



Final Report

**Southwest Supermarket Fire
35th Avenue and
McDowell Road**

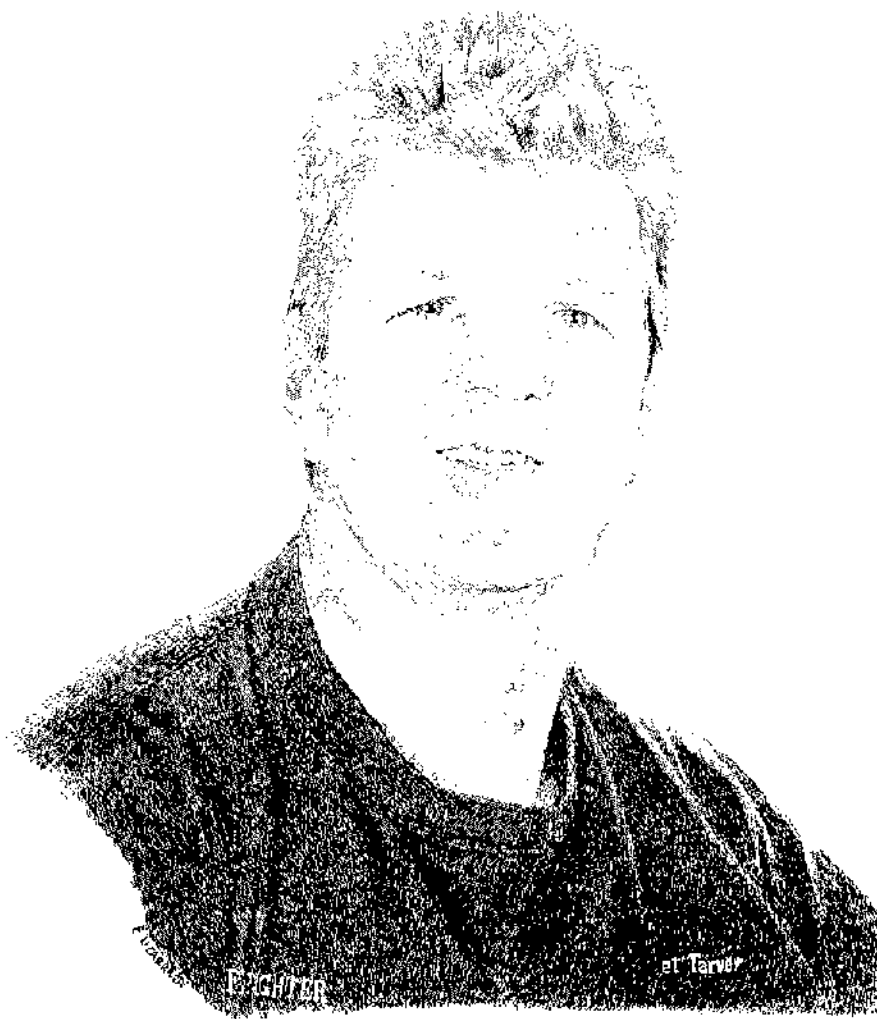
**March 14, 2001
Incident #01-045301**



**Phoenix Fire Department
150 South 12 Street
Phoenix, Arizona 85034**

March 12, 2002





*In memory of Bret Tarver,
A unique human being,
a loving family man and an extraordinary Firefighter*

September 11, 1960 - March 14, 2001

FINAL REPORT FROM 35TH AVENUE AND MCDOWELL ROAD

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DEDICATION

The Phoenix Fire Department would like to dedicate this report, its findings, and the lessons learned to Firefighter Bret Tarver, his wife Robin, their daughters Rachel, Sarah, and Kaitlin, and to all the members of the Phoenix Fire Department. Bret will always be remembered as a strong, knowledgeable, loving father and firefighter. This fire has become a benchmark for the Department. The hope of the Phoenix Fire Department is to never repeat an incident such as this again.

Throughout the year following Bret's death, many Department members have dedicated hundreds of hours in improving the Phoenix Fire Department operations and the safety of its members. Without Bret's supreme sacrifice, it would have taken many years to accomplish this mission.

Bret's contribution as a member of the Phoenix Fire Department will never be forgotten. Today's firefighter, and all future firefighters, will benefit from the knowledge and experiences gained – not only as a result from this tragic event – but also through the stories of Bret's life and dedication to the job. We hope that all may receive some consolation and a sense of solemn pride in believing that his great sacrifice will prevent other fire department family members from experiencing this same tragic loss.

The Phoenix Fire Department extends its sincere thanks for all of the cards, letters, phone calls, support and assistance its received from the surrounding valley fire departments, fire departments nation-wide, the Phoenix Police Department, the National Fire Protection Association, the National Institute of Occupational Safety and Health, the International Association of Fire Fighters, and the community during this difficult time.

We dedicate this to you Bret, our beloved brother.

CHAPTER II.

EXECUTIVE OVERVIEW

The purpose of this report is to examine the events that occurred at the Southwest Supermarket Fire and to make recommendations to prevent such a tragic outcome from occurring again.

On March 14, 2001, Firefighter/Paramedic Bret Tarver died in the line of duty after running out of air from his self-contained breathing apparatus (SCBA) and becoming disoriented inside the burning supermarket. He died of carbon monoxide poisoning while battling the 5-Alarm blaze. The fire started on the exterior of the structure and extended to the interior through openings in the loading dock area of the structure. The department had not experienced a firefighter fatality on the fire ground in over 20 years prior to March 14, 2001.

This report was developed and written as a joint labor/management undertaking that was overseen by the Phoenix Fire Department's Deployment Committee. The Phoenix Fire Department has a rich history of a successful labor/management relationship. Immediately following this incident, Fire Chief Alan Brunacini and the IAFF Local 493 President Billy Shields, tasked the Deployment Committee to ascertain exactly what happened at the Southwest Supermarket incident and determine how to prevent a similar tragic outcome from ever occurring again within the department. An ad-hoc "Recovery Subcommittee" was formed, the project was titled "The Recovery", and Captain Todd Harms was selected as the project manager.

The structure, contents, volume of fire, concealed spaces and other strategic and tactical considerations constituted a significant fire problem for initial arriving companies. Simply put, the best way to describe the incident is to quote Chief Brunacini: "This was a bad ass fire in a bad ass building".

It must be stated that all fire department personnel performed at exceptional levels. During the incident, there were numerous displays of heroism demonstrated by members of the department. Literally, each and every member of the department was afforded an opportunity to participate in the "Recovery Process". Through the labor/management system all members of the department were invited to participate in the "Recovery". Several Officers' meetings were dedicated to the Recovery and numerous labor/management subcommittees devoted hundreds of hours toward the outcomes developed in this report.

The National Institute of Occupational Safety and Health (NIOSH), Arizona Occupational Safety and Health Agency (OSHA), and the National Fire Protection Association (NFPA) completed simultaneous investigations of the incident. Over 100 of the firefighters and officers that responded to this incident were interviewed by the investigating agencies.

This report analyzes the tasks of fire companies, tactical officers (sectors), and strategic (incident command team) levels of the fireground organization. Clearly, to prevent a similar occurrence, all three must be investigated and evaluated. The areas evaluated by the various subcommittees were:

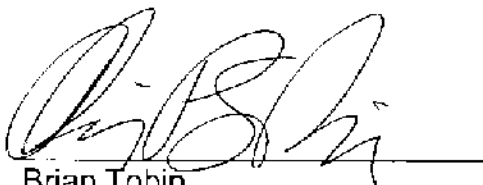
- Incident Scene Operations
- Equipment
- Training
- Technology
- Operations
- Administration
- Logistics
- Planning
- Safety Systems
- Communications

Each of the areas evaluated by the various sub-committees produced a list of recommendations for action by the department. The entire inventory of recommendations is included in Chapter IX of this report. Listed below is a synopsis of the recommendations that the Fire Department must achieve to prevent a similar outcome at a future incident.

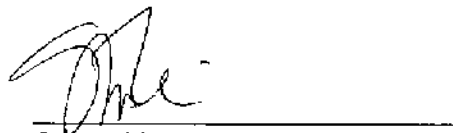
- Personnel Recommendations
 - Battalion Chiefs
 - Tactical Staffing Reinforcements
 - 56-Hour On-Duty Safety Battalion Chiefs
 - Battalion Training Personnel
 - Heavy Rescue Companies
 - Battalion Level Tactical Pre-Planning Officers
 - District Safety Officers
 - CV-2 Staffing
 - Dispatch and Deployment

- Equipment Recommendations
 - SCBA Improvements
 - SCBA Communications
 - Fallen Firefighter Harness
 - Hose Exit Arrows
 - Emergency Transfill Hose (BC RIC Bags)
 - Company Level RIC Bags
 - Air Hose for the Utility Trucks
 - Stream Light Boxes
 - Accountability Name Decals
 - Hose Accountability Markers
 - Integrated Turnout Rope Systems
 - Light Sticks
 - Personally Assigned Tools
- Standard Operating Procedure Revisions
- Technology Enhancements
- Training Curriculum
- Strategic Level Considerations

The completion of this investigation signifies a substantial achievement by the Department. It identifies the events that took place on March 14, 2001 at Southwest Supermarket and maps the future for the Phoenix Fire Department. Although it will take a few years to achieve the recommendations in this report, it clearly lays the groundwork for safer operations within the department, while providing the elevated level of service the citizens of Phoenix have grown to expect and deserve.



Brian Tobin
Co-Chair, Deployment Committee



Steve Kreis
Co-Chair, Deployment Committee

CHAPTER III.

RECOVERY COMMITTEE / MEMBERS

Following Firefighter Tarver's funeral, the department entered into the "Recovery Process". The main goals were to investigate the events at 35th Avenue (what happened and why), and to prevent a similar incident from ever happening again within the Phoenix Fire Department. The Recovery Team is co-chaired by Assistant Chief of Operations Steve Kreis and Local 493 Secretary Brain Tobin, who also co-chairs the department's Operations Team. Captain Todd Harms was placed on special assignment under the Operations Division to perform the day-to-day management of the recovery.

- **The Investigation**

The Department worked with the National Institute for Occupational Safety and Health (NIOSH), the National Fire Protection Association (NFPA), and Arizona Division of Occupational Safety and Health (OSHA) in completing the investigation (Appendix A). Along with these external organizations, the fire department arson squad, with the assistance of Phoenix Police Department, completed an internal/criminal investigation. Seven full days of interviews and a complete re-creation of the incident scene were completed with the outside agencies. Over 100 firefighters involved in the incident were interviewed to fully assess every detail of the incident. This information was compiled and entered into the recovery process.

Each organization has provided our department with input and recommendations for improvement of incident scene operations:

- **The Recovery**

The Recovery Team formed the following four Labor/Management Teams:

- 1. Incident Scene Operations**

Co-Chairs:	Darrell Segebarth	Deputy Chief
	Tim Knobbe	Captain / Local 493

Objective:

Provide a review of all current Standard Operating Procedures used at 35th Avenue and make recommendations for improvement

2. Equipment

Co-Chairs: John Maldonado Deputy Chief
John Teefy Captain / Local 493

Objective:

Review all currently assigned equipment use at 35th Avenue. Test and evaluate new equipment currently available and make recommendations for future considerations.

3. Training

Co-Chairs: Ron Dykes Deputy Chief
Mike Gibson Captain / Local 493

Objective:

Develop department-wide training programs to assist in the recovery efforts and develop new training programs to increase the safety and survival of firefighters.

4. Technology

Co-Chairs: Bobby Ruiz Deputy Chief
Brain Moore Firefighter / Local 493

Objective:

Evaluate new technology that is currently unavailable but could have assisted at 35th Avenue.

Each committee has a Labor/Management co-chair and all department members had direct input into the process.

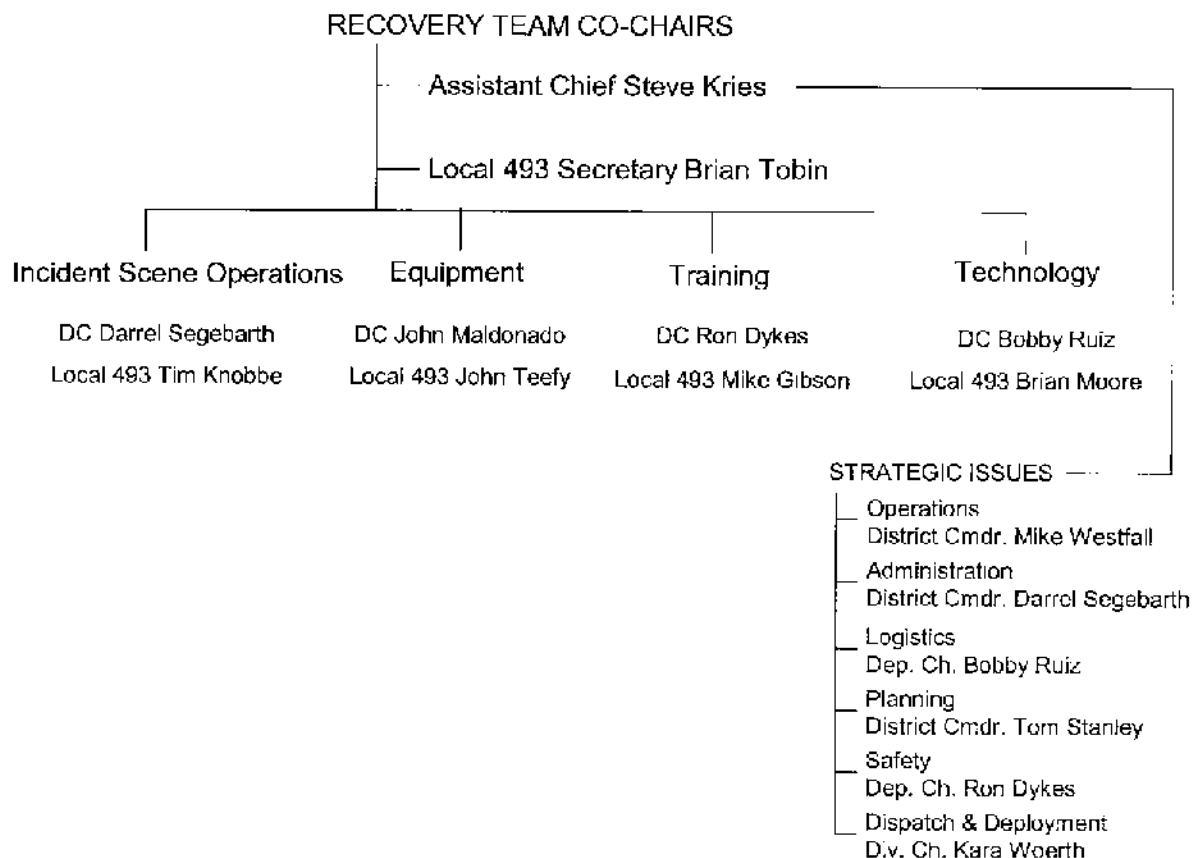
Management also formed six committees to focus on the strategic level of the incident scene. Each committee was chaired by a Chief Officer who reported to the Assistant Chief of Operations.

- | | |
|-----------------------------------|---------------------------------------|
| 1. Operations | Deputy Chief Mike Westfall |
| 2. Administration | Deputy Chief Darrell Segebarth |
| 3. Logistics | Deputy Chief Bobby Ruiz |
| 4. Planning | Deputy Chief Tom Stanley |
| 5. Safety | Deputy Chief Ron Dykes |
| 6. Dispatch and Deployment | Division Chief Kara Woerth |

This process had never been attempted before in the American Fire Service. It's open, allows input from all levels, and gives members an opportunity to challenge the system as well as alter and improve it as appropriate.

Each group has been able to compile recommendations for the department. Some are very simple and have been implemented. Others are large items and, after extensive review, are being recommended for implementation.

RECOVERY TEAM



CHAPTER IV.

INTRODUCTION

The Phoenix Fire Department

The City of Phoenix Fire Department is a career department with 1,309 uniformed and 304 civilian members. The department protects 1.3 million residents of Phoenix within the 478 square miles that comprise the city limits.

The Phoenix Fire Department maintains an active automatic and mutual aid system that assures that the closest unit responds to an emergency, regardless of the city in which the emergency occurs. The Fire Department's Alarm Room provides dispatch and communications services for 19 valley fire agencies.

The Fire Department provides fire protection, emergency medical, technical rescue, hazardous materials, public education, fire prevention, public information, and support services. Emergency medical services include basic and advanced (paramedic) level care, as well as emergency ambulance transportation.

The Fire Department staffs the following units each day:

- 13 – Engine Companies providing fire and BLS medical care
- 40 – Engine Companies providing fire and ALS medical care
- 13 – Ladder Companies providing fire and BLS medical care
- 22 – Ambulances (Rescues) providing fire and BLS medical transportation
- 7 – Ambulances (Rescues) providing fire and ALS medical transportation
- 7 – Battalion Command units for management and incident command
- 8 – Hazmat, Command, and Support Vehicles
- 5 – Airport Rescue Fire Fighting Vehicles

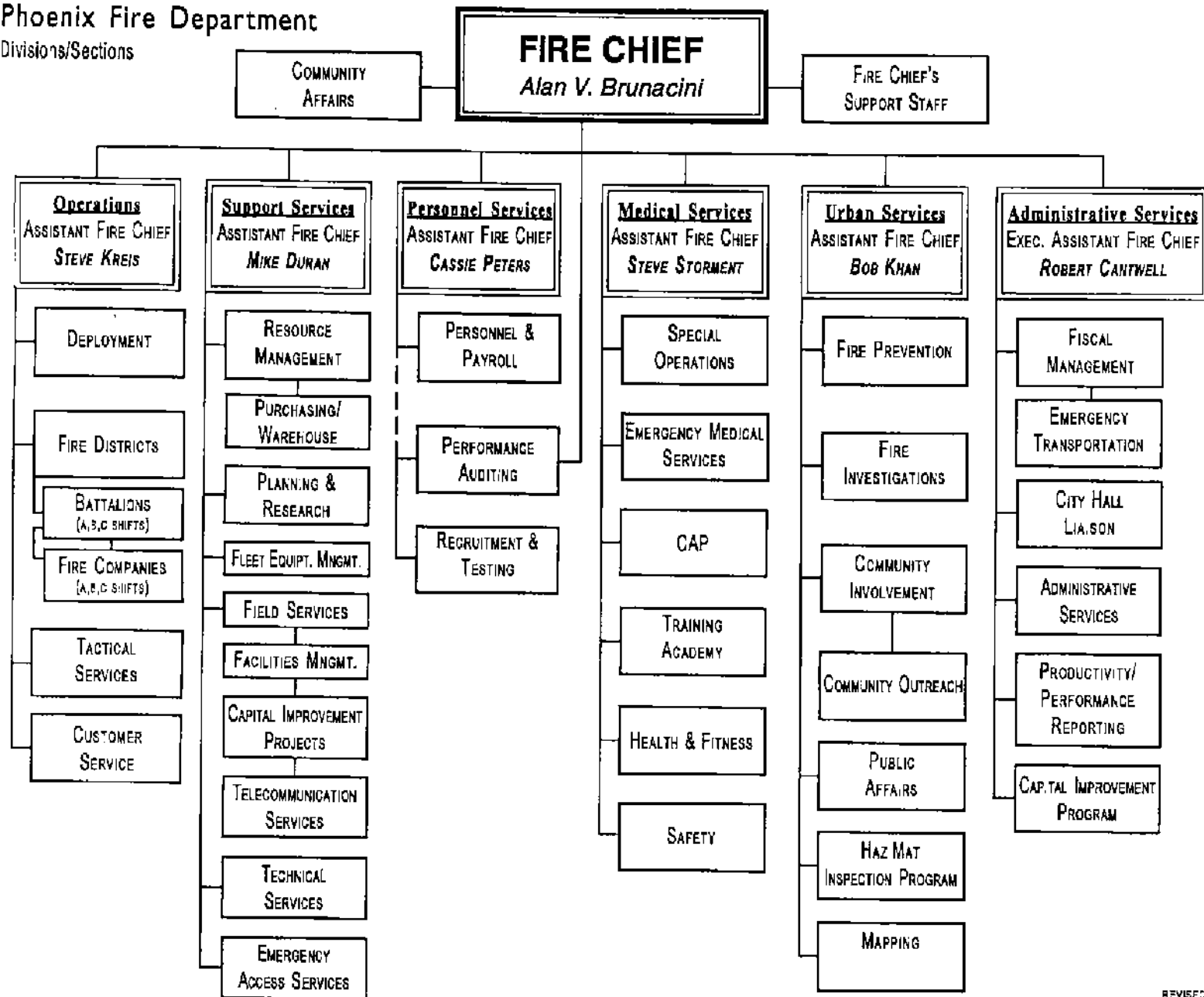
A peak total of 356 firefighters are on-duty each day.

