were projected based on quarterly off-duty training drills. The request was for \$35.00 per hour per person for four hours, four times in 2003. The total amount requested was \$20,160.00 (4 hours/person/quarter @\$35.00/hour). This action, if approved, would assure that 16 hours of training per firefighter would be conducted without interruption. Another training related overtime request is also being made for the 2003 budget. \$50,000.00, of which \$36,190.00 is earmarked for overtime wages to firefighters who train for technical rescue operations with the regional technical rescue and hazardous materials team.

**Figure 5**  
**SUGGESTED PRACTICAL INSTRUCTION**  
**(In Hours)**



**Figure 6**  
**AVERAGE TOTAL HOURS OF SUGGESTED TRAINING**  
**(By Topic)**



## DISCUSSION

Most fire service professionals will agree that training “is an integral element within the infrastructure of any department” (Naum, 1989) and that the principal resource of a fire department is its highly trained personnel (NFPA, 1997a). The question “is whether [the fire service] can afford not to change the way it trains personnel” (Thornton, 1999) because the new mission is “to prepare our firefighters to use their heads as well as their hands” (Wilson, 1996) so that they “get so good at what you do” (Graham) so that the quality of service increases and the potential for injuries decreases.

To properly determine the direction of the Meridian Township Fire Department training program and subsequent policy a needs assessment was conducted prompted by the current Master Training Schedule and the results of the personnel survey. The

2002 Master Training Schedule contains 52 hours of intended training, the survey averaged increasing the hours to 62.5. Specific concerns expressed were that too much training energy was being spent on specialized rescue and not enough on the basics of firefighting. Additionally too few personnel were properly trained in the specialized disciplines. The quality of training is lacking and needs to be more realistic even to the level of re-institute live fire training.

Deficiencies noted in training from the company officer level were that MTFD conducts too few practical evolutions. Other areas from the company officers were to conduct more Incident Command System (ICS) training/scenarios and proper fireground procedures. The major issue noted, as a deficiency was the lack of pump operations, hydraulics and engineering training.

Training deficiencies at the Captain and Lieutenant level it was directed at safety and management. The suggestion is to train and certify the company officers to the NFA Incident Safety Officer level to decrease injury potential and increase safety. Management training will provide the company officer the tools to manage the personnel in their stations more effectively.

This feedback information is important and needs to be implemented but only after determining mandates, benchmarks and standards at the local level. The *Charter Township of Meridian 2002 Operating Budget* narrative states one goal is to provide “safer working environment through training”. This document has no legal bearing, but does drive the expenditure of funds within the governmental unit making training a fundable project. Located at the state and national levels were a mix of some mandates and recommendations that parallel each other in many ways.

*Michigan Laws, Regulations and Standards Pertaining to Training For Local Fire Departments* (Weisberber, 2001) provided a road map for developing a master training schedule. To the credit of MTFD established the Master Training Schedule meets the recommendations of this document.

Many documents that address fire department training are vague when providing direction on type, frequency, and content. The burden of these issues are up to the authority having jurisdiction to determine. As an example of this the section on training in the NFPA Fire Protection Handbook 18th edition (1997a) states:

The goal of any fire department training program should be to teach each person in the department to operate at acceptable performance levels for his or her rank and assignment. Ideally, training courses should have their own instructional objectives, a list of enabling objectives showing how the instructional objectives can be reached, and stated methods that explain how anticipated or desired behavioral changes can be measured (p. 10-17).

Nationally *NFPA 1500 Section 5.1.2* and at the state level the *Michigan Department of Consumer and Industry Services, Part 74* Michigan Rule 7411 (1) (a) requires the fire department to provide training for all department members commensurate with the duties and functions that they are expected to perform. What exactly does this mean?

According to Webster “commensurate” means equal or proportionate in degree and “duties” is defined as any action or task required by or relating to one’s occupation. Therefore the intent appears that firefighters must be trained to do the jobs they were

assigned to do. Once again a point is reached where the fire department must determine what the job assignments are and train appropriately to that level.

Part 74 Rule 7411 (2) and *NFPA 1500, Standard on Fire Department Occupational Safety and Health Programs* requires the fire department to prepare and maintain a written policy that establishes the type, amount, and frequency of training to be provided to fire service personnel. Like other sections the focus is broad and left to the fire department to decide. In the Meridian Township Fire Department the Master Training Schedule that meets the type, frequency and content requirements but still is lacking in quality.

To determine content of training *NFPA 1001, Standard for Fire Fighter Professional Qualifications* provides a more focused view as to type of training and acceptable performance. The *IFSTA Essentials of Fire Fighting fourth edition (1998)* gives detailed instruction to the NFPA 1001 objectives provide an acceptable foundation for any fire service training program.