In 2001, the Phoenix Fire Department responded to a total of 133,458 emergency incidents. Of these incidents, 104,032 were in medical emergencies and 16,442 were fire emergencies. Phoenix Fire Department ambulances were dispatched to transport 50,767 customers to hospitals, and Special Operations firefighters responded to 841 hazardous materials and technical rescue incidents.

The average response time from the dispatch of firefighters to an emergency to their arrival on the scene of the emergency: Four minutes and 48 seconds.

Phoenix Fire Department

Divisions/Sections



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CHAPTER V.

THE STRUCTURE

Southwest Supermarket was constructed in 1956 and was approximately 20,132 square feet. The Ace Hardware and the clothing store connected to the southeast side of the market were approximately 6,773 square feet. The property was annexed into the City of Phoenix in 1958.

The building was constructed upon a "pad" of concrete with no sub-levels. The walls were constructed of 12" x 4" x 16" concrete cinder block (un-reinforced CMU's). Horizontal shear reinforcement was found at approximately every 24 inches on center. The structural framework for the roof assemblies consisted of steel columns and beams with open web steel truss. The beams in the store area were setting in beam pockets. Holding the beams were 6" pipe columns. The trusses were placed 6 feet apart, with purlins spanned across from truss to truss to support the roofing materials. On the east side of the supermarket there was an approximate 12' cantilever that covered the front entrance. In the rear storage area there were no beams, only trusses spanning from east to west.

There was a small, second-story office area located between the rear storage area and the supermarket. Access to this area was through a single stairwell located off of a vegetable prep room (see *diagram*).

The roof assembly was a wood panelized system, consisting of wood purlins spanning from the trusses with a plywood deck and a built-up roof system. The roofing material was ½" decking with some type of asphalt material. The ceiling of the market was attached to the bottom cord of the trusses by a framework of 2x4's, creating an approximate 4' attic space. Except for the front of the store, there was a 12-inch high parapet wall around the occupancies.

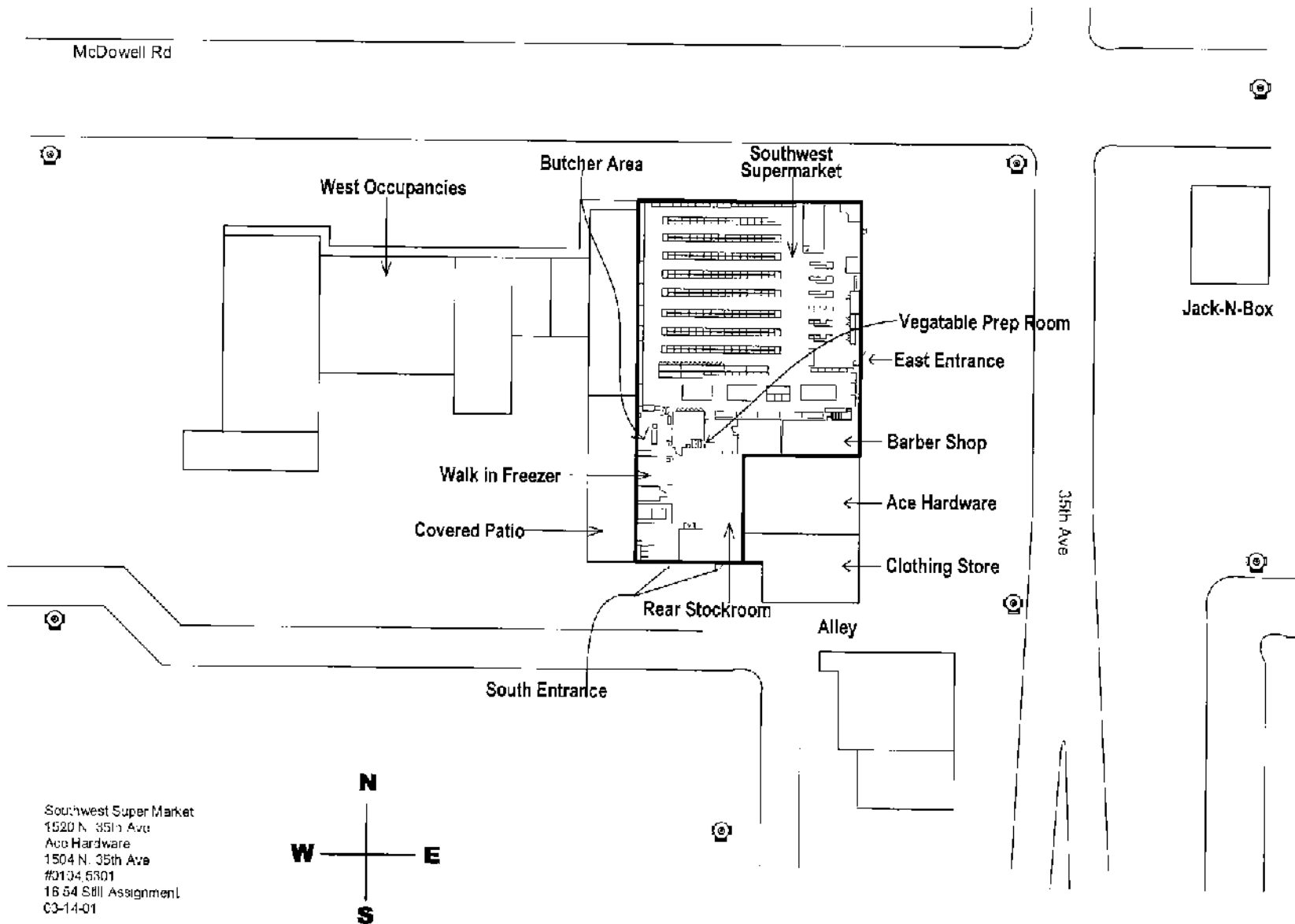
Separating the supermarket shopping area from the warehouse was a brick wall. This wall did not extend the total distance, but was filled in on the west end for approximately 20 feet by steel 4 x 8 lintel beam. In this same wall there were two old openings approximately 3'x 3'. These openings allowed for fire extension from the south storage area into the supermarket attic space.

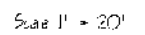
The Ace Hardware store (6,700 sq. ft.) was separated from the supermarket by un-reinforced CMU walls with an approximate 2-hour fire resistive rating. The Ace Hardware and clothing store were all constructed similarly with access from the east (front doors) and south sides (rear stockroom doors).

The east side of the structure had glass filled aluminum framing from the floor to ceiling (22 feet high). Approximately eight feet up on the inside of the store the glass was covered with sheets of plywood. Two 3' x 6' foot doors provided the only entrance to the supermarket for customers on the east side. On the south side of Southwest Supermarket, through the stockroom, there was one man door 3' x 6' wide and 1 rollup door that was approximately 8' wide. The man door was a metal door with a metal jam that was very poorly sealed.

On the south side of the building there was a rear loading dock that was approximately 2 feet high and 3 feet deep covering the entire length of the rear area. Next to the loading dock between the two doors was a trash compactor, a dumpster, and numerous bales of cardboard. There was another dumpster and more bales of cardboard to the east of the rear door.

On the south side, in the alleyway, was a power pole approximately 20 feet away from the rear entrance. There was a bank of three transformers with an electrical drop that fed the entire complex. The electrical wires entered above the rear loading dock and were directly above the initial fire location.





CHAPTER VI.

THE FIRE

Overview

The area of origin was determined to be the exterior debris pile on the south side of the exterior the Southwest Supermarket. The pile was located approximately four feet from the building between a cardboard box bailer and a dumpster. On the loading dock, there were other ordinary combustibles, as well as several plastic milk crates. The fire traveled west to the bailed cardboard and north to the combustibles on the loading dock. Extension to the market was through the southeast man door into the rear stockroom. During the afternoon of the fire, a strong wind was blowing out of the southwest. This wind was a critical factor in "pushing" the fire into the rear storage area. The fire then spread north through the stockroom, into a second story office area, and finally into the open store.

During the course of the investigation, there were no accidental causes discovered. There were no electrical appliances, thermal heat, mechanical, and no known accidental causes. The incident is still under investigation.

Synopsis of Events

On Wednesday, March 14, 2001, a report of a debris fire was received from a caller in the 1500 block of North Lynwood Street. The caller reported fire in a pile of debris at the rear of an Ace Hardware store located at 35th Avenue and McDowell Road. Engine 24 was dispatched to the fire reported by the caller.

Before the incident was dispatched, Phoenix Fire Department vehicles in the area saw smoke and asked the Alarm Room, by radio and telephone, if there was a working incident in west Phoenix. One of those units was Battalion 3, the command officer responsible for the west Phoenix area. Based on the volume and nature of the smoke seen, Battalion 3 ordered additional Fire Department resources dispatched to assist. Battalion 3 also responded to the incident.

The Fire Department unit that is closest to 35th Avenue and McDowell is Engine 14. Fire Station 14 is located at 1330 North 32nd Avenue. At the time of the dispatch, Engine 14 was out of service as the engineer of the company returned to quarters after the unit had undergone some mechanical repairs. The Engine 14 engineer heard the dispatch of Engine 24, saw the smoke in their area, called Fire Station 14 to alert the rest of the crew, and picked up the crew for their response to the call. The captain of Engine 14 added his unit to the incident by computer and informed Battalion 3 of their arrival on the scene.

Battalion 3 ordered Engine 14's crew to enter businesses that back up to the debris fire to evacuate occupants and to determine if fire had spread to the inside of these businesses. Another fire company was in the process of searching a clothing store and the hardware store. Engine 14's crew searched a barbershop that was adjacent to the Southwest Supermarket, found it to be unoccupied and clear of fire, and moved on to the next business, the Southwest Supermarket.

When they entered the supermarket, Engine 14's crew found only light smoke at the ceiling of the main store. The crew moved to the southwest portion of the building and entered a storage area. They found heavy smoke and moderate heat in the storage area. They reported their finding to Battalion 3 and went back to the front of the store to get a hoseline from another unit that had arrived at the front of the store, Engine 3. A hoseline from Engine 3 was extended to the storage room and the crews of Engine 14, Engine 3, and Rescue 3 applied water to the fire. Visibility in the storage area was near zero and the ability to see in the supermarket worsened quickly.

Firefighter Tarver, a member of the Engine 14 crew, told his captain that he was running low on air in his self-contained breathing apparatus (SCBA) and needed to leave the building. The captain gathered his crew together and told them to follow the hoseline out to the exterior. The engineer led the way out, followed by two firefighters, with the Engine 14 captain at the back.

As the two Engine 14 firefighters, including Firefighter Tarver, turned to leave, they became disoriented and ran into a wall. They got back up, turned in the direction that they thought was the correct way to go, and ran into another wall. Somehow both firefighters ended up in the rear portion of the main supermarket space. Firefighter Tarver called for help on his radio. The firefighter who was with Firefighter Tarver became separated from him and later exited the building to the outside with the assistance of other firefighters.

The Engine 14 captain emerged from the building and looked for the other members of his crew. The Engine 14 engineer was outside and had also been looking for the firefighters. Battalion 3 could see that fire was developing in the supermarket and began to order crews out of the building. Firefighter Tarver heard these radio transmissions and repeated his call for help.

The Engine 14 captain heard Firefighter Tarver's request for help. He notified Battalion 3 that he had two firefighters that were unaccounted for. The Engine 14 captain quickly relayed to the captain of Engine 21, telling him to follow Engine 3's line to Firefighter Tarver's last known location.

The Engine 21 captain and two firefighters entered the building immediately and followed the hoseline. Visibility in the supermarket had dropped to zero. They came upon Firefighter Tarver. He was disoriented, out of air, standing on his feet, and calling for help. The Engine 21 captain brought Firefighter Tarver down to the hoseline and

instructed him to follow it to the exterior. Firefighter Tarver had become incapacitated by the smoke and could not follow the instructions of the Engine 21 captain. Firefighter Tarver crawled a short distance, then stood up, turned, and disappeared in the smoke. The Engine 21 crew was low on air at this point and had to leave the building.

When Battalion 3 heard that there were two Engine 14 firefighters missing, he immediately activated two Rapid Intervention Crews (RIC's). The function of these crews is to go into a hazardous situation and rescue firefighters who are in danger. The members of Engine 18 and Ladder 9 entered the supermarket from the east with extra breathing air equipment to search for Firefighter Tarver and the other firefighter from Engine 14. While the RIC crews were unable to locate the Engine 14 firefighters, they did remove other firefighters from the building. As they left the supermarket, the interior of the supermarket became fully involved with fire. Further entry from the east was impossible.

At the time the RIC crews were entering from the east, a firefighter on Rescue 3 heard Firefighter Tarver's calls for help. He found Firefighter Tarver in a meat preparation area just off the main retail area of the supermarket; he was conscious and calling for help. Both firefighters were out of air and attempted to crawl to safety. The Rescue 3 firefighter used his radio to tell Battalion 3 that he was with Firefighter Tarver. Both firefighters became incapacitated, Firefighter Tarver in the meat preparation area and the Rescue 3 firefighter in a meat cooler that was attached to the meat preparation area.

As Engine 21 and the RIC teams were exiting the east side of the building, Engine 25's crew was searching from the south. As they moved northward, the captain of Engine 25 followed a path to his left. He entered the meat preparation area and followed the sound of the Rescue 3 firefighter's voice to his position in the meat cooler. Visibility in these rooms was zero. The Rescue 3 firefighter was able to tell the Engine 25 captain that he was with Firefighter Tarver before he became unconscious. The Engine 25 captain turned the Rescue 3 firefighter over to his crew; they removed him from the building with the assistance of other firefighters.

The Engine 25 captain attempted to move Firefighter Tarver by himself, but was unsuccessful. The captain ran out of air at this time. He turned and saw that the interior of the supermarket was fully engulfed with fire and that escape to the north was impossible.

Another crew that was searching for Firefighter Tarver heard the sound of Firefighter Tarver's PASS alarm and entered the meat preparation room. As the Engine 6 crew entered the room, they came into contact with Firefighter Tarver and the captain of Engine 25. The captain of Engine 25 was removed to the south exit by other firefighters.

The engineer and senior firefighter from Engine 6 repositioned Firefighter Tarver and were able to remove him from the meat preparation room into the main storage room.

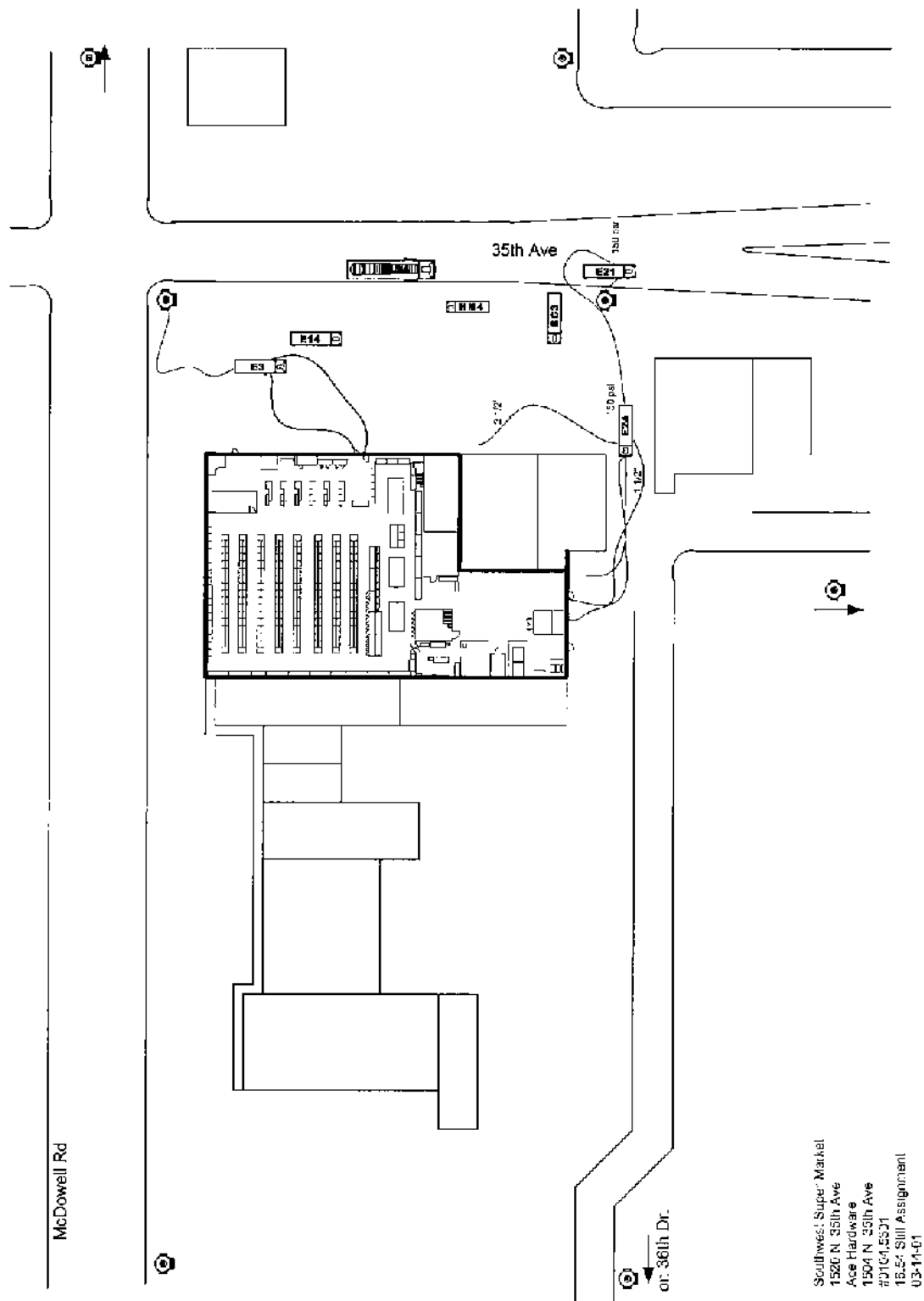
They were relieved by a series of other crews that moved Firefighter Tarver, with great difficulty, to the south exit of the supermarket storage room.

During the rescue, the movement of Firefighter Tarver was made extremely difficult by a multitude of hindrances, including: limited visibility, water from the firefight, heat conditions, warehouse obstructions, and falling debris. In addition, rescue efforts were severely compromised by limited remaining air supply in the rescuers' breathing apparatus, debris caught in Firefighter Tarver's protective clothing and equipment, and Firefighter Tarver's physical size.

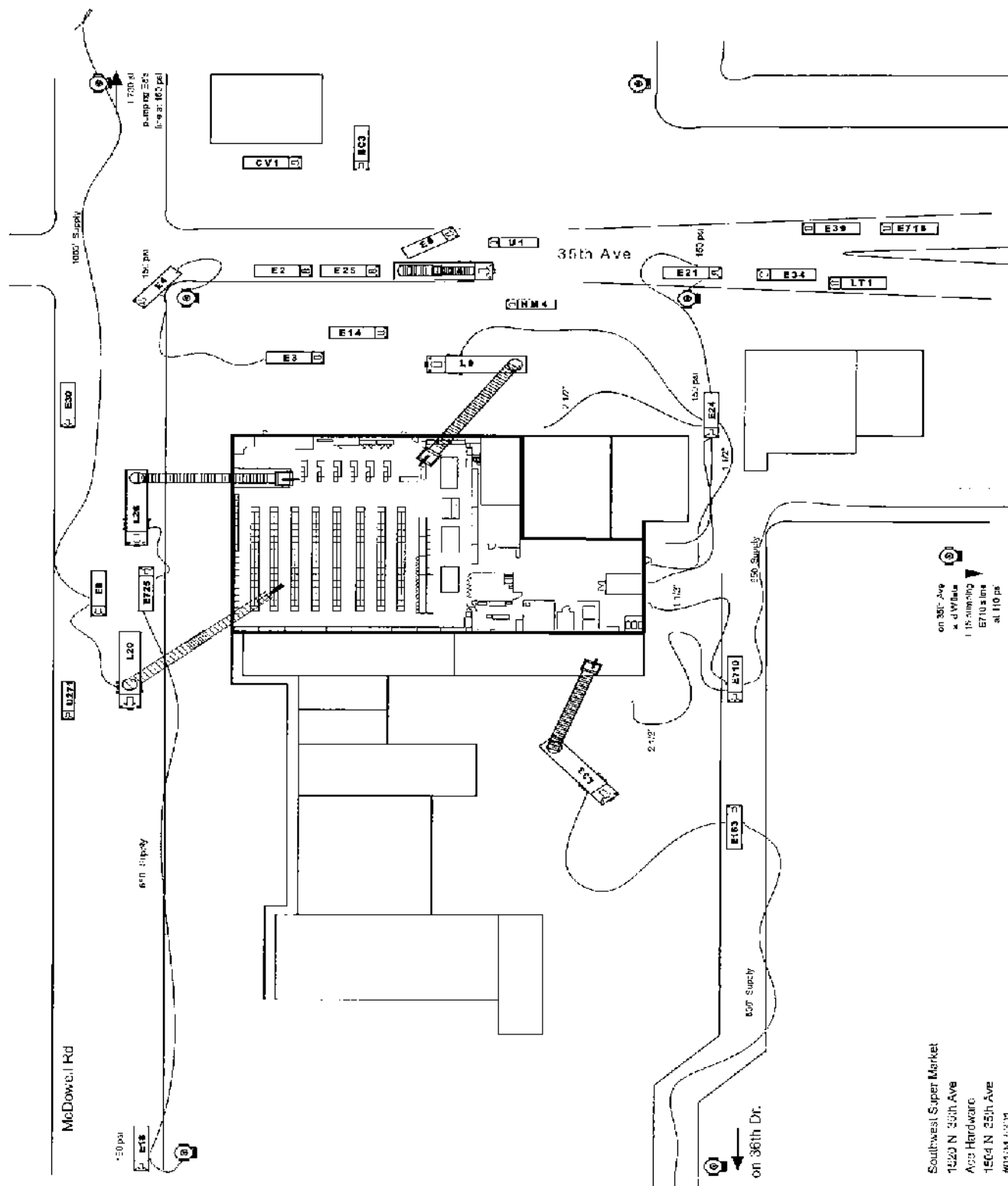
TIMELINE

Engine 24 Dispatched	16:54:03
Engine 24 On-Scene	17:00:30
Battalion 3 On-Scene	17:00:30
Engine 14 Adds to the Call and Arrives On-Scene	17:01:49
Engine 3 Reports a Working Fire in the Storage Room	17:11:19
Firefighter Tarver Requests Help	17:26:38
Battalion 3 Assigns RIC Teams	17:27:16
Firefighter Tomazin with Firefighter Tarver	17:33:57
E25 Captain with Firefighters Tomazin and Tarver	17:36:46
Firefighter Tomazin Being Treated Outside	17:42:28
Firefighter Tomazin Loaded for Transport	17:46:47
Engine 6 Captain with Engine 25 Captain	17:47:29
Engine 25 Captain Out of the Building	17:49:26
Engine 6 Requests Help with Firefighter Tarver	17:52:56
Firefighter Tarver is Out of the Building	18:19:15

Initial Response



Apparatus Placement / Defensive Operation



CHAPTER VII.

COMMAND

35th Avenue Command Team Synopsis

'Command', who had it, and where was it located throughout the 35th Avenue fire, followed Command Procedures outlined in Operations Volume II. Through the entire duration of the event, 'Command', and all of the parts that make up the structure of the Incident Management System, was well defined and well known to all the units operating on the fire ground.

Engine 24's acting captain took Command upon arrival, announced that he had Command, and reported an outside fire in a large dumpster, just west of the supermarket. The dumpster was at the rear of the Southwest Supermarket in a narrow alley. There was limited and difficult access. In addition, the day was very warm for that time of year, and the wind was blowing west to east, which made the supermarket that much more of an exposure. The smoke that was generated from the dumpster was lying very low due to the 'inversion factor', and this was a critical factor throughout the incident. And finally, the other critical fire ground factor which Command (E-24) had to consider was that the dumpster was situated directly under three large power line feeders into the supermarket, which were arcing and had fire impingement. Engine 24 reported all of these conditions (factors) upon arrival. Engine 24 was able to make some progress on the fire.

Battalion 3 arrived on the scene shortly thereafter, and took Command from E24 and maintained it throughout the incident. After initial 'knockdown' of the fire on the exterior, Command (BC 3) ordered first alarm companies to check all adjacent buildings for extension. This included the fire building, Southwest Supermarket. Initial reports from operating crews reported to Command that there was no extension into the adjacent buildings. However, from the street it appeared that something was still working somewhere in the building due to the amount of 'low lying' smoke in the area, particularly smoke laying low over the market and banking down to the parking lot to the east.

Command had crews continue checking for extension, but the arrangement and access made it difficult to find the exact location of the extension. Crews on the exterior of the building were able to 'pinpoint' clearly that there was a working fire in the super market and reported to Command.

This report was based on a view that the crew had of the building. Command called for a 2nd alarm based on this report, and the fact that crews had been unable to attack the seat of the fire that had extended into the building.

The Support Officer and Senior Advisor were already enroute and arrived at approximately the time the 2nd Alarm was dispatched. Upon the Support Officer's arrival, he ordered that the Command Van be set up on the east side of the structure for an optimum view, and reported to the Suburban to support the IC (BC3). The Support Officer (BC1) and the IC (BC3) had a short discussion regarding the rapidly deteriorating conditions, and a plan was discussed to go 'defensive', (write off that which is lost, and pull crews out of the structure). The 'all clear' and the plan for withdrawal had been established. It was during this discussion that the first 'Mayday' was received by Command.

At the time of Firefighter Tarver's mayday, the Senior Advisor was in the Command Van assisting with its set-up. The Support Officer (SO) told the Incident Commander (IC) that he would go to the Command Van (CV) and call him on the tactical channel so that the Command Team could operate from the CV. The SO and the SA briefly discussed the plan, agreed to it, and continued to work to support the IC. The transfer of command's position from the Suburban to the CV was 'seamless'. The transfer of Command to the CV is common and routine. This transfer involves the IC operating in a better position, and 'Command' is (and was) still maintained by BC3.

The fire ground during this time was one of a firefight and a rescue of one of our own. Conditions inside the structure were deteriorating.

In the CV, the SO and the IC exchanged notes, thoughts, and actions. Crew placement and accountability were addressed. Tactical worksheets were developed and a plan was discussed and put in place to attempt to rescue Bret. The sustained (and heroic) firefighting efforts made it possible to consider and implement a rescue attempt. The SA began to fill the positions on the Command Team with arriving Chief Officers. Fire Captains, serving as Sector Officers, were upgraded to Chief Officers upon their arrival.

The issues that were addressed by the Command Team were as follows:

- A firefighting action plan, limited to the area of rescue
- A rescue plan
- A safety plan
- A treatment area and plan was established
- A rehab area was established

Members filling the roles of Section Chiefs in the CV were very helpful in the area of logistics, media relations, family support, and firefighter support. This included every aspect of the Incident Management System and resources available to the Phoenix Fire Department.

The Command Team dealt with 5 alarms, a complex firefight, a difficult rescue, 12 maydays (distress calls), and all units and members were accounted for. The Command Team functioned, in place, with the original members, until well after Firefighter Tarver's removal from the fire building. Command Team members were

replaced very late in the incident to be with 1st and 2nd alarm companies, and participate with their debriefing. The Operations Chief held a post-incident critique with the Command Team following the incident as well.

CHAPTER VIII.

LESSONS LEARNED AND REINFORCED

Most basic firefighter skills were reinforced at the 35th Avenue fire. Many are operational functions that are performed on a daily basis with very little consideration of their impact on firefighter safety and operational outcomes. These basic skills, tasks, functions, and operations should be reinforced at all levels in the organization and frequently reviewed.

- Basic firefighting skills are critical. These skills should be reinforced at every opportunity.
- The Hose Line = Safety = Exit.
- The window of survivability is directly related to the firefighters' SCBA air supply.

Air = Time
Air is Critical !!!!

- Operating in a large commercial building with very little visibility is very dangerous.
- Company Officers are key to our department's success!
- All firefighters must have a portable radio.
- Crews must stay together.
- Company Officers should take a pessimistic approach when placing apparatus on the fireground.
- Lost firefighters
 - Self-survival skills are critical
 - Firefighters need to activate their PASS units when lost
 - Firefighters must stay together
 - Command must identify who's down and from what company
 - Firefighters must follow SOP's when in trouble.
- Crews must maintain the firefight throughout a mayday/search and rescue activities.

- Search vs. Rescue, each may require a separate plan and separate crews.

Search = Finding
Rescue = Removal

- Fire companies need to pre-plan occupancies within their first due response areas.
- The Incident Command team concept works! Incident Commander, Support Officer, and Senior Advisor working together as a command team will be able to manage any incident.
- Sector Officers must manage their geographic area or function.
- Command Officers must be assigned to manage sectors early in offensive strategies.
- A strong Command presence is needed from the very beginning.
- Communications are key on each level and between each level.
- Unnecessary communications must be eliminated on the fireground.
- Companies must follow assignments from Command.
- The Risk Management plan of the Phoenix Fire Department must be reinforced at every incident.
- Reinforcement of the initial and ongoing size-up is critical for firefighter safety.
- The Incident Commander must maintain an accurate account of all firefighters operating on the fireground.
- A strong accountability system is necessary on all incidents.
- The following factors are important considerations on all fires:
 - *Building* - size, location, arrangement, age, occupancy, construction
 - *Fire* - size, location, stage, fire control, smoke blocking view, wind effects, color, and amount
 - Vertical ventilation is key
 - *Incident Action Plan (IAP)* - strategy, tactics, forecast for the worst, Commands focus upon the rescue, Command must announce who they are searching for.

- During multi “maydays”, Command must identify who they are, where they are located and their needs.
- On large incidents, Command must use multiple radio channels to assist in managing radio traffic. This becomes critical in rescue situations.
- A large command staff is needed to manage an incident that is escalating. When the Incident Commander receives a mayday, he or she must maintain a focus on the firefighter in trouble.
- Command should establish a Safety Sector early in the incident.
- 15 – 20 minute elapsed time is critical on the fire ground. Companies are running low on air, company reserves are usually lowest, the building is deteriorating, the fire is spreading, and Command is often changing the strategy if conditions are not improving.
- Commercial and residential fires are very different. We should practice fighting residential fires like commercial fires.
- All companies operating on the fireground should have a Thermal Imaging Camera (TIC).
- The staffing of fire companies is an important factor in firefighter safety, fireground activities, and overall fireground success.
- Larger RIC components
 - Command must develop Rescue Sector/Branch early on in an incident.
 - Rescue Sector/Branch should develop a RIC Incident Action Plan.
 - Rescue Sector/Branch must take a proactive approach to improving firefighter safety on the fireground.
 - Multiple companies are needed for a true firefighter rescue.
 - A system of passing off a rescue must be developed and trained upon (“A Relay Rescue”).
 - Companies should have a pre-incident plan for RIC duties.
- Companies should receive air management training.
- The Shift Commanders and Battalion Chiefs must have an activate role in Battalion training.
- Strong firefighting skills should be included in all Battalion training and Minimum Company Standards (MCS) evaluations.

- RIC training should be reinforced in Battalion training and MCS evaluations.
- All levels in the Incident Command System must participate in frequent simulations.
- Frequent training on and following SOP's on the fireground is key for incident scene success.

CHAPTER IX.

FIRE DEPARTMENT RECOMMENDATIONS

The following recommendations were compiled during the recovery process. Hundreds of man-hours were involved in the investigation and development of the following recommendations. A review of all current department procedures, staffing, equipment, and overall department operations was completed.

These recommendations are grouped into the following categories:

- A. Personnel
- B. Equipment
- C. Standard Operating Procedures
- D. Technology
- E. Training
- F. Strategic Level Recommendations
 - 1. On-Going Concerns
 - 2. Logistics Section
 - 3. Operations Section
 - 4. Administration Section
 - 5. Planning Section
 - 6. Dispatch and Deployment

A. PERSONNEL

▪ Battalion Chiefs

Add five Battalion Chiefs to each shift.

Battalion Chiefs apply emergency incident management skills to active emergencies. Their early presence on the emergency scene is important to assure firefighter safety and proper management of the incident. The current deployment of two shift commanders, four off-airport Battalion Chiefs, and an on-airport Battalion Chief is insufficient to provide for the timely initial arrival of a command officer at an emergency scene and the timely arrival of multiple command officers at more complex incidents.

In 2001, we were only able to meet our five-minute command officer response time 36.3 percent of the time. In the northern half of the city, this goal is only attained 19 percent of the time.

- **Tactical Staffing Reinforcements**

Add a fifth firefighter to all ladder companies and engine companies that respond to over 2,500 incidents per year.

The staffing of Engine and Ladder companies are a key component to the search & rescue and fire control operations of the Phoenix Fire Department. The traditional four-person company has served the department well for the past 30 years. However, today's emergency incidents and newly recognized risks of terrorism and major disasters have led the department forward to identifying a need for increased staffing to five firefighters on all Ladder companies and any Engine company that responds to over 2,500 calls per year.

At the 35th Avenue fire, the company officers were filling two positions. First, they were supervising their individual companies. These direct supervision duties include ensuring accountability, conducting ongoing incident scene size-up, providing progress reports to command, and providing overall scene safety. In addition, the company officers were required to function as firefighters, pulling hoses, opening ceilings, and ventilating the roof. When company officers are conducting fireground tasks, especially on a dangerous scene, the crucial components of accountability, safety, and the ongoing incident scene size-up are not safely and thoroughly completed.

In the future, this provision of a fifth company member will allow the company officer to focus on supervisory and key safety functions.

- **56-Hour On-Duty Safety Battalion Chiefs**

Add an on-duty Safety Battalion.

A 56-hour Battalion Chief (Safety Battalion) dedicated to the safety function is required to respond on all 3-1 and greater assignments, and is accompanied by a Field Incident Technician (FIT). The Safety Battalion provides a safety focus for emergency incidents. The Safety Battalion monitors and assures the safety of firefighters engaged in control activities and monitors the incident action plan to assure the safety of firefighters and others on the incident scene. As a command officer, the Safety Battalion is capable of addressing firefighter safety on the task, tactical, and strategic levels – the Safety Battalion can communicate effectively with company officers and command officers. In addition, while not assigned to an emergency incident, the Safety Battalion will provide safety training and leadership to firefighters and civilian members of the Fire Department staff.

- **Battalion Training Personnel**

Add Fire Captains to serve as training officers assigned to each Fire Battalion.

Over the last 20 years, the rapid expansion of the city and the growth in population in the extreme northern and southern ends of the city has made centralized training for firefighters more and more impractical. Some companies have travel times nearing an hour from their assigned fire station to the Fire Department Training Academy.

The city has also continued to diversify. The tactical fire problems that are presented to downtown fire companies are different than those faced by firefighters in the far north or far south portions of the city.

Battalion Training Officers (BTO's) will be able to coordinate training for firefighters in each Battalion. Much, if not most, training can be conducted outside of the centralized facility. BTO's will be able to tailor training to respond to the hazards and challenges faced by firefighters in each area of the city.

- **Heavy Rescues Companies**

Add Heavy Rescue companies to the fire Department response system.

Heavy Rescue units are highly trained rescue experts. These units are staffed with one Captain, one Engineer, and four Firefighters. Each Heavy Rescue company member will be certified in technical rescue, hazardous materials, and response to weapons of mass destruction incidents. Each unit will carry a full complement of tools similar to the Phoenix Fire Department Urban Search and Rescue teams that is sponsored by FEMA.

One Heavy Rescue unit will be dispatched on all working fires. Upon arrival they will assist the initial arriving companies to achieve their tactical objectives of All Clear, Fire Control, and Property Conservation. As incidents escalate, other units would also respond and solely focus on firefighter safety. Heavy Rescue company members will provide vital support for companies operating on the fireground and a tactical reserve to rescue a lost or injured firefighter. Their training and equipment will also be used to supplement current response teams and service delivery.

- **Battalion Level Tactical Pre-Planning Officers**

Establish eight (8) Battalion Pre-Fire Planning Coordinator Captains that will be responsible for coordinating and managing all pre-fire planning and building floor plan activities.

These personnel will be responsible for gathering pre-fire information about buildings and placing that information into the Department's dispatch system. As fire companies respond to an emergency, they will be provided with hazard data and drawings of the building. Add a Senior Drafting Technician position to the Department's Mapping Section to assist with CAD drawings and Pre-Fire plans.

- **District Safety Officers**

Add two additional District Safety Officers.

In 2000, because of city growth, call volume, and span of control for the North Fire District, a second Battalion Chief was added. In 2002, a second Battalion Chief will be added the South Fire District for the same reasons. In both cases, another District Safety Officer is needed to manage the workload.

- **CV 2 Staffing**

Add three Fire Engineer positions to staff a second mobile command post vehicle in north Phoenix.

The Fire Department currently staffs one mobile command vehicle. Command Van 1 (CV1) is stationed in central Phoenix. This single unit has response times to the northern part of the city that makes it ineffective.

- **Dispatch and Deployment**

Add five full-time positions to cover staffing of one TRO position and one full-time Lead position.

A critical portion of firefighter safety on the fireground is communication. A crucial link is the radio communications between the Tactical Radio Operator (TRO) in the Alarm Room and the commanders, and the companies working an emergency incident.

The TRO on the designated "working" channels support and ensure fireground safety by monitoring all of the radio transmissions between command, sectors and the individual firefighters. During an emergency on the fireground, the survival of the firefighter is directly related to his/her ability to communicate clearly to the Alarm Room TRO. It is the TRO's responsibility to monitor and listen for any "maydays" or emergency traffic signals that are transmitted. Due to the increased volume and intensity of radio traffic during active incidents, the TRO is often the first, and sometimes the only one, to hear a firefighter's cry for help and notify units on the scene.

Effective support of the Rescue Branch and Operations would require an additional Tactical Radio Operator dedicated to a specific channel during these critical fireground operations. Dispatch protocol dictates (as backup to the TRO) that it is necessary to have a Lead position to monitor transmissions and direct radio traffic.

This additional staffing has a direct relationship with the individual firefighter's safety, and in addition would increase the measures of safety that are vital to effective fireground operations.

B. Equipment

▪ SCBA Improvements

Make improvements to the Self-Contained Breathing Apparatus (SCBA) worn by firefighters.

The SCBA is the most important piece of safety equipment for the firefighter. This piece of equipment literally means the difference between life and death in a hazardous atmosphere. A number of improvements are needed in the equipment currently used by Phoenix firefighters:

Secondary Low Air Alarm - Retrofit existing SCBA's with a secondary low air alarm. A low air alarm is critical for firefighter safety and survival. Current SCBA's have only one low air alarm; a face mounted "Vibrate Alert". With this current system the user is the only person who knows he or she is low on air. A new "Audio Bell" would also advise fellow firefighters and the Company Officer of the members' low air.

SCBA Alligator Clips – Replacing the existing shoulder clips with a more securely locking "Alligator" style clip. The current clips loosen while operating on the fireground. During normal operations this increases wear on the unit and fatigue of the firefighters. The new style clips improve both normal operations as well as emergency rescue operations.

Buddy Breathing – Each SCBA has an Emergency Buddy Breathing system. This system is designed to assist a fellow firefighter who has run out of air in a contaminated atmosphere receive air from another firefighter or a Rapid Intervention Team member (RIT). An improvement in the current buddy breathing connecting system has been developed. This new system will allow greater ease in this emergency procedure under extremely dangerous conditions.

- **SCBA Communications**

Provide firefighters with a better means to communicate while wearing SCBA's.

Communications on the fireground are critical for safety and success. An SCBA intercom system allows the company officer to maintain close accountability of his or her firefighters and provides the ability to easily relay information. This system will also eliminate radio traffic and allow for clearer, safer communications.