Skill sessions, NFPA 1001 and NFPA1410 used as the foundation for on-duty drills coupled with off-duty specialized training and large scale drills can be used to increase the efficiency and quality of training within MTFD and “create solid, realistic, on-going, verifiable training” (Graham). An important element in training is to provide “[e]ducation [to] develop the employee as a person, not just the person as an employee” (Wilson, 1996) and that “[t]he design and development of a comprehensive training program...can be developed to meet the specific and individual needs of the organization” (Naum, 1989)

To facilitate developing a comprehensive program with employee development the *Skill Session Training Programs* (Smith 1998) provides a vehicle to allow for basic firefighting skills to remain honed by using the series of “mini-drills” as needed.

Because they are standardized drills based on the NFPA 1001 standard the junior members will be given an opportunity to develop by learning and the company officers have the opportunity to develop as the instructor and leader.

Another good company officer level tool is the implementation of NFPA 1410 drills. The 14 drills in the standard are excellent initial response drills with time benchmarks to complete. Preparation is simple and will provide a high level of consistency even if directed by different company officers at different times.

To document and provide for accounting of this type of company officer level drill training a form, such as presented in *An Overview of the Norton Shores Fire Department Training Program Calendar – 2002* (Purchase 2002) seems appropriate mostly because the MTFD average staffing levels for a 24 hour shift is that 7.8 personnel (Harper 2002). An objective based training program that is easy in preparation can be run between alarms and does not require a large amount of personnel for many of the sessions. Being that this is a new concept to MTFD, initially the program should be limited to a single year, re-evaluated and then a multi-year program can be established. This action will help prevent failure and raise the future quality of MTFD training.

If the 2003 budget request for \$20,160.00 is approved for off-duty training another assessment must be made to determine exactly which drills are the most



needed. From the survey the topics appear to be extrication, pump operation, standpipe and sprinkler operation and Rapid Intervention/safety issues.

From the firefighter survey responses the greatest deficiency in training expressed continues to be the lack of adequate staffing levels to properly run drills and answer the routine calls for service. This staffing issue has hung over MTFD since the opening of the third fire station in 1991. The average 7.8 persons on duty have great difficulty drilling and responding to the calls adequately. To increase the quality of training, personnel must be committed to training on a consistent basis.

The study of training interruptions provides supporting information relating to the staffing concern. Afternoon training has become ineffective to the lack of personnel to handle the alarm volume and to conduct realistic quality training. By changing training sessions so that half the shift remained a station to handle the alarms while the other half trains allowed for a greater completion rate of training. The negative result was that the drills were smaller and the impact on the Training Division was enormous.

## **RECOMMENDATIONS**

From the research conducted, several recommendations should be considered. First, the Meridian Township Fire Department Master Training Schedule for 2003 should show an increase in hours to from 52 to 62.25 hours. A training policy (Appendix E) that directs company officer level training should be implemented which, as its purpose, is designed to decrease reliance on the Training Division to conduct scheduled training. This policy will allow the company officer to schedule training as dictated by staffing,

alarms and the needs their personnel. In addition to providing direction and consistency in training, the company level drill is a tool that the company officer can use to aid in determining and correcting performance deficiencies of their crew.

Because of the requirement to have training commensurate with the duties firefighters are expected to perform a continuous evaluation of training must be conducted. This can be accomplished by querying the personnel at senior staff and Battalion level meetings but mostly from a post incident analysis conducted after significant events. It may be necessary to survey the fire fighters once again to determine the specific direction a long term training policy will go. New technology, equipment changes and firefighter safety skills must be sought out and evaluated. Whenever new information, equipment or procedures are implemented within MTFD the training objectives and policies must reflect theses changes.

Initially the plan should be for a single year, after the first year re-evaluate the policy, make the necessary revisions and re-issued as a multiple year plan. By providing a tool to the company officers greater training efficiency is gained and the focus of routing training will meet the needs of the personnel.

The objectives for the company officer directed drills is listed and explained in Appendix G. This document references the IFSTA Essentials Fourth Edition as the foundation for the objectives. Not only does it provide an excellent reference it also provides documentation of the training content. To document frequency a tracking sheet was developed to show the progress of each individual as to when and what was accomplished (Appendix F).

To address the issue of larger-scale drills and specialized training, such as technical rescue, a request for \$20,160.00 in the 2003 budget was submitted. These funds will allow MTFD to train personnel while off-duty on overtime. The hope is to conduct four- 4 hour off-duty training sessions to train fire fighting skills, tactics and safety procedures to each person assigned to fire suppression. An Additional \$50,000.00 (\$36,190.00 for overtime) for technical rescue training was requested so that quality training can be provided to the personnel who are expected to provide these services.

The intent of the training policy is to help assure that adequate training of firefighters is conducted and that the fire department is in compliance with state mandates and NFPA standards. Adequate training for fire suppression and emergency response assures that MTFD takes care of its own safely, efficiently and legally with the end goal of making the community a safe place to live, visit, work and shop.

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