- **Fallen Firefighter Harness**

Retrofit the Fallen Firefighter Harness into all existing protective coats.

The Fallen Firefighter Harness is an integrated personal rescue device, used by rescuers to assist in the removal of a fallen firefighter from a structure. The device is sewn into the firefighter's personal protective equipment. This system eliminates the cumbersome, time consuming, and often-problematic steps of finding a rope and securing it around a fallen firefighter, the pulling off of a firefighter's jacket during removal efforts, and requiring that an extrication device be brought in and the firefighter attached to that device. With the Fallen Firefighter Harness, a downed firefighter can be rapidly extricated with one simple step.

- **Hose Exit Arrows**

Provide hose exit arrows on all attack hose lines.

Firefighters are taught to "read" couplings in order to know which direction will lead them to an exit. The effectiveness of reading couplings is reduced by several factors on an emergency scene including thick gloves that are worn by firefighters, as well as zero visibility. The addition of these Hose Exit Arrows provides a tactile surface at regular intervals that can be felt by the firefighter to indicate the direction that leads to an exit.

- **Emergency Transfill Hose (BC RIC Bags)**

Provide a redesigned emergency transfill hose for all rapid intervention bags.

The transfill hose allows firefighters to provide clean air to a firefighter that is low on air or has run out of air in his or her SCBA. The new emergency transfill hose is a simple system that will allow rescuers to quickly and efficiently supply air to a fallen firefighter under adverse conditions. The system is designed to be a universal system that fits all SCBA's in the automatic aid system.

- **Company Level RIC Bags**

Provide a smaller version of the RIC bag on all Engines, Ladders, and Utility companies in the City of Phoenix.

These bags include an emergency transfill hose. The transfill hose allows firefighters to provide clean air to a firefighter that is low on air or has run out of air in his or her SCBA. The system is designed to be a universal system that fits all SCBA's in the automatic aid system.

- **Air Hose for the Utility Trucks**

Provide Kevlar wrapped stainless steel hose on Utility trucks.

This hose allows the air generated by Utility trucks to be extended into a hazardous area. Current hoses melt and fail when exposed to heat. The ability to extend an air supply into a hazardous area will give rescuers the ability to supply air to a fallen firefighter for an extended period of time, thus allow for lengthier specialized activities such as patient extrication.

- **Stream Light Boxes**

Install more powerful portable lights on fire apparatus.

The installation of Streamlight Light boxes on the apparatus will provide a safe and effective source of lighting on emergency scenes. Currently, we use generator lights that give off carbon monoxide and present an electrical hazard to firefighters. The Light Boxes are battery driven and are intrinsically safe and do not generate carbon monoxide as they are used.

- **Accountability Name Decals**

Provide accountability name decals on firefighter protective clothing.

We currently use a helmet identification system that consists of a firefighters ID number. By switching to a system that uses the individual's last name, we will be able to conduct a more effective Accountability System within an emergency scene. Captains and crewmembers will be able to identify one another more quickly and recognize members who are not where they need to be.

- **Hose Accountability Markers**

Provide a system to identify hose that has been deployed.

There is currently no way to identify a crew's hose line from outside of the hazardous area when multiple companies are working off of a single engine. This passport system allows a company to place an ID marker at the pump panel that corresponds with their hose line. This will allow Captains, Engineers, and Rapid Intervention Crews (RIC) to immediately identify any hose line, greatly improving accuracy and response time for any needed rescue efforts.

- **Integrated Turnout Rope System**

Provide an integrated turnout rope system.

The provision of a rope system in each set of protective clothing will ensure that all firefighters have a rope available to them should they become lost and/or trapped. This rope can also be used to assist firefighters in the search for and removal of customers as well as fallen firefighters. Currently no approved rope system is offered to our members.

- **Light Sticks**

Provide firefighters with light sticks.

These are chemically activated self-contained light sources that can be carried by all firefighters operating within the hazard zone. In an emergency situation, such as becoming lost, trapped, or disoriented, the firefighter would activate the light stick. This light stick, along with trained self-survival skills, provides another measure of rescue by the Rescue Sector. Recent research shows that these short-duration, high-intensity lights provide a means of identifying and locating firefighters in a smoke filled environment.

- **Personally Assigned Tools**

Provide firefighters with personally issued small tools.

The addition of an inventory of personal tools to warehouse stock will allow firefighters to stock the RIC bags, as well as their turnouts, with tools needed to perform rescues as well as daily firefighting activities.

C. Standard Operating Procedures

The Incident Scene Operations review team was established as a sub-committee under the Recovery Team for the following three purposes.

1. Identify all Standard Operating Procedures in Volume II that were used to manage the Southwest Supermarket incident.
2. Systematically review those procedures and analyze how command teams and crews working on this specific incident applied them.
3. Make recommended changes to those procedures that would improve operations on similar incidents and submit these changes for formal review and implementation.

The Incident Scene Operations review team identified six Standard Operating Procedures that affected the decisions of the command team and crews working on the incident.

- 201.03 Accountability
- 201.04 Rapid Intervention Crews
- 201.04A Rescue Lost Firefighter Command Responsibilities
- 201.05A Safety Sector
- 201.03 Lost/Trapped Firefighter Basic Self Survival
- 202.03A May Day Communications

A systematic examination of these procedures was accomplished by reviewing each procedure line-by-line. This allowed input by all members and also gave those team members who were actually involved in the incident an opportunity to give their personal perspectives on how each procedure affected their actions. Follow-up meetings were then held to incorporate any changes recommended and agreed to by the review team to be incorporated into each procedure. The procedure was then placed into the department formal review process for formal approval.

In conclusion, although the Incident Operations review team recognized that effective procedures were in place to allow Command Officers and crews to manage this specific incident, task level training on these procedures was not sufficient to prepare the Command teams and crews to react effectively to this specific incident.

The most notable areas of concern that occurred on this specific incident were failure of crews to manage their air supplies, keeping crews intact and under control, lacking an effective technique to rescue a downed firefighter, and effective communication skills.

In response to these deficiencies, the review committee made the following three recommendations:

1. Remove all task level operations from these specific management procedures in Volume II and incorporate them into a new training manual and training lesson plans for firefighter safety and survival operations.
2. Red flag these procedures and any other procedures on firefighter safety for a regular training schedule not to exceed two years. Possibly create a dedicated month each year to train specifically on firefighter safety and survival operations.
3. Part of the review process to place new management procedures in place regarding firefighter safety and survival would include formal department training.

The specific areas to be addressed in each SOP are outlined below:

- **M.P. 201.03 Accountability**
 - Minor changes recommended focusing on personnel awareness and leaving Passports in appropriate locations. All recommendations have been passed on to the Training Committee for future consideration.
- **M.P. 201.04 Rapid Intervention Crew**
 - Major revisions in the dispatching of assignments, RIC responsibility, and the overall rescue plan. All recommendations have been passed on to the Training Committee for future consideration.
- **M.P. 201.04A Rescue Lost Firefighter Command Responsibility**
 - Mostly minor changes to the standard. Changing the Rescue Sector to Rescue Branch and indicating the need to add a Branch to the Command Organization. All recommendations have been passed on to the Training Committee for future consideration.
- **M.P. 202.05A Safety Sector**
 - Mostly minor changes to the standard. Identified the need to change Safety Sector to Safety Section. All recommendations have been passed on to the Training Committee for future consideration.

- **M.P. 202.03 Lost/Trapped Firefighter Basic Self Survival**

- There were major revisions to this standard. The focus is now on not getting lost or trapped. Other revisions were included in the "May Day" report, exits, breaching, and radios. All recommendations have been passed on to the Training Committee for future consideration.

- **M.P. 202.03A "May Day" Communications**

- This SOP was deleted and the guidelines were included within other standards.

- **M.P.'s 201.04, 201.04A, 201.05A, and 202.03**

- All four SOP's will be combined into one standard that deals with all aspects of the lost or trapped firefighter.

D. Technology

The Technology Sub-Committee of the Deployment Recovery Team was assigned the task of investigating and researching both new and existing technologies. The team also reviewed existing technology currently used by the Phoenix Fire Department and has developed recommendations that will enhance future fire scene operations and ultimately, firefighter safety.

The committee concentrated on equipment and concepts that were nearing introduction to the fire service market or those under development that have the potential to make a tremendous impact on fireground operations and firefighter safety. Many ideas and concepts are now being researched by several military electronic contractors and communications companies and are not yet available. The development of firefighter tracking and locating devices is an example of this emerging technology. Other products and equipment reviewed and evaluated were thermal imaging cameras and SCBA air capacity monitoring by way of a telemetry unit.

The committee also developed a list of recommendations and changes pertaining to our existing portable radios and the issue of the six duplex channels on the blue deck. Although this was not a factor in the 35th Avenue fire, it certainly could have been in future incidents if the problem had not been discovered and corrected. The Sub-Committee has been very involved in the development of the safety features that will be incorporated in the new 800mhz radio system and has used suggestions from the 35th Avenue fire and subsequent training in the system design.

The Sub-Committee has also researched and evaluated the availability of live, real time video technology and has recommended incorporating this concept in all of the Command Vehicles and Command Van.

There are some significant technological advances on the horizon, especially as it pertains to firefighter safety and fireground operations. While the other Sub-Committees have essentially completed their tasks pertaining to the Recovery Program, the technology issues will continue to be ongoing and virtually never ending.

- **Video Technology**

The new Motorola MCT's have a video input port. It is recommended that each BC vehicle be equipped with a downlink antenna and associated hardware for video display from area news helicopters.

- **SCBA Technology**

Scott SCBA Corporation will return to Phoenix in 2002 with the "next generation" of SCBA's. The Labor Management Physical Resource Research and Development Committee will meet with them to discuss future SCBA concerns.

- **Thermal Imaging Camera**

The Bullard camera was recommended to the Recovery co-chairs for purchase.

- **Communication**

Improvements in the current radio system "Blue Deck" channels.

- **Firefighter Locating and Tracking System**

The Research and Development team has been assigned to follow development in this area. This will be a very long-term project for the department.

E. Training

Almost immediately following the Southwest Supermarket fire, the training process started to take shape and an action plan for the subsequent training was being modeled. The first priority was to review the current training programs in regards to lost and trapped firefighters. Second, we needed to analyze the actions of firefighters at Southwest Supermarket in regards to being lost or in trouble and the rescue efforts of those in trouble. From this analysis, a joint

Labor/Management Recovery Team was able to create a list of "lessons learned", both positive and negative. With this list of "lessons" in mind, the teams Training Committee, again balanced with members from both labor and management of all ranks, developed a training plan. This plan included training for all levels of fireground personnel from command officers to firefighters. The training also was to include a short (0-2 months), medium (2 months-1 year), and long (1 year-5 year) range plans. The last order of business was to present the developed training plan to the department in a timely and positive manner.

The training was divided into two phases. The first phase was informational type training that included walk through and explanation of what happened at the incident. The second phase included classroom-training sessions followed by hands-on type training to reinforce what was done in the classroom.

The first phase of training was to get every fire company in the department and organize a guided tour of the incident site. This was done after engineers deemed the structure safe and the arson investigations group was completed with the site. This guided tour was given in groups of 15 to 20 firefighters and included all areas of the site. The tour showed construction and contents, which demonstrated the pluses and minuses of the rescue.

Once all companies in the department walked through the site, captains level meetings were scheduled with the Fire Chief. The purpose of these meetings was to have an open discussion of the events surrounding the incident and discuss the why and where the department will go from here. At these meetings, a forum was created to funnel ideas on firefighter survival and RIC deployment. These ideas were captured and then reviewed by the Labor/Management Recovery Team for use in future training.

The final portion of the first phase was to have a train-the-trainer session with all the Battalion Chiefs and the corresponding District Safety Officers. The intent of this training was to make the BC's and the DSO's aware of all aspects of the incident. With the use of audio-visual aids and open discussion, they would be able to go to every fire station in the department on all three shifts and explain what happened that day at the Southwest Supermarket. To further enhance the effectiveness of fire operations in the valley, the 17 mutual-aid cities were also given this train-the-trainer session so they could give this information to their departments in the form of departmental training.

The second phase of the training process was to take the "lessons learned" and put them into modules that could be given to the department in the form of departmental training. The major "lessons learned" were condensed into five areas:

- Air Management
- Self-Survival
- Fire Ground Communications
- RIC Search and Rescue Techniques
- RIC Deployment and Responsibilities

The joint Recovery Team determined that each of these areas would be made into training modules and taught to the department in the form of departmental training in a classroom setting. In addition to the five training modules, there was also two hands-on training sessions. The first was to be given after the first three modules and next was to be given after the last two modules. This enabled crews to put into application what they learned in the classroom. All the training was to be given by a hand-selected group of instructors. This allowed for a consistent and standard scope of instruction with little room for deviation from the "lessons learned".

One of the most important considerations in the selection of the instructors was to include some of the officers and crewmembers that were on the fire ground at the incident. This served a two-fold purpose. First, it added a tremendous amount of credibility to the training content and program. Second, it helped with the "healing" and the conversion of negative energy into a positive feeling of accomplishment for crewmembers involved. The most challenging concept in the entire training process is that we needed to change the way firefighters think in a critical situation. This includes fire and building size-up and that we need to change our action plan when we have a "sudden event". Finally, the idea that "if you think you're in trouble, you are!" and call for help early.

Air Management

This class was broken down into two areas: air management as a crew and air management as an individual. As a crew, all members are responsible for keeping track of each other's air consumption and reporting it on a regular basis. As individuals operating on the fireground, we have a responsibility to our crew as well as everyone at the incident not to run out of air and create a crisis situation.

In addition to the areas above, we concentrated on the following:

- The concept of air management as it relates to fire fighting
- Scene size-up as it relates to air management
- "Work vs. Air Consumption" equation
- Company Officer's responsibilities as it relates to air management
- Critical thinking and behaviors if you or your crew are low on or out of air
- Emergency SCBA procedures

Self-Survival

Again, this class was broken down into the same two areas: self-survival as an individual and self-survival for crew. The concept of this class was focused on prevention. The majority of the content concentrated on the fact that if we can keep ourselves out of trouble, then the chances of needing a RIC are greatly reduced. The remainder of the class dealt with self-survival techniques.

This class had several objectives that included:

- The concept of self-survival as it relates to firefighting
- Our actions are based on the 75/25 theory
 - 75% how to stay out of trouble*
 - 25% what to do when you are in trouble*
- Overall scene size-up to keep you or your crew out of trouble
- Company Officer's responsibilities as it relates to self-survival
- Critical thinking and behaviors that keep you or your crew out of trouble
- Critical thinking and behaviors if you or your crew are in trouble
- Basic self-survival techniques

Fire Ground Communications

This class was separated into three areas of communications between the crews, sectors, and the command post. This class focuses on two methods of communications, both with radios and face to face. It also demonstrates the need for accurate and regular reports (C.A.N. system, Conditions/Actions/Needs) at the task, tactical, and strategic levels to ensure a safe and successful fireground. The class objectives are:

- The need for effective communications in firefighting
- Traits of an effective communicator
- How we can and do communicate on the fire ground
- Elements for complete and understandable reports
- A basic understanding of radio etiquette and function

Hands-On Training

This module is the fourth in the series of "lessons learned" from the Southwest Supermarket fire. The purpose of this class is to reinforce the self-survival techniques that have worked for us in the past, and to integrate the new ideas presented in the past three training modules, i.e., the 75%/25% idea, air management skills, fire ground communications, and the interior-reporting model. These exercises are based on the "practice as you play" theory and are intended to utilize a full 2-1 assignment, including a command component. Commercial buildings located geographically around the valley were used to simulate

complex structures similar to the type the surrounding companies will respond to. SCBA face pieces were covered with "Limo" tint and building windows were blacked out to simulate smoke conditions. Participants were asked to pick at random a fireground scenario that duplicated the incident.

The scenarios are as follows:

1. Change in interior tenability
2. Identify and react to progress reports including changes in roof tenability
3. Encountering a lost or separated firefighter
4. Survival in an extended interior operation

Rapid Intervention Training Objective

This class was designed to be a demonstration and practice session covering RIC searching methods, and then packaging and extrication techniques.

- Rapid location audio search methods
- Crewmember duties when performing a RIC search & rescue
- Efficient hose line movement (advancing and retreating)
- RIC accountability methods while searching
- Downed firefighter packaging
- Downed firefighter extrication from the hazard zone

RIC Procedure Training

This class was designed to present the basic overview of Rapid Intervention Crews operation on the fireground for the task, tactical, and strategic levels of operations.

- Understand the need for RIC
- Dispatch and deployment
- RIC Incident Action Plan
- On-scene organization and preparation
- Deployment of teams
- Command organization

Hands-On RIC Training

This training was designed to present a basic overview of Rapid Intervention Crews/Rescue Sector operations on the fireground for the task, tactical, and strategic levels of operations in the Phoenix Fire Department. This is a hands-on type training that consists of scenario-based exercises. These scenarios build upon the lessons learned in the "RIC Search & Rescue Techniques" and "RIC Deployment & Responsibilities" classes.

The scenarios are as follows:

1. Firefighter separated from crew
2. Two firefighters unable to exit a fire structure
3. Firefighter trapped by lightweight debris
4. A crew that exits a structure and determines one of the crewmembers is missing

F. Strategic Level Recommendations

On-Going Concerns

How do we prevent the tragedy of the Southwest Supermarket incident from happening again in the Phoenix Fire Department? Listed below are the factors that need to be addressed within the Command Staff and eventually to the whole department. It must be said that the Incident Command Team performed in an outstanding manner. Actually, for the most part they performed exactly the way they had been trained. The factors listed below have been identified during incidents in which firefighters in other communities have been injured or killed during a firefight, or have been developed using 20/20 hindsight on the Southwest Supermarket fire.

The factors are not listed in any order of importance. They are in an order that seems to make sense for the Incident Command Team to consider them.

- **Development of a Phoenix Fire Department Philosophy**

We will write down our philosophy for fire fighting in a clear and concise manner. Within the document should be discussions on how and why we act the way we do on the fireground.

- **Cockpit Resource Management (CRM)**

CRM is the method that the airline industry has developed for airline crews to use to manage routine and emergency activity before, during and after the jet is in the air. We need to study the strengths of CRM and incorporate those strengths into the Command Team structure.

- **Critical Fireground Factors**

Critical fireground factors need to be truly identified and balanced against the risk to the community and ourselves. This will allow us to better understand what is critical and what is not. Today we analyze what critical fireground factors will keep us out of an offensive firefight. Perhaps we

should look at what factors are in place to keep us in the firefight. If there are too many unknowns, or maybe even one critical unknown, we stay out until that factor can be accounted for.

- **Strategy**

A method must be developed to determine the proper strategy before we begin the firefight. The strategy must be reviewed and announced on the achievement of the tactical benchmarks, time frames, command transfers, and sudden unexpected events. During each review, the Command Team should use a check sheet of some sort to measure the known and, maybe even more importantly, the unknown critical fireground factors.

- **Communications**

Once the critical fireground factors and strategy have been identified, we need to develop a "Common Language" that enables Command and the companies/sectors/sections/branches to share that information. We need to develop a standard format for reporting information between sectors and the IC. In this report, all of the critical information would be provided. We all need to understand "Red Flags" and what they are, where they are at, and the effect upon the operation.

- **Cultural Changes**

We must fight fire in a small structure like we fight fire in a complex structure. We are only as good as the way we practice. Nobody should ever run out of air in a structure fire, we should never leave without the whole crew. Command Officers must be vigilant about how we manage procedural violations. True, our SOP's are guidelines, but when times get tough, the best place to be is inside the SOP box.

Command must also call for additional resources earlier. We have 53 engines and 13 ladders in the city; there is no reason to hold them in reserve if they could have a positive impact on an incident in progress.

- **Stronger RIC's**

We need to strengthen our ability to save our own. Increasing our expectations and adding more units to the RIC role can do this. But even more importantly, these rescuers should not be standing in the street "waiting for the big one". These companies should be working. There are a multitude of tasks associated with a successful firefight that must be done in a consistent manner. Securing exits, marking doors, surveying the whole incident, forcing entry, preparing the structure for our exit if something goes wrong, throwing extra hand ladders at multistory

occupancies, etc. All of these functions can be accomplished by using a RIC Branch, using a command officer and a F.I.T., in a strategic location on the opposite side of the building from Command.

Logistics Section

The main function of the Logistics Section at 35th Avenue was to support the Incident Command team, both during the rescue operation and immediately following. After receiving a briefing from the Senior Advisor, we then began coordinating efforts with the Planning Section. The following is a list of activities completed by this section:

- Established a Resource Sector
 - Canteen
 - Food and refreshments
 - Fuel
 - Heavy equipment
- Managed Staging
- Managed Rehab
- Secured Jack-N-The-Box
- Debriefing

The following recommendations are intended to streamline the command operation and improve its overall effectiveness.

- Staging should be managed by Logistics. This frees up the IC and the Support Officer (SO) from managing the resources in staging. The SO should ask Logistics for the required resource without becoming personally involved with the specific fire company within the staging area. The FIT managing the MCT should work directly for Logistics.
- Rehab should be managed by Logistics in the same manner as staging. All status tracking of companies within rehab should be left to the Logistic Officer.
- An MCT should be provided for Logistics in the Command Van to assist in visualizing resources in staging and rehab. It would also provide easy Q-paging capabilities.
- A gator should be provided at the Command Van to provide the command staff a convenient method of getting around the fire scene.

Operations Section

The following are recommendations for the Incident Command team to consider while operating on large incidents:

- It is imperative that the Command Van gets set up as soon as possible. The IC should move over to the CV immediately after being notified that it is ready. The Shift Commander in the CV will handle command responsibilities during the transfer.
- The Shift Commanders will fill the Support Officer and the Senior Advisor's role. They are the on-duty Deputy Chiefs most experienced at handling emergency situations.
- Once the Support Officer is in place they need to verify assignments made, confirm the Incident Action Plan, and assist in tracking companies. Early communications between the IC and SO will allow for a smooth running incident.
- The Senior Advisor should make assignments in the Command Van. He should also control the traffic that at times can be very disruptive to the Incident Command Team.
- Responding Battalion Chiefs on working incidents should report to the Command Van fully turned-out. They will receive a briefing on the incident and a tactical assignment from the Senior Advisor or his/her designee. Early assignment of BC's to manage sectors should be a priority of Command.
- All staff chiefs at an incident should report to the outside of the CV. They will receive a briefing on the incident and a tactical assignment from the Senior Advisor or his/her designee. We have many command officer roles that need to be filled. Staff Chiefs responding will enable us to fill these important positions.
- Communications in the Command Van will be under the control of the Senior Advisor. All communications to the Incident Commander will go through the Support Officer. The Incident Commander needs to stay focused on the emergency at hand. All other communications should take place away from the Incident Commander.
- Sections within the Command Van need to stay briefed on each other's plan.
- A Command Officer should be assigned to Rehab early. We need to keep track of the companies that are leaving the fire ground and going to Rehab. They will check in with the Sector Officer and be tracked on their condition. The Sector Officer will be communicating with Logistics in the Command Van on their availability to return.

- Recommendation that a Utility truck be assigned to Rehab Sector. When companies are leaving the fire ground, they would go directly to the Utility for air. This makes it easier on the crews to go to one location for air and rehab.
- When assigning a Rescue Sector, Command should attempt to assign a Command Officer and establish a Rescue Branch early on in offensive firefights.
- All greater alarm incidents should establish a Rescue Branch and assign a separate radio channel. Additional resources should be assigned as necessary.
- 1st Alarm working fires will receive a 2-1 RIC and an additional BC. These companies will stay available for RIC duties only.
- All 2-1 assignments will now be dispatched as a 3-1 with two BC's. The second BC will handle the Safety Battalion responsibilities.
- All 1st alarms will be dispatched as a 5-2 assignment with three BC's and two Shift Commanders. Having both Shift Commanders respond will enable us to set up the Command Team appropriately in the Command Van.
- The exterior phone on the Command Van should "ring" at the Logistic Officer position. Command Officers arriving at the Command Van will be able to advise the Logistics Officer that they have arrived.

Administration Section

The Administration Section of the command team was not formally activated at the 35th Avenue and McDowell Road incident. However, many of the functions of the section were performed in an ad-hoc manner by individuals and other sections.

In accordance with P.F.D. MP's and the Model Procedures Guide for Structural Firefighting, the Administrative Section is responsible for:

- Procurement of service and supplies
- Cost recovery and documentation
- Agency liaison
- Ensures adequate coverage for the City of Phoenix risk management/ legal risk
- Manage investigations/arson
- Serves as E.O.C representative in the command post

We recommend that future incidents and training scenarios include the activation of the Administrative Section of the command Team.

We also recommend the following items be considered as we revise and train on Command Team Operations.

- The procurement of services and/or supplies should become a function of Logistics.
- On any incident that has the potential for a high dollar loss, or extended operations over eight hours, a representative from Fiscal Management should respond to the incident.
- Internal and external agency liaisons should be assigned to one person, who then makes specific assignments to Command team members.
- Adequate city coverage should be triggered by Dispatch and Deployment. Administration can then coordinate crew callbacks if needed.
- Incidents that have a potential for possible legal actions should request that a representative from City Risk Management and the Legal Department respond to the scene.
- Arson/Investigations should become a sector within the IMS system. Their responsibilities may continue for several days following the incident, allowing them to become the IC for the incident.

Safety Section

The following suggestions and recommendations are being submitted to improve firefighter safety on the fireground.

- *An on-duty Safety Battalion that would respond to all structure fire assignments.*

It is important that a Safety Officer start their response early into the incident. As fires and incidents escalate and become more complex, the safety of personnel on the fire ground becomes extremely hazardous. There is a need for a trained Safety Officer to assist Command Officers and fire crews per N.F.P.A. Standards 1500 and 1501.

- *Train fire crews and command officers on Standard Operating Procedures at the task, tactical, and strategic levels.*

This training must be revisited on a re-occurring, scheduled training plan. During any complex incident, the firefighters are trained to follow our SOPs. When we don't have the opportunity to practice them on a regular schedule, we lose the sharpness and operations can become confusing. This leads to disjointed individual efforts and destroys the command and control organization of an incident.

- *A task analysis must be used to look at all emergency fireground operations and procedures.*

The fire service has operated with little change in common concepts for 200 years. It is time to look at how we get the wet stuff on the red stuff.

- *Require all Captain and Chief candidates to complete a course in emergency scene safety.*

The Phoenix Fire Department instituted a pilot program for a Safety Battalion, wherein a Safety Chief Officer and Field Incident Technician was dispatched to accompany all 2-1 and greater alarms. During the pilot program, the unit identified the need for our members to have the opportunity to be trained and understand SOPs and safety procedures.

- *Use of Rapid Intervention Crews (RIC).*

RICs must be dispatched and used as Rescue Sector. A priority of Command will be to establish a Rescue Sector early on. The RICs will provide an added level of safety for companies operating within the hazard zone.

- *Sector training for Company Officers and Command Officers.*

In complex emergency incidents, officers are used to coordinate several fire crews operating in a specific area of the incident. It is a transition from a task level to a tactical level change in responsibility. This requires the officer to be responsible for as many as twenty firefighters and to implement an action plan for the sector. Sectors should be the responsibility of Command Officers. This is difficult to implement, as there is a limited number of Battalion Chiefs on duty in the city.

Planning Section

The following suggestions and recommendations are being submitted in an effort to help the command teams of the future run smoothly.

- The establishment of a Safety Section is a high priority of the Planning Section. Verifying that Safety is in place should be one of the benchmarks identified on the Planning Section checklist.

- Evaluation the current plan and provide data/suggestions to the Senior Advisor and the Safety Section. This should be one of the benchmarks identified on the Planning Section checklist.
- Early forecasting for the need of heavy equipment is critical due to the extended response time. This should be one of the benchmarks identified on the Planning Section checklist.
- The establishment of a Police Department liaison should be completed early in all incidents. Due to limited room in the Command Van, this liaison should meet outside of the Command Van and communicate directly with the Planning Officer by phone or a separate radio channel.
- Improvements are needed in the Command Van's internal communications. MCT's should be installed at all workstations so that messages can be easily transmitted between team members. This would also allow the Incident Commander to write out an Incident Action Plan for the entire team.
- During extra alarm fires there is a very high usage of the phone system. While the system works well for outgoing calls, there are difficulties when receiving calls. Each phone/number should be assigned to a Section for ease of use.
- Continue to control the access into Command Van.

Dispatch and Deployment

On March 14, 2001 at 1654 hours, Phoenix Regional Dispatch received a routine fire call for debris at 1520 North 35th Avenue. While the initial company was enroute, the call was balanced out to a 2-1 assignment.

Activities conducted relating to the incident:

- Notifications
- Coordination with personnel for personnel files
- Conduit for the establishment of Welfare Sectors and hospitals to include command personnel and ministers
- Coordination of food/beverage for family of injured members at hospitals
- Ensured Alarm Room personnel was kept updated on status of injured firefighters
- Notification to Alarm Room personnel of fatality of Firefighter Tarver
- Critical Incident Debriefing

Channels had already been “altered” due to the multiple-alarm, and staffing was reallocated to staff the necessary radio channels. Move-ups were immediately addressed and on-going regional status coverage was kept. As additional staff responded, the 495-5555 number was implemented as an informational number to the public/families, as well as additional phone positions coverage.

Dispatch and Deployment

The following suggestions and recommendations are being submitted in an effort to improve Alarm Room operations.

- *Build a Command team as management responds to AHQ.*

As Command Officers and Management Team members arrive at Alarm Headquarters, a Command Team will be built. The first arriving Command Officer will assume the role of IC, second arriving, SO, third, SA. The premise mirrors the field’s role in emergency operations (Volume II, Command Procedures). As Management Team members arrive, they will fill needed areas at AHQ to ensure normal service delivery needs are met for the rest of the city and the jurisdictions they dispatch for.

The Command Team operates as a cohesive unit with individual responsibilities placed on each command team member. As the incident escalates, the organization will grow to accommodate the needs.

- *Establish a dedicated channel with TRO for Rescue Branch.*

Once the Rescue Branch is implemented on the emergency scene, AHQ will assign a Radio Channel with a TRO to monitor all radio traffic. This channel will be used exclusively for the Rescue Branch members.

- *Establish and keep an open line of communication with the Command Van via a non-recorded landline.*

AHQ will identify a phone line to maintain an open line of communication with the Command Team/Command Van. A member of the Command Team will monitor the phone line in AHQ.

- *Dedicate a Captain to serve as Welfare Officer to field calls from families of firefighters.*

As the Command Team expands, a Deployment Captain will be assigned as a Welfare Officer. The responsibilities will be to field all incoming phone calls from family members and other firefighters inquiring about the call.

- *Use 99 lines at hospitals for Welfare Sectors.*

As Welfare Sectors are implemented at valley hospitals, 99 phone lines (direct ring-down lines) will be used to communicate with Sector Officers. Coordination with hospital staff and Sector Officers will be conducted through AHQ.

- *Updated notification list with City Management and Fire Department Staff.*

AHQ will ensure current "Travel Notices" and respective phone numbers are current in AHQ for City Managers Office, as well as Fire Department members. Coordination with Command Team at the scene will take place to ensure appropriate notifications have been made.

- *Establish a recorded phone line that the public can access that doesn't tie up operators in AHQ.*

A "message only" phone line has been installed in AHQ for information relating to emergency scene. This phone number can be given out to the general public via the media to keep the public updated as events unfold. AHQ will be responsible to update the phone line as necessary.

- *Establish AHQ Command personnel response list.*

AHQ will have a "callout" list for members to respond to AHQ in the event of a major emergency. The list will have all levels of the organization available to respond to AHQ to build a Command Team, as well as continual operation of the Deployment Center.

CHAPTER X.

CONCLUSION / RANDOM THOUGHTS

We responded to Southwest Supermarket just like we had hundreds of times before – a dumpster fire to the rear. This time, the fire had already extended to the building and the end result was a five-alarm fire and the death of Engine 14 Firefighter Bret Tarver.

Moving Forward

How has the Phoenix Fire Department moved forward?

First, we must make a conscious decision to review our past and present practices, to alter, and to improve where possible. These changes and improvements will allow us to continue forward and hopefully never repeat a similar event.

The department has embraced change for over 30 years. While the changes following the 35th Avenue fire may only total less than 5% of our operations, they are the 5% most difficult to change. The Phoenix Fire Department does not need to suffer a huge identity change. We will still be an aggressive offensive interior fire department. Although these changes will allow us to be a smarter and safer department, the impact of these changes will affect our operations throughout the future.

Overall, the systems in place during the 35th Avenue fire worked the way they were designed. However, they had never been used, or implemented, to such an elevated extreme. The initial companies deployed, the Incident Command system was in place, and firefighters were following the SOP's. As we quoted in the beginning, "It was a bad ass fire in a bad ass building". The fire got a huge head start on the exterior to the building almost immediately. On the evening of the 14th, the wind was out of the southwest and the smoke was hanging over the building and obscuring the view from the east side where BC3 was located. From the east side of the Southwest Supermarket, the initial firefighters and the Incident Commander could not determine the exact layout of the building. It wasn't until later that it was determined that the Southwest Supermarket was actually 'L' shaped.

Neither the Ace Hardware store nor the clothing store extended to the rear of the building. When E21 reported to Command "no extension", Command had no reason to doubt this report. An IC must react to what they see and what their fire companies operating on the fireground report. There should always be a mutual trust.

Firefighting

During our careers we learn our trade, our skills and our decision-making abilities in single family, conventional framed 1500 square foot residential occupancies that are

very compartmentalized – we respond to these fires on a daily basis. We are very successful with an aggressive interior offensive attack with 1"-3/4 attack lines. We perform a quick search while simultaneously controlling the fire and stabilizing the incident. Ladder companies support the interior attack with quick vertical ventilation and simple forcible entry.

We are very good at these residential structure fires in the Phoenix Fire Department. We learn that our initial attack line placement and air management is simple – we can usually see where the fire is (and where it's going) and can also see the Utility truck from the front door. Air management is usually very simple.

Occasionally we respond to a small strip complex, or small industrial occupancies. In comparison, they are equal to four to five 1500 square foot residences – 7500 square feet with conventional construction features. These occupancies are a little more complex, but usually very compartmentalized. Once again, our standard attack mode serves us well and we are again very successful; our experiences are limited, but common among most firefighters.

Responding to a fire in a structure the size of Southwest Supermarket is rare. 26,000 square foot occupancies with 21' interior ceiling heights such as Southwest Supermarket are equal to approximately forty-five 1500 square foot homes. However, if we apply the same experiences and tactics we have utilized in the 1500 square foot residence to the 26,000 square foot complex commercial occupancy, our risk at failure (failure = death or serious injury) is multiplied x 10 as the square foot increases from 1,500 to 26,000.

The 26,000 square foot building is not very forgiving if you run out of air. We learned this in 1985 when two Phoenix firefighters became disoriented in a large structure fire. They became lost, ran out of air, and were fortunately found by rescue crews and revived. We learned it again at 35th Avenue and McDowell. We have a responsibility as individuals, company officers, and command officers to take these experiences and use them while operating on the fireground. We must continue to reinforce a cycle of air management.

- | | | |
|---|---|--------------------------------|
| <ol style="list-style-type: none">1. Air to get in2. Air to get out3. Safety margin | } | the remainder is our work time |
|---|---|--------------------------------|

Example: 5 minutes to get in, 10 minutes to get out, 5 minutes safety, leaves a 10 minute work time.

In simple residential occupancies, we often leave the hoseline performing fireground tasks and are very successful in obtaining our tactical objectives of All Clear, Fire Control, and Loss stopped. We say in large complex occupancies, "don't leave the line". We need to finish that sentence by saying if you do leave the line and become lost, you could die.

Individuals and company officers must always maintain an awareness of their progress forward, interior conditions, but also must maintain awareness of the exit, the path to that exit, and time needed to travel that path. We should allow the RIC teams to support those exit paths or reinforcement of our ability to exit a building.

Fire size vs. GPM

When considering fire growth and the GPM needed to control a one to two room fire (250 square feet), it is approximately 80 GPM. In a large open room (which could equal 3,000 square feet), the fire flow could be up to 1,000 GPM to control the fire. The GPM must overpower the size of the fire. Attack line selection must not always be based upon what's easiest or what's fastest, but the correct size (GPM flow) to control the fire. That "correct size" line is not for the size of fire you see now, but the prediction or forecasted fire growth that will happen during the time it takes to deploy and operate that line.

Ventilation

Ventilation is the key to our success on the fireground, whether it's a simple or complex structure. This basic fireground function also decreases the thermal insult on the firefighters operating inside the structure. When discussing firefighter safety, a key component is vertical and horizontal ventilation, improving visibility, preventing lateral spread, decreasing heat, and improving our ability to find the fire. The ventilation hole must equal the size and complexity of the structure. We ventilate the roofs of residential occupancies with a 4x4 or 4x6 hole that allows the interior operations in an offensive firefight a good relief from the heat and smoke conditions. In the large complex situation, we must increase our ventilation hole size appropriately. On large structures, we must remember to include horizontal ventilation as a basic fireground function. Open windows, doors, and remove all the glass you can find to improve interior conditions.

Safe fireground operations depend upon a strong Ladder companies completing both vertical and horizontal ventilation. When we are unable to ventilate a building, we should consider changing strategies to a defensive operation.

Training

From the very beginning, we train almost exclusively for offensive operations and we're good at it. Our standard "bench mark" training is either an old, condemned residential house or a six story concrete burn tower with two stairwells and a built-in standpipe system.

Today's training must focus on tasks and skills we can use every day in either commercial or residential occupancies. We consistently perform well on "academy" tasks, i.e. laying lines, throwing ladders. Training should focus on the skills that are developed as our members mature. These skills are what separate good firefighters

from great firefighters. Scene size-up, fire scene operations, forecasting and predicting an incident, on not only our own individual assignments, but also other companies that are also operating on the fireground are key to a successful incident.

The training should be a combination of everyday operations and the unexpected. Training should be conducted away from our traditional academy sites and performed in occupancies that we function in day-to-day. A key to our future success will be to continue leasing large vacant and condemned buildings and turning those sites into the training academies of the future.

Rescue Assessment

We often begin our attack under the risk management plan that "we will risk a lot in a calculated manner to save savable lives". We should do this aggressively and after a proper size-up of the critical fireground factors (i.e. the structure, fire, occupancy, rescue, access). These factors drive our risk management plan, which drives our strategy, which drives our Incident Action Plan and the completion of our tactical objectives. It provides us our game plan.

Once we accomplish our first tactical objective, All Clear, we often remain interior/offensive without a re-evaluation of the strategy. For 95% of the fires, the correct strategy will be to remain offensive and control the fire. But the 5% defensive fires, or when the structure drives us out, is a losing bet or risk. Once an All Clear is accomplished, we must re-evaluate our risk management plan and adjust our strategy if necessary.

The structure should never drive us out. We need to be outside prior to the structure forcing us out. We can't change the Law's of Physics. Gravity always wins! We can't escape fast enough if the building starts to fall apart.

Communications

Radio communications on the fireground are critical. During a 3-1 assignment, we have plenty of radio "time" or airtime available for communications. As the incident escalates, so does the need for communication. During greater alarm fires, radio "airtime" can be at a premium. During a normal operation we manage. During extreme periods, such as during a "May Day", our radio system is quickly overwhelmed. This is the most critical communication an incident can have with the least amount of air space.

Risk Management

We don't train enough for strategic shifts. How many times do we hear "if they would have given me two more minutes we would have had it"? In some cases you might be right. In most cases you're not, and the risk-to-benefit is unjustified. One of the Incident Commander's primary functions is to drive the fireground strategy. They must

continuously evaluate the fireground factors and the scene hazards and apply them to our Risk Management Plan.

Some buildings are built to burn. If they didn't want them to burn down, they would sprinkler the building.

We take defensive operations too personal. We say we lost! It's impossible to believe we can save every building, put out every fire, or even save every fire victim.

Red Flags

Often on an incident we say that a sudden event happened without warning. Upon review, there are often "red flags" that were identified earlier and either not communicated to the Incident Commander or their importance was not recognized. The Incident Commander, along with operating crews, must maintain a constant awareness of the fireground and identify red flag information early and respond appropriately.

Rapid Intervention Companies

The Phoenix Fire Department introduced Rapid Intervention Companies (RIC) to our operations in the late 1980s. Procedures and basic training was completed department wide and improvements were made during the ensuing ten plus years.

In Phoenix and nationally, some RIC fallacies were developed: A single crew could remove any downed firefighter, it was an unwanted assignment on the fireground, and/or the concept of a relay rescue was unbelievable. These RIC companies were rarely used. As a department, from the Command Officers down to the youngest firefighters, we do an outstanding job of managing firefighter safety. Strong initial and ongoing size-ups, identifying key fireground factors, operating in the correct strategy, and providing a strong incident command team have limited our exposures to fireground hazards.

RIC's were a dispatch assignment or basically a ticket to the game (the fireground). If you were lucky, the Incident Commander would assign you a task, and now you were in! Nobody wanted to be the RIC; you just "stood-by" without being used.

Today's RIC assignments will no longer assume a "stand-by" position. They will function on the fireground as a working Sector or Branch (Rescue Sector/Rescue Branch). They will be accounted for and perform a function on the fireground. They will have two basic purposes to fill. First, they are the primary rescue crew for firefighters operating in the Hot Zone. Second, they will work to improve firefighter safety, i.e. open doors and windows, harden exits, provide secondary means of exit, assist with horizontal ventilation.

The RICs of today are well understood as a fireground position of tremendous need and importance. They will be proactive in improving fireground conditions and improving firefighter safety.

Staffing

Firefighter safety and company level staffing have a direct and critical relationship. Company Officers' main focus should be their leadership role and the supervision of company members operating in the hazard zone. When a Company Officer's focus changes from that supervisor role to a position of assisting the task at hand, we lose the company leader and his/her focus on firefighter safety. By adding a fifth member to operating companies, the Company Officer will have significant staffing to complete their assignment safely and quickly. When considering tactical options and workload, the fifth member greatly increases a company's efficiency within the operation.

National organizations like the National Fire Protection Association, International Association of Fire Chiefs, and the International Association of Firefighters have documented the need for increased staffing and the relationship between firefighter safety and incident scene operations. Approximately 100 firefighters are killed in the line of duty each year and another 100,000 firefighters are injured. A common contributing factor is the lack of staffing on initial arriving companies to overcome the hazards.

Future

How large are the changes needed in the PFD?

They're small – 5% or less! However, that 5% is the hardest; it's high risk and low frequency. It's our highest risk operation/occupancy and the frequency is the lowest of all of our operations. Members of this department must strive to achieve our commitment to safety, training and the Phoenix Fire Department Firefighter Philosophy!

The Phoenix Fire Department has been developing the current system for over 30 years. The system works. Can we improve it? Yes! The 35th Avenue fire and the death of Bret will be the benchmark fire for the next generation of Phoenix firefighters. Each level of this department must pull together to continue to learn and improve a great system.

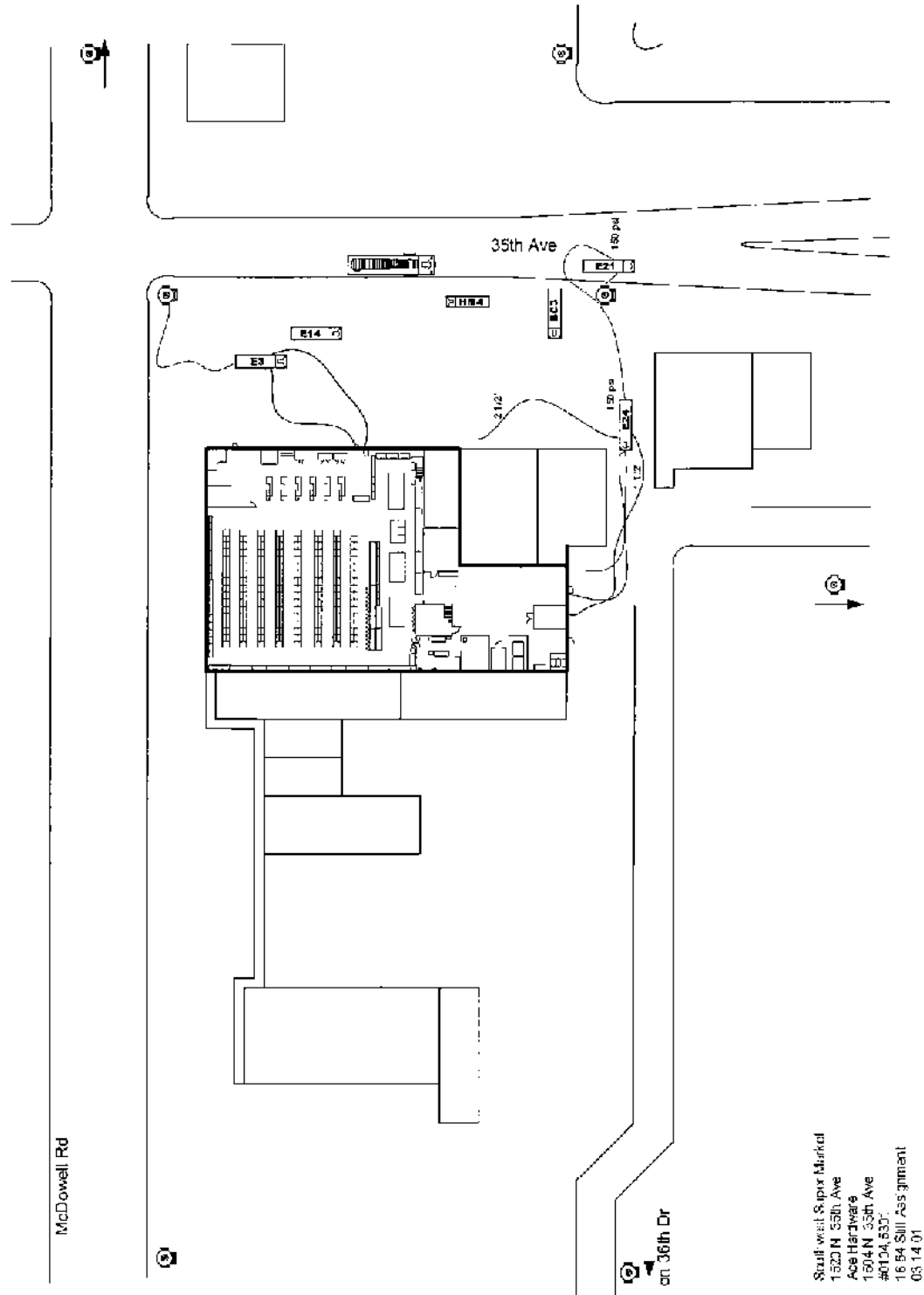
Will the "Recovery Process" continue forever?

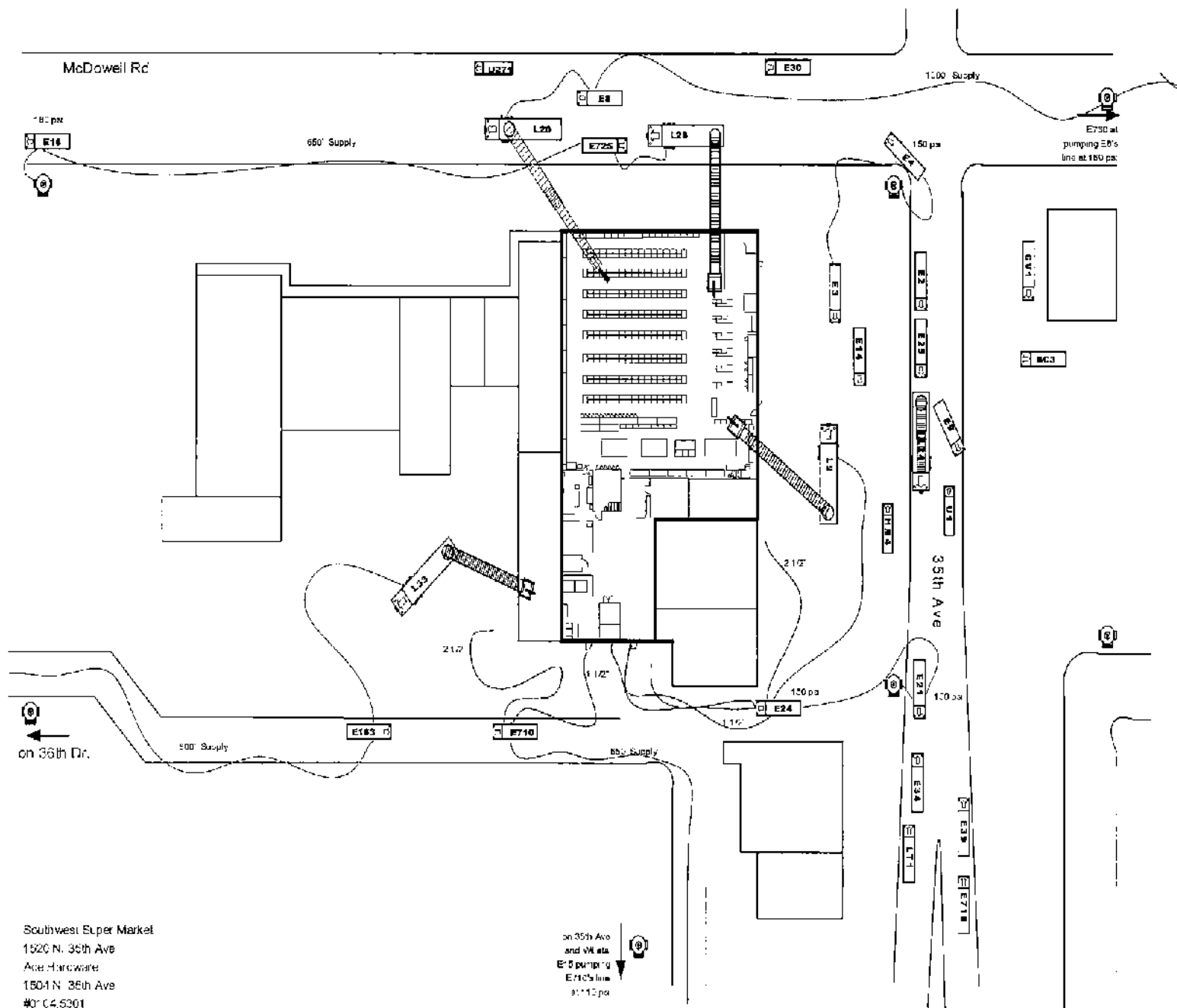
Emotionally for some it will last forever. Operationally, when we put out the last fire and there is no longer any risk to our firefighters, our job is finished. Until then, we must move forward and continue the "Recovery Process" forever.

CHAPTER XI.

APPENDIX A

Individual Company Activity





Southwest Super Market
 1520 N. 35th Ave
 Ace Hardware
 1501 N. 35th Ave
 #0- C4,5301
 1B 54 SIII Assignment L
 03-14-01

Hazmat 4

HM4 was responding to an incident and was canceled while on I-10 near 35th Avenue. The Engineer saw the smoke from the fire and asked the Alarm Room if there was anything working in west Phoenix. Alarm informed him that there was nothing working, but came back shortly thereafter and told HM4 that E24 had been dispatched to a debris fire at 35th Avenue and McDowell.

HM4 exited the freeway at 35th Avenue and proceeded north to the incident. Upon his arrival, he observed heavy smoke at the south end of the store and requested the balance of a 2-1. The HM4 Engineer dismounted his vehicle and walked into the alley to the south of the fire building. He observed fire from the dock to the roof of the supermarket and arcing power lines. He reported these conditions to Alarm. E24 arrived on the scene and took Command.

The HM4 Engineer walked through the occupancies on the east, including the grocery store, and proceeded west to the bakery and barbershop. He evacuated these stores and then went through the bakery to the alley south and west of the supermarket. As he emerged from the bakery, he observed smoke coming from the vents on the west side of the grocery store. He reported this condition to Command and then spoke to an APS worker who reported that the electricity to the supermarket had been cut off. After attempting to report this information, he went back to the north side of the grocery store to attempt to control traffic.

The HM4 Engineer then repositioned his apparatus, donned his SCBA, and returned to the south side of the supermarket. He then used a 2" line off of E24 to protect L9's apparatus for 30 to 45 minutes.

Engine 24 and Rescue 25

E24 was dispatched on the debris fire alone. R25 added to the call by MDT within four and a half minutes of the initial dispatch. The call was quickly balanced to a 2-1 before E24 arrived on the scene.

E24 arrived, laid in from a hydrant, and the acting Captain took command. He could not see the fire from the front of the building; his view was obscured by the clothing store. He had heard the reports of power line involvement and saw arcing as he proceeded to the back of the building.

A line from E24 was pulled to the south side of the fire, south of the power poles that were nearby. Some water was put on the fire from the west, but there was a great deal of concern about electrocution. E24 was designated West Sector (later changed to South). At this point, R25 joined E24. Smoke was visible from the scuppers on the supermarket storage room.

The crews attempted to get the rollup door opened with great difficulty. The E24 acting Captain heard L24 assigned to the roof. When the door was opened, E24 and R25 began to advance two hose lines into the interior. There was heavy smoke to the floor when they opened the door. Command cautioned E24 that E14 had a handline on the other side and to be aware of opposing streams.

As the crews made their attack, it did not seem that they were making progress; debris was falling from the ceiling, and they began to get low on air. Each time the fire was knocked down it came back. Tar was dripping from the roof and the E24 and R25 crews could hear fire above them. They could also hear L24 above them cutting a hole. The hole was complete before E24 left the building.

The E24 and R25 crews withdrew to get air. At this time, the E24 acting Captain heard the first request for help with a lost firefighter.

E710 had been assigned to the South Sector and the crew from 710 was assisting with the firefight. On their second bottle, the E24 crew followed their line through the man door (which had been forced). Most of the visible fire had been knocked down, but there was still a lot of smoke and heat present. E34 was also inside.

At some point, Firefighter Joy exited the building through a south door. The acting Engineer of E24 spoke with him and Firefighter Joy told him that Firefighter Tarver was still inside. The acting Engineer informed his crew and they searched for Firefighter Tarver. The acting E24 Captain was inside calling for Firefighter Tarver. The acting Captain could hear Firefighter Tarver's voice nearby, but could not tell from which direction the voice came.

Engine 24 and Rescue 25 – Continued

R25 followed the crew of E25 as they entered to search for Firefighter Tarver.

After the E25 Captain found Firefighter Tomazin, the R25 firefighters assisted with his removal.

As the E24 acting Captain left the building at the end of his second bottle, he encountered a group of firefighters assisting another firefighter. He assisted and Firefighter Tomazin was removed from the building. Everyone thought that Firefighter Tomazin was Firefighter Tarver and that the rescue was complete.

The E24 crew was exhausted and other companies were arriving to continue the search and the firefight. E24 set up a treatment area on the south.

Engine 21 and Rescue 21

E21 was dispatched on the initial 2-1 assignment. R21 added to the call 40 seconds after E21 was dispatched.

When they arrived on the scene, E21 spotted at the hydrant that had been utilized by E24. Command assigned them to check the clothing store for extension and to get an All Clear. Rescue 21 arrived and became a part of the E21 crew. The clothing store was found to be clear of smoke and fire. Ceiling was pulled to look for fire in the attic, but none was found.

E21 heard reports of smoke and heat from the hole that was cut by L24. They brought in a baby bangor ladder and looked more closely into the attic and still found no fire extension. E14 was assigned to assist E21. The E21 Captain told the E14 Captain to take the northern exposures since his crews were, by now, in both the clothing store and the Ace Hardware.

The E21 Captain went to the south side of the building to observe conditions. He returned to the front and was at the door of the Ace Hardware when they heard Firefighter Tarver's call for help. The E21 Captain encountered the Captain of E14. The E14 Captain told him that he had two firefighters inside. The E21 Captain told his R21 Firefighters to remain in the Ace Hardware store to keep any fire extension in check.

The E21 Captain and two Firefighters entered the supermarket and followed the line in, as they had been told to do by the Captain of E14. As they crawled, they called out for Firefighter Tarver. They communicated verbally with Firefighter Tarver and followed the sound of his voice. The E21 crew never entered the produce area; they remained in the main supermarket area.

The E21 Captain came into contact with Firefighter Tarver's feet. Firefighter Tarver was standing and yelling that he needed help. The E21 Captain recalls that Firefighter Tarver was wearing his facepiece and that his regulator was not vibrating. Firefighter Tarver was not combative, but did not want to go with E21.

The E21 Captain confirmed that he had Firefighter Tarver and brought Firefighter Tarver down to the hoseline. The E21 Captain got behind Firefighter Tarver and they began to crawl to safety. After crawling a short distance, Firefighter Tarver stood up, the E21 Captain lost his grip, and Firefighter Tarver was gone.

The E21 Captain was low on air and began to make his way to the exit. On the way to the exit, he became disoriented and close to being out of air. He followed the sound of other firefighters' voices and came into contact with other crews (E18 and L9). A member of the L9 crew escorted the E21 Captain to the exterior. The two Firefighters from E21 exited the building and ended up buddy breathing as they made their way to the exit.

Battalion 3

BC3 was at 59th Avenue and McDowell when they heard HM4 asking about smoke in west Phoenix. BC3 started to head toward the smoke through traffic and called Alarm on his cell phone. As he was speaking on the phone, E24 was dispatched to a debris fire at 35th Avenue and McDowell Road. BC3 told Alarm on the telephone to balance the call to a 2-1.

As BC3 responded, they heard HM4 report a debris fire at the rear with power lines involved. E24 arrived, took a hydrant, and took Command. BC3 arrived shortly thereafter and spotted near HM4 on the east side of the structure in the parking lot.

BC3 assumed Command and assigned West Sector to E24 (later changed to South Sector). E24 reported that they could not make progress on the fire due to the involvement of power lines. E14 reported that they were staged west. BC3 asked them if they could make access to the fire from the west and E14 told him that there were power lines in that area. BC3 assigned E14 to report to the east side.

Ladder 24 arrived and was ordered to the roof. E21 was assigned to get an All Clear and look for fire extension in the clothing store. E14 was assigned to the Ace Hardware store to get an All Clear and look for fire extension. E21 reported no extension into the clothing store. An All Clear with no extension was also reported for the Ace Hardware.

Power to the building was secured by APS and the crews at the exterior were able to control the fire on the dock area. At the ten-minute elapsed time notification, BC3 informed Alarm that the fire had been controlled on the exterior with no extension and that the elapsed time notification could be discontinued.

E3 arrived on the scene and reported that they had smoke out of the west end of the occupancy. Command ordered E3 to lay a line to the store.

E3 informed Command that they had a working fire in the rear of the market. E14 and R3 were assigned to the interior with E3. E3 was assigned West Sector. The call was balanced to a First Alarm RIC.

BC3 FIT reported that the south rollup door was open and that there was a working interior fire. BC3 asked Alarm to reinstate the elapsed time notifications.

L24 reported that ventilation was complete and that they had heat and smoke through the hole. E34 was assigned to assist E24 on the south side.

CV1 was set up in the parking lot of the Jack-In-The Box across 35th Avenue. The call was balanced to a Second Alarm. Just after the call was balanced, the first request for assistance came from Firefighter Tarver.

Battalion 3 – Continued

BC3 transferred from his vehicle to CV1 to work the balance of the incident.

**See "Command" for more details.*

Safety Section

The on-duty Safety Chief Officer (C94), an on-duty District Safety Officer (DSO), and C957 were dispatched to the first alarm.

C94 was the first Safety Officer to arrive on scene. He re-conned the building and made his way to the command vehicle. He reported heavy fire in the building and recommended a defensive strategy. This was given to the Battalion 3 Field Incident Technician to be relayed to the Battalion Chief. At this time, Command Van 1 was setting up and C94 went to CV1 to establish the Safety Section. Enroute to the CV, the first Mayday was transmitted.

The first DSO on-scene reported to Safety Section and was given the task of establishing accountability on the east side. Command also ordered the DSO to coordinate the RIC teams that were making an entry on the east side for rescue.

C957, South DSO, and Central DSO arrived on scene close together. They were assigned to establish a Safety Sector on the south side and set up accountability. Due to multiple crews acting independently, the Safety Officers stopped companies from entering the building until they could account for all members on the south side. After gaining control, a sector rescue plan was put in place and the remaining firefighters were extricated from the building. Car 93 assisted the Safety Officers and supported the rescue plan.

Ladder 24

L24 first became aware of the call when E24 was dispatched to the debris fire. They saw the column of smoke and began to get together to prepare for a response. Shortly after E24 left, L24 was dispatched on the 2-1.

L24 arrived on the scene and spotted their apparatus on 35th Avenue. They were unable to access the parking lot due to traffic congestion. Due to smoke and the position of the sun, it was difficult for the L24 Captain to see the configuration of the building.

Command ordered L24 to the roof to check the roof and to check for fire extension in the attic space. L24 used a ground ladder to access the roof of the Ace Hardware. When they reached the roof, they found that there was a second roof at a different level. They realized that they would need a bangor ladder, so the junior Engineer went back to the ground to retrieve the ladder. Once the bangor was in place, the L24 crew went to the roof of the storage room.

L24 observed fire around an air handler on the roof of the storage room. They opened a hole to the south of the air handler and got a lot of heat and smoke from the hole. The L24 Captain reported this condition to Command. At this point, they were running out of air and the roof was getting spongy. They came down from the roof and refilled their cylinders at a Utility truck.

Command directed L24 to go back to the roof and cut a hole in the southeast portion of the building in the area of the clothing and hardware store. When they got back on the roof, they realized that the smaller stores did not need to be ventilated, but that the supermarket was in need of ventilation. They accessed the roof of the supermarket, got close to a ventilator, and cut a hole. They got a lot of heat and smoke from the hole. As they were cutting a second hole over the supermarket, the L24 Captain began to hear calls for help on the radio. After the second hole was complete, L24 came back to the ground.

Once they were back on the ground, they went to the south side and entered the rollup door. They could see firefighters searching and they could see some fire. The L24 crew withdrew from the building and went out to the east parking lot to refill their cylinders and rest.

When they returned to the south side, the South Safety Sector was looking for intact crews to go into the structure and assist with the removal of Firefighter Tarver. With permission from Safety, they entered the rollup door and met the crew of E30.

Ladder 24 – Continued

A number of firefighters assisted with the movement of Firefighter Tarver and a backboard was brought in to assist. L24's crew assisted as Firefighter Tarver was loaded on the backboard and helped remove him from the structure.

Engine 3 and Rescue 3

E3 was dispatched on the balance of the 2-1 RIC. Upon their arrival at the scene, they staged at 35th Avenue and McDowell. R3 responded with E3 and staged with E3. E3 announced that Station 3 was staged west of a hydrant.

Command ordered them to lay a line to the bakery on the west side to check for extension. E3 told Command that they had a good vantage point and that it did look like there was something working in the attic as far north as the supermarket. The E3 Captain saw smoke coming from a vent on the north side of the supermarket and from turbines on the roof. Command ordered E3 to lay a line to the supermarket.

After laying a line to the front of the supermarket, the E3 Captain met with the E14 crew and found that they had an All Clear. Members of E14, E3, and R3 stretched a handline into the supermarket and a member of E3 and R3 started to stretch a second line. The crewmembers from E14 knew where the fire was located and had the nozzle. E3's crew backed up E14. Water was flowing and it appeared that they had good conversion and that the fire was darkening down. Ceiling was pulled in the area and they found that the fire had already passed their position in the produce storage area.

The E14 crew was out of air and let the E3 crew know that they needed to leave. The E3 junior Firefighter took the nozzle. The E3 crew assisted members of E14 who became disoriented as they left the produce storage area and continued to fight the fire.

Firefighter Tarver approached the E3 Captain and was in distress. The E3 Captain got him down on the line and Firefighter Tarver left the area rapidly. Firefighter Tarver ran past Firefighter Tomazin as he was stretching the second handline into the building.

Shortly after this contact, Firefighter Tarver made his first radio request for assistance. Members of the E3 and R3 crews could hear Firefighter Tarver calling for help; he was close enough to them to make their radios squeal when he transmitted. They were searching for him and calling to him.

The senior E3 Firefighter and Firefighter Tomazin from R3 pulled their line (the second line) from the produce storage area into the main supermarket to attempt to control fire extension into the store. The E3 junior Firefighter began to run out of air and followed the line to the exterior after telling his Captain that he needed to leave. The E3 Captain took control of the first handline.

As the senior E3 Firefighter and Firefighter Tomazin began to flow water in the supermarket, they tripped over something. When the senior E3 Firefighter got back to his feet, Firefighter Tomazin was gone.

Engine 3 and Rescue 3 – Continued

The senior E3 Firefighter was low on air and followed the line to the exterior. Firefighter Tomazin notified the E3 Captain that he was low on air and was preparing to go to the exterior.

As Firefighter Tomazin began to head for the exit, he heard Firefighter Tarver's voice to the left (west) calling for help. He sounded very close, so Firefighter Tomazin set down his pike pole and headed for the sound of Firefighter Tarver's voice. He came into contact with Firefighter Tarver in the butcher shop area of the supermarket. At this point, Firefighter Tomazin ran out of air. The two spoke and began to crawl to safety; Firefighter Tarver was crawling with Firefighter Tomazin. Firefighter Tomazin radioed Command and told him that he was with Firefighter Tarver and that they were trying to get out.

Firefighter Tomazin lost contact with Firefighter Tarver and ended up in the meat cooler to the south of the butcher shop area. Firefighter Tomazin took his facepiece off and began to call for help. He remained in the meat cooler until he was found by the E25 Captain and removed from the structure.

The E3 Captain remained in the produce storage area with the handline and searched for Firefighter Tarver. L9 followed the E3 line into the building in their assignment as a RIC and came into contact with the E3 Captain. The E3 Captain was out of air when he was found by L9. L9 told him that it was time to leave and he followed them to the exterior.

Engine 14

E14 was out of service for mechanical repair when E24 was dispatched to the debris fire. The E14 Engineer was returning to quarters and saw smoke on the horizon. The Engineer called FS14 and told the crew about the fire. The crew waited on the street for the apparatus to arrive and jumped on the truck to respond to the incident. The E14 Captain added E14 to the call by MDT while responding.

E14 staged west of the incident on a hydrant and reported their position to Command. Command asked if E14 could get access to the fire from the west and E14 responded that they could not. Command assigned E14 to assist E21 in getting an All Clear in the exposures. E14 spotted on the east side of the supermarket. E14 met E21 in the Ace Hardware and then checked the barbershop. They found light smoke but no fire.

E14 moved north to the interior of the Southwest Supermarket to look for extension. There was light smoke at the ceiling when they entered the store. E14 went to the southwest corner of the store and reached the entrance to the storage area. They found a lot of smoke and some heat behind the plastic flap that separated the main store from the produce storage area. E14 headed for the exterior to get a hose line. They met E3 and R3, which had laid a line and were stretching an attack line to the interior. As the handline was stretched, the smoke condition worsened.

The E14 Captain got an All Clear on the balance of the supermarket. At this point, the back wall of the store was still visible from the front. E14 took E3's line into the produce prep room. The E14 Captain was the last in line and the E14 Engineer had the nozzle. There was not enough water pressure, so the E14 Captain walked the line back to the exterior and removed several kinks. As the E14 Captain reached the exterior, the line became hard. The E14 Captain followed the line back to his crew.

Water was being applied to the fire. Visibility in the produce storage area was poor and the visibility in the supermarket was worsening. E3 and R3 deployed a second line off of E3 and joined E14.

The nozzle from the first line was given to the E3 junior Firefighter and the Engineer from E14 backed him up. The storage area lit up with fire. The E14 Firefighters attempted to pull ceiling in the produce area.

No progress was being made on the fire. Firefighter Tarver told the Captain from E14 that he was low on air and needed to get refilled. The E14 Captain huddled his crew and told them that they were going to leave the building as a crew. The other E14 Firefighter reported that he was also low on air. The E14 Captain told his crew to follow the line and they left. The E14 Captain was last in line.

Engine 14 – Continued

As he began his egress, the E14 Captain fell backwards. When he stood up, he ran into a wall and became disoriented. The E14 Captain was redirected to the line by the Captain of E3. The E14 Captain's low-air alarm began to vibrate at this point. The Captain ran out of air 10 to 15 feet from the exit and unclicked his regulator. Visibility in the supermarket was poor.

Once the E14 Captain was outside, he looked for his crew. He found the Engineer walking toward him. The Engineer had gotten out first and assumed that the Firefighters had beaten her out and that they would be at the Utility truck. At this time, Firefighter Tarver called for help.

The E14 Captain went to the E21 Captain and told him where they had been operating and to follow the line inside. The E14 Captain reported to Command that two E14 Firefighters were unaccounted for. The E14 Captain also met with the Captains of L9 and E18, those crews having been assigned as RIC's.

The E14 Captain and Engineer reentered the supermarket after refilling their cylinders. Visibility had improved somewhat since windows on the east side of the supermarket had been removed. As they went to the produce area, they were met by other Firefighters who were on their way out. The E14 Captain heard a radio report that Firefighter Tarver had been located. The fire had extended into the main part of the supermarket and further entry through the front was not possible.

The E14 Captain sent the E14 Engineer to the south side of the building to search for their missing Firefighters. The Engineer returned and told the Captain that Firefighter Joy was out and accounted for.

Firefighter Joy

Firefighter Joy entered the building with the crew of E14. When the crew turned to leave the building, he tripped and fell into a wall. Firefighter Tarver piled in behind him. They turned to head the other way and Firefighter Tarver ran into a wall. Firefighter Tarver headed out and Firefighter Joy held his coat to keep up with him since Firefighter Tarver was moving quickly.

Firefighter Joy and Firefighter Tarver realized that they were lost and decided to announce a Mayday. Firefighter Joy attempted to use his portable radio to broadcast the Mayday, but got no response. Firefighter Tarver then used his radio to request help. Firefighter Joy believed that they were in the main part of the store at that time. At this point, Firefighter Joy ran out of air. Firefighter Joy and Firefighter Tarver became separated at this time.

Firefighter Joy recalls going through the metal bi-swing doors that are between the main store and the butcher shop. Firefighter Joy began walking. He began to lose sensation in his legs and was not able to feel things with his hands. He does not remember feeling panicked. Firefighter Joy recalls feeling cooler air and was also likely in the meat cooler.

Firefighter Joy followed the sound of Firefighters' radios. He approached the E34 crew from the direction of the meat preparation area into the storage area. The Captain and senior Firefighter from E34 escorted Firefighter Joy to the exterior. Firefighter Joy was wearing his facepiece, but his regulator was removed. He was unable to recall where he and Firefighter Tarver had last been together. Firefighter Joy was later treated.

Engine 710

E710 was returning from a move-up on I-10. They had been monitoring the Southwest Supermarket call and added themselves to the call after it was balanced to a First Alarm RIC. They arrived on the scene and staged to the south.

Command ordered them to lay a line to the bakery just west of the supermarket. Thinking that they could get access to the bakery from the south, E710 laid a line from the south. When they found that their path was not clear, they spotted near the southwest corner of the supermarket.

The Engineer and Firefighters from E710 completed the supply line attachment to E710. The Firefighters then pulled a handline from E710 and advanced it to the rollup door. They advanced the handline from E710 through the rollup door on the south side of the storage room and fought fire until they ran out of air.

As the line from E710 was prepared and advanced, the Captain from E710 assisted E34 as they forced the man door. Then the Captain from E710 and two members from E34 entered through the man door and advanced a handline from E24. They began to extinguish all visible fire and advanced forward. The E710 Captain heard a scream and attempted to contact the person in distress. The E710 Captain went through a door searching for the person in distress. As he was in this area, his low-air warning began to vibrate.

The Captain from E710 went to turn around to go back from where he came and became disoriented. He ran into some other Firefighters that were also disoriented. The Captain from E710 then ran into the Captain from L9. He asked the L9 Captain for assistance in exiting and a member of L9 began to escort the E710 Captain to the east door. After some difficulty, they were both able to exit the supermarket.

The E710 Captain went back to his apparatus and learned from his Engineer that his Firefighters were at a Utility truck refilling their cylinders. He exchanged his SCBA with his Engineer. The two Firefighters rejoined the E710 Captain at their truck.

The E710 Captain reentered the structure with his junior Firefighter. As they proceeded into the structure, they encountered other Firefighters removing Firefighter Tomazin. The E710 Captain and junior Firefighter assisted with Firefighter Tomazin's removal and assisted with his treatment once outside.

The senior Firefighter reentered the building with E6 on the south side of the structure. The E710 senior Firefighter proceeded to the butcher shop area with E6 and escorted the E25 Captain from the structure after the crew of E6 found him.

Engine 710 – Continued

After Firefighter Tomazin was transported and his cylinder was refilled, the E710 Captain reentered the structure a third time through the man door and advanced into the structure. When the roof started to fall in, the Captain grabbed another Firefighter and exited the structure. Fresh crews were arriving on the scene and E710 did not go back into the structure.

Engine 25

E25 was dispatched on the First Alarm RIC from quarters. They arrived on the scene and staged west on McDowell Road. Command assigned them to park their apparatus and directed them to go to South Sector to relieve E24 and assume South Sector.

When they arrived at the south side, hose lines were deployed into the building. They entered the man door and saw the Captain of E3 to the north. They proceeded to the north and encountered Firefighter Joy. They passed him back behind them to other Firefighters.

The E25 Captain and two Firefighters proceeded to the south and entered the man door, followed E24's line, and looked for the E24 Captain. The E25 Engineer was dressing and would later join the crew. The senior E25 Firefighter began to operate a nozzle near the threshold between the main storage area and the produce storage area. The E25 Engineer joined the senior E25 Firefighter on the line.

Just as the Captain made contact with the E24 Captain, the first Mayday from Firefighter Tarver was transmitted.

The Captain took the junior E25 Firefighter and began to search the main storage room area, proceeding north toward his Firefighters. As they searched, the Captain followed a path to the north/west. He entered the butcher shop and followed the sound of Firefighter Tomazin's voice into the meat cooler. Visibility in the butcher shop and the meat cooler was nearly zero.

The Captain asked Firefighter Tomazin if he was alone and Firefighter Tomazin told him that Firefighter Tarver was with him. Firefighter Tomazin was able to talk at this time, but was incoherent.

The Captain helped Firefighter Tomazin to his feet and signaled to his Firefighters and his Engineer that help was needed. As the junior Firefighter and the Engineer from E25 took control, Firefighter Tomazin became unconscious. The senior Firefighter assisted with lifting Firefighter Tomazin. Firefighter Tomazin was carried to the exterior of the building with great difficulty with the assistance of members from E34 and R25. In the course of being removed, Firefighter Tomazin's SCBA and protective coat were removed.

The Captain reported to Command that he had two Firefighters down, that one was on the way out, and that he needed assistance. After they emerged from the building with Firefighter Tomazin, the Firefighters and the Engineer from E25 began treating Firefighter Tomazin and told a company officer that their Captain was still inside the structure.

Engine 25 – Continued

As Firefighter Tomazin was removed, the Captain returned to the butcher shop to search for Firefighter Tarver. He followed the sound of Firefighter Tarver's PASS device to him. He tried to move Firefighter Tarver, but was unable to budge him. He noticed that the main body of the supermarket was well involved with fire and knew that that escape route had been cut off.

The E25 Captain's SCBA low-air alarm had begun to vibrate at this point. He ran out of air and removed his facepiece and regulator. He buried his face in his turnout coat and began his attempt to crawl out of the building. He turned around and crawled toward the voices of other Firefighters and came upon their feet. He asked those Firefighters for assistance in getting out of the building. These Firefighters assisted him from the building and he was transported to the hospital. The Firefighters who assisted the Captain were from E6.

Ladder 9

L9 had just cleared from the scene of an earlier structure fire. They saw smoke on the horizon and began to head in the direction of the smoke. When they arrived on the scene, they announced that they were staged. Command assigned them immediately to form a RIC with E18.

The driving Engineer stayed with the apparatus and the L9 Captain, the riding Engineer and the two Firefighters gathered on the east side of the Southwest Supermarket and met up with E18. The riding Engineer from L9 carried the RIC air bottle.

L9 entered the building and followed the line to the west. They came upon the Captain from E21; he was out of air and lost. The riding Engineer handed off the RIC cylinder and escorted the E21 Captain to the exterior.

The L9 crew continued and encountered the Captain of E710; he was low on air and lost. He was placed on the line and headed for the door unescorted.

The L9 crew continued and encountered the Captain of E3; he was low on air, but not lost. The Captain did not want to leave because his crew was not accounted for. The L9 Captain told the E3 Captain that they all needed to leave. They turned to leave and ended up heading back in the direction of the fire. They reversed their path and crawled to the east exit. The exit process took about three minutes.

In the meantime, the riding Engineer from L9 had completed the removal of the E21 Captain and headed back inside. He encountered the Captain from E710 and two other unidentified Firefighters. They were lost and low on air. He escorted them to the exit and turned to go back inside the structure to join his crew. He had not traveled very far on the inside when he encountered his crew on the way out. They all left the structure, along with the E18 crew and the Captain of E3. As they exited, the entire store lit up.

After they emerged from the building, the L9 crew took their tools to the south side of the structure. When they arrived at the south side, they used their tools to open some doors. The doors led into closets or access to the clothing store or hardware store. There were enough Firefighters on the south side, so the L9 crew repositioned their apparatus and began to flow water through their tower on the main body of fire.

Engine 34

E34 was dispatched on the First Alarm RIC from quarters. They staged south on 35th Avenue. Command assigned E34 to take a line off of E24 and attack the fire from the south. The acting Engineer on E24 provided them with a high-rise pack to extend the line.

E34 and the Captain from E710 forced entry to the man door on the south side of the building. The E34 Captain and his two Firefighters entered the man door and advanced their line directly to the north on the east wall of the storage room. They encountered fire above and around them immediately upon entry and extinguished it.

Emergency traffic was sounded and crews were ordered to go defensive on the fire. A few moments later, Firefighter Tarver gave a Mayday. E34 stayed inside and operated their line to provide protection for any trapped Firefighters.

About two minutes after Firefighter Tarver's Mayday, Firefighter Joy approached E34's crew from the northwest. Firefighter Joy said that he had followed the sound of their voices. Firefighter Joy's regulator was removed from his facepiece and he was having trouble making forward progress. The E34 line was given to the Captain from E710. The Captain and senior Firefighter from E34 escorted Firefighter Joy from the building and then returned to their hose line. After a few minutes, the senior Firefighter ran low on air and both Firefighters exited to refill their cylinders.

The E34 Captain continued to flow water and later gave the nozzle to the crew of E25. The E25 Captain transmitted a Mayday for assistance after finding Firefighter Tomazin and Firefighter Tarver. The junior E34 Firefighter assisted with the removal of Firefighter Tomazin. At this point, the entire E34 crew was outside.

The E34 crew reassembled at the Utility truck and refilled their cylinders. They returned to the south side of the building. When they arrived, Command ordered them to the interior to assist the E25 Captain. The crew was spent and saw that E15 had just arrived. The E15 crew agreed to take the assignment. The E34 crew remained on the south side and assisted with access for an APS truck until they were assigned to the interior to assist with the removal of Firefighter Tarver.

Engine 18

E18 was dispatched on the First Alarm RIC. They staged and were ordered by Command to reverse lay from L26 and supply the L26 aerial.

As they were halfway through the reverse lay, Command ordered E18 to form a RIC team with L9 in response to Firefighter Tarver's Mayday. The E18 Engineer completed the reverse lay and the Captain and two Firefighters proceeded to the east side of the supermarket.

The junior Firefighter from Engine 18 retrieved a RIC bag from BC3. The Engineer from E14 told the E18 Captain that Firefighter Tarver had last been seen on E3's line and to follow that line. E18 and L9 started into the building following E3's line.

About 50 to 100 feet into the supermarket, E18 encountered the Captain of E21. He was out of air and off the line. An Engineer from L9 escorted the E21 Captain out of the building. Further down the line, the E18 crew encountered the Captain from E710. He was placed on the line and proceeded out of the building on his own. There was a great deal of debris on the floor and fire was observed overhead. The interior was very noisy due to the fire and a venting helium cylinder.

An evacuation order was given by Command after it was thought that both lost Firefighters had been found. The crews began to follow the line out, but found that they were going in the wrong direction when they read the hose couplings and encountered the Captain from E3. The E3 Captain was out of air but not lost.

The E18 and L9 crews turned and exited the building along with the E3 Captain. As they were exiting the building, the fire had progressed and was consuming the supermarket.

After the E18 crew reached the exterior, they refilled their cylinders and attempted to provide aid to Firefighter Joy. They later helped look for extension in the occupancies to the west of the Southwest Supermarket.

Ladder 26

L26 was dispatched on the First Alarm RIC. As they arrived on the scene, they were ordered by Command to spot on the north side, go to the roof, and provide vehicle ventilation.

The truck was spotted on the northeast corner of the supermarket and the Captain, junior Engineer, and the Firefighter ascended to the roof in the aerial platform. The senior Engineer remained at the turntable and set a ground ladder as a second means of egress from the roof.

About ten feet south of the north roofline, a large turbine was removed. The smoke that came from the turbine came out slowly. The roof was constantly sounded and was solid. A second turbine was partially removed and produced more smoke. The L26 Captain saw the L24 crew at the south end of the supermarket roof. At the same time, there were radio reports that Firefighters were lost or trapped inside. The L26 Captain decided to cut a hole near the second turbine since L24 was cutting to the south.

The L26 crew cut a four-foot by fifteen-foot hole, cleaned out the opening, and got a lot of brown smoke under a lot of pressure out of it. No fire emitted from the hole. A second hole was cut to extend the first hole to the shape of an "L". The second hole was ten-foot by three-foot and produced heavy smoke under pressure. The roof was still solid and the edges of the hole were not sagging. The L26 Captain was not able to report what he found on the roof due to the amount of radio traffic that was occurring.

The crew began to cut a third hole but was running low on air. At the same time, Command ordered everyone off of the roof. L26 got back into their platform and went back to the ground.

Once on the ground, the L26 crew removed some plywood and windows at the northeast corner of the supermarket. The senior Engineer had set the truck up for a defensive operation and was ready to flow water. L26 received permission from Command to open their ladder pipe and worked it for about an hour.

Ladder 1

LT1 was dispatched on the First Alarm RIC from quarters. LT1 did not have their ladder as it was at Fire's Resource Management for annual UL testing. They responded to the scene and staged themselves about 100 feet south of the scene on 35th Avenue.

When they heard the Mayday from Firefighter Tarver, the LT1 Captain ordered his crew to suit up and gather their fire fighting equipment. The crew walked to the Command Post and was assigned the task of opening up the front of the building.

LT1 proceeded to the front of the store and removed glass from all of the occupancies that faced the east, including the Southwest Supermarket. As they completed this task, Command ordered them to go to the south side of the store to assist with rescue.

A Safety Officer at the south door split the LT1 crew. The LT1 Captain and two Firefighters entered the man door on the south, followed the E24 hose line, and met the Captain and junior Firefighter from E6. They followed the sound of a PASS device to the E6 crew. The two partial crews removed Firefighter Tarver's protective coat since it was constantly getting snagged. The E6 Captain and junior Firefighter were out of air and left.

When they arrived on the south side, the LT1 Engineers forced entry to some doors on or near the dock. After the LT1 crew was split, the two Engineers stood by on the exterior until they were ordered to go inside to relieve the first half of the LT1 crew. On their way in, they passed the other LT1 crewmembers. After they had been inside for a few moments, the senior Engineer had to leave for air. The junior Engineer joined the Captain of E710 and proceeded deeper into the structure. They came upon Firefighter Tarver in the position where the other LT1 members had deposited him. They were both low on air so they left the building.

The LT1 crew was able to move Firefighter Tarver 10 to 15 feet before they ran out of air. There was a great deal of debris and it was very difficult to move Firefighter Tarver. During the time that the LT1 crew worked inside, fire conditions worsened and debris continued to fall. The LT1 crew exited to the south through the man door. As they left, they passed other firefighters who were on their way to Firefighter Tarver.

The senior Engineer from LT1 and one of the Firefighters from LT1 joined the Captain and senior Firefighter from E4 and assisted with the movement of Firefighter Tarver after LT1 (first half) moved him as far as possible.

Engine 15

E15 added to the call by MDT nine minutes after the First Alarm RIC and after clearing from an earlier EMS call. They approached from the north but found their way to a position south of the fire scene on 35th Avenue. They set up to pump E710's line, but were unable to raise them on the radio.

The Captain from E15 walked to the south side of the fire building to speak with the Engineer on E710 to tell him they were ready to pump. The Captain returned to E15. At this time, Maydays began to be heard on the radio.

E15 went to the south side of the building as a crew and used their saw to help open the south doors to the clothing store. An APS truck entered the alley to disconnect electricity to the building so Firefighters had to make way until the truck was done.

A Safety Officer at the man door was assigning teams of two to enter the structure. The Captain from E15 entered the man door with an unidentified Firefighter, but they were not able to make progress into the building due to fallen debris. They reached the LT1 crew and learned that they were doing okay and that there was no room for any additional Firefighters to help move Firefighter Tarver.

The E15 Captain and the unidentified Firefighter left through the man door and reassembled E15 as a crew.

The crew waited for an assignment and agreed to take a RIC assignment that was originally assigned to E34. E15 was assigned as a RIC to enter the rollup door and assist with the movement of Firefighter Tarver. They passed a backboard to the Firefighters who were moving Firefighter Tarver.

The E15 crew then went back outside and Firefighter Tarver was brought out shortly thereafter.

Engine 30

E30 was dispatched on the Second Alarm after they cleared from an EMS call at 35th Avenue and Bethany Home Road. Command assigned E30 to establish a Treatment Sector on the south side of the building, but the assignment was redirected to an ALS company that was on the scene. From this point on, communication with Command was very difficult.

E30's crew helped E725 set up a portable monitor on the north side of the building, went through the barbershop located west of the Southwest Supermarket, and emerged in the alley behind the supermarket. The crew then assisted occupants with the removal of some vehicles and operated a 2-1/2" line on the west. During this time, the chain link fence between the south and the west sides was removed by E30 crewmembers and the Captain from E30 communicated with crews on the south.

The Captain from E30 decided that his crew would be needed on the south side of the building. His crewmembers were fresh and their SCBA's were full. The E30 Captain met face-to-face with the Aviation Deputy Chief and made him aware that they were available.

E30 was assigned to go into the storage room from the south to assist with the removal of Firefighter Tarver. The E30 Engineer carried a RIC bag and the senior Firefighter carried a generator light. The crew entered through the man door and proceeded north. E4 and E6 had provided E30 with information about Firefighter Tarver's location.

As the crew entered, the senior Firefighter searched a storage room to the west of the man door. When he left the fenced storage area, he moved approximately 10 to 15 feet and encountered Firefighter Tarver. They attempted to lift Firefighter Tarver, but had great difficulty due to the limited amount of room in the area. Since Firefighter Tarver was not wearing an SCBA, the RIC bag was discarded at the spot where Firefighter Tarver was found since it would be of no use. Visibility in the area where Firefighter Tarver was found was very poor.

The senior Firefighter developed an operational problem with his SCBA, notified the Captain that he needed to leave, and exited the building. When he reached the outside, he was treated by other Firefighters and transported to Saint Joseph's Hospital. As he was being treated, he directed other Firefighters to go inside and help E30's crew.

E30's crew did not feel that they were able to move Firefighter Tarver very far. L24 entered the building with a backboard and assisted with the removal of Firefighter Tarver to the exterior.

Engine 6

E6 was dispatched on the Second Alarm. They had seen the fire earlier on television. E6 had just cleared from an EMS call and was picked up for the Second Alarm. E6 monitored radio traffic while responding and they were aware that a Firefighter was trapped in the building.

When they arrived, E6 staged about 100 yards south of the scene. After attempting to communicate with Command on the radio for a minute or two, the E6 Captain ordered his crew to dismount the apparatus and to gather their EMS gear and don their protective clothing. As the crew assembled their gear, the E6 Captain met face-to-face with the Incident Commander and was directed to assist with treatment on the south side of the building. On their way to the building, the E6 crew procured a gurney and loaded their EMS equipment on it.

The crew arrived at the south side at the same time that Firefighter Tomazin was being removed. There were sufficient resources to treat Firefighter Tomazin without the need to use E6.

An unknown Firefighter emerged from the building and motioned to the E6 senior Firefighter. The E6 Captain learned that there were two Firefighters down on the inside and he was directed to enter with his crew to locate and rescue the downed Firefighters. The E6 Captain ordered his crew to mask up. The entire crew followed E24's line through the man door to the nozzle. Just after the crew entered the door, a second hose line near the man door burst and sprayed water over the entrance and venting gas from a propane cylinder ignited near the produce prep room. The burning vented gas was very loud.

When the E6 Engineer reached the nozzle, he heard the sound of a PASS device to the west (his left). He checked with the E6 Captain and the Captain, Engineer, and senior Firefighter headed west toward the sound of the PASS. The crew entered the butcher shop through a door and immediately located Firefighter Tarver on the floor to the north. The time from the entry of the E6 crew through the man door, until the time they reached Firefighter Tarver, was estimated at 90 seconds.

The E6 Engineer/Paramedic assessed Firefighter Tarver and found him unresponsive. Firefighter Tarver was wearing his turnouts and SCBA; his facepiece was half off.

As the Engineer/Paramedic from E6 assessed Firefighter Tarver, the Captain of E25 crawled from the meat cooler and encountered the senior Firefighter from E6.

Engine 6 – Continued

The Captain of E6 radioed Command with a Mayday and told Command that he had two Firefighters down and needed assistance.

The Captain of E25 was wearing his SCBA, but his regulator was disconnected. He was out of air and requested help in exiting the building. The senior Firefighter from E6 pulled the E25 Captain to his feet and passed him through the a door to members of E710 that were outside the door. The E710 members escorted the Captain to the exterior where he received treatment and transportation to the hospital.

The senior Firefighter and the Engineer from E6 attempted to lift Firefighter Tarver but were unable to do so since Firefighter Tarver was lying partially under a table. They repositioned Firefighter Tarver and removed his SCBA. They were successful in moving Firefighter Tarver to and through a door into the main storage room. Once they encountered the small walkway and debris in the storage room, they could no longer carry Firefighter Tarver or drag him. They were forced to lift him, move a small distance, and set him down again. With the assistance of the junior Firefighter and the E6 Captain, Firefighter Tarver was set on top of some pallets.

The air supply for the senior Firefighter from E6 was running out and he was forced to leave. When he reached the exterior, the senior Firefighter contacted Safety Officers at the door and told them of the need for additional Firefighters for assistance with Firefighter Tarver.

The junior Firefighter from E6 continued to apply water to the visible fire and assisted with the movement of Firefighter Tarver.

Members of L1 relieved E6. The junior Firefighter from E6 and the Firefighters from LT1 removed Firefighter Tarver's protective coat since it was snagging on numerous objects.

Engine 4

E4 had been canceled on a HAZMAT call. They added themselves to the call by MDT seven minutes after the First Alarm RIC.

After their arrival on the scene, they staged south of the fire. Command directed E4 to pump E3's supply line. E4 set up to pump E3's line. The E4 Engineer remained with his truck and assisted the E3 Engineer. He also applied water to protect E3's apparatus later in the incident when the fire spread to the Southwest Supermarket and moved E14's apparatus to a safer location.

Command assigned E4 to meet with E710 in the West Sector. The E4 Captain and two Firefighters geared up and made their way to the bakery on the west side of the supermarket. They were unable to find any Firefighters or extension. They believed that E710 might be on the south side, so they proceeded there to attempt to locate E710. As they passed the east side of the supermarket, they saw heavy smoke inside.

When they arrived on the south side, the E4 Captain and two Firefighters entered the structure through the rollup door. E4 found E710 and assisted with fire fighting. After being there for a few minutes, the crew of E4 saw some other Firefighters dragging a Firefighter. They found the crew of E25 attempting to remove Firefighter Tomazin. The two Firefighters from E4 assisted the crew of E25 and helped to remove Firefighter Tomazin from the structure.

The two E4 Firefighters went to a Utility truck to refill and retrieved a spare air cylinder from their apparatus. The junior Firefighter from E4 was diverted to help the HM4 Engineer with protection of the L9 apparatus. The senior E4 Firefighter returned to the south side of the building and helped his Captain change to a new cylinder.

The E4 Captain made a Mayday call after he heard the Captain of E6 call to request help. They saw the Firefighter from E30 and Captain of E25 come out of the structure.

They were then teamed with the two Engineers from LT1 and entered the structure through the man door. They joined the crew of E6 and found Firefighter Tarver on the floor and began to move him toward the exit. With great effort, they were able to move him a short distance. Given the deteriorating interior conditions, the decision was made to leave the structure. When the E4 and LT1 members reached the exterior, they relayed Firefighter Tarver's location to a Safety Officer at the door. Another crew was sent in to assist with Firefighter Tarver's removal.

Engine 1

E1 was dispatched on the Second Alarm. They assumed Staging Sector upon their arrival at 35th Avenue and I-10. The Captain and the Engineer assumed staging duties and the three Firefighters proceeded to the fire to assist.

The crew first went to the south side of the store and found that they were not needed. They assisted with the forcible entry of some doors at the rear of the Ace Hardware, and got an All Clear on the hardware store. They assisted with apparatus protection on the east side and then headed back to the south side.

The removal of a Firefighter from the interior (Tarver) was expected soon. The junior Firefighter was drafted to prepare a treatment area. The senior Firefighter and the other Firefighter were assigned to go inside the man door and assist with the removal of Firefighter Tarver. They went inside and searched further and the one Firefighter helped with the removal of Firefighter Tarver. The senior Firefighter emerged immediately following Firefighter Tarver's removal.

The junior Firefighter had been reassigned to work with another company, but never made it into the fire occupancy prior to Firefighter Tarver's removal.

Engine 9

E9 had cleared an earlier EMS call and had been monitoring the fire at 35th Avenue and McDowell. When they heard the first emergency traffic transmitted and other units being dispatched that were further from the scene, E9 added themselves to the call. They arrived on the scene from the north. No Level II staging site had been established.

E9 announced that they were on the scene and was immediately assigned to establish a Treatment Sector on the south side of the fire building. E9 parked their apparatus on 35th Avenue near the Ace Hardware store. The crew dismounted and gathered their EMS gear.

The crew proceeded to the south side of the building. Within a minute after their arrival at the back of the building, Firefighter Tomazin was removed from the building. E9's crew treated Firefighter Tomazin and moved him to R15. The medics from E9 and R15 treated Firefighter Tomazin in the Rescue and he was transported to Good Samaritan Hospital. The Captain from E9 drove the Rescue to the hospital.

The Engineer from E9 remained on the scene, helped to protect L9 from fire exposure, and assisted with the treatment of Firefighter Tarver when he was removed from the building.

Engine 2

E2 was dispatched on the Second Alarm. They approached the scene from the east on McDowell and spotted behind E25. No staging area had been set before they arrived, but E1 assumed Staging shortly after E2's arrival. The E2 Captain heard on the radio that a Treatment Sector was being established and received an assignment from Staging for E2 to go to the Treatment Sector area and assist.

The E2 crew dismounted and brought their fire fighting and ALS gear to the south of the building. A minute or two after their arrival at the back of the building, Firefighter Tomazin was removed from the building.

The medics from E2 assisted with the treatment of Firefighter Tomazin. The Captain and senior Firefighter went to the west side of the building to see if there was any way to access the supermarket from the west. There were no openings on the west wall found. The E30 crew and the junior Medic from E2 joined the E2 Captain and senior Firefighter and pulled a 2-1/2" line from E710. The line was used to apply water to the roof until E2 received an order to shut the line down.

After the line was shut down, the E2 Captain remained on the west side and assisted a City Engineer that used an APS bucket truck to visualize the roof. The balance of the E2 crew went back to the south. The Engineer and the senior Firefighter used a line to extinguish fire on the exterior and the interior through the rollup door. The Engineer helped remove Firefighter Tarver on a backboard. The senior Medic assisted with the treatment of Firefighter Tarver on the scene and while en-route to the hospital.

CHAPTER XII.

APPENDIX B

Training Objectives

Air Management

This class was broken down into two areas: air management as a crew and air management as an individual. As a crew, all members are responsible for keeping track of each other's air consumption and reporting it on a regular basis. As individuals operating on the fireground, we have a responsibility to our crew, as well as everyone at the incident, not to run out of air and create a crisis situation.

In addition to the areas above we concentrated on the following:

- The concept of air management as it relates to firefighting
- Scene size-up as it relates to air management
- "Work vs. Air Consumption" equation
- Company Officer's responsibilities as it relates to air management
- Critical thinking and behaviors if you or your crew are low on or out of air
- Emergency SCBA procedures

Self-Survival

Again, this class was broken down into the same two areas: self-survival as an individual and self-survival for the crew. The concept of this class was focused on prevention. The majority of the content concentrated on, "if we can keep ourselves out of trouble, then the chances of needing a RIC are greatly reduced". The remainder of the class dealt with self-survival techniques.

This class had several objectives that included:

- The concept of self-survival as it relates to firefighting
- Our actions are based on the 75/25 theory
 - 75% how to stay out of trouble*
 - 25% what to do when you are in trouble*
- Overall scene size-up to keep you or your crew out of trouble
- Company Officer's responsibilities as it relates to self-survival
- Critical thinking and behaviors that keep you or your crew out of trouble
- Critical thinking and behaviors if you or your crew are in trouble
- Basic self-survival techniques

Fire Ground Communications

This class was separated into three areas of communications between the crews, sectors, and the command post. This class focuses on two methods of communications, both with radios and face-to-face. It also demonstrates the need for accurate and regular reports (C.A.N. system, Conditions/Actions/Needs) at the task, tactical, and strategic levels to ensure a safe and successful fireground. The class objectives are:

- The need for effective communications in firefighting
- Traits of an effective communicator
- How we can and do communicate on the fire ground
- Elements for complete and understandable reports
- A basic understanding of radio etiquette and function

Hands-On Training

This module is the fourth in the series of "lessons learned" from the Southwest Supermarket fire. The purpose of this class is to reinforce the self-survival techniques that have worked for us in the past, and to integrate the new ideas presented in the past three training modules. Specifically, the 75%-25% idea, air management skills, Fire Ground Communications, and the interior-reporting model. These exercises are based on the "practice as you play" theory and are intended to utilize a full 2-1 assignment including a command component. Commercial buildings located geographically around the valley were used to simulate complex structures similar to the type the surrounding companies will respond to. SCBA face pieces were covered with "limo" tint and building windows were blacked out to simulate smoke conditions. Participants were asked to pick at random a fireground scenario that duplicated the incident.

The scenarios are as follows:

1. Change in interior tenability
2. Identify and react to progress reports including changes in roof tenability
3. Encountering a lost or separated fire fighter
4. Survival in an extended interior operation

Objectives:

- Overall scene size-up to keep you and your crew out of trouble
- Create an Action Plan
- Critical thinking and behaviors that keep you and your crew out of trouble (75%)
- Critical thinking and behaviors if you or your crews are in trouble (25%)
- Basic self-survival techniques
- Maintain Accountability
- The crews' responsibilities as it relates to air management
- Critical thinking and behaviors if you or your crews are low on air
- Emergency SCBA procedures

- The successful completion of initial and ongoing reports (C.A.N. System)
- The successful activation of the "Mayday" procedures if applicable
- Demonstrate proficiency in communications inside and outside crews

Benchmarks:

- Keep the crew together and **account** for all crewmembers
- Communicate **Action Plan** to crews'
- Monitor the crew's **air supply**
- Make a tactical decision based on **deteriorating conditions**, and **lack of progress** finding the fire.
- Initiate "**Mayday**" when crewmembers are in trouble.
- React appropriately and initiate the **buddy-breathing procedure**
- Be able to return to the exterior and **not run out of air**
- React appropriately to "**RED FLAG'S**"
- Always operate within the **buddy system** for your crew and others
- Successfully "**read couplings**" to exit the structure
- Make appropriate decisions when operating as an **interior sector**

Rapid Intervention Training Objective

This class was designed to be a demonstration and practice session covering RIC searching methods and then packaging and extrication techniques.

- Rapid location audio search methods
- Crewmember duties when performing a RIC search & rescue
- Efficient hoseline movement (advancing and retreating)
- RIC accountability methods while searching
- Downed firefighter packaging
- Downed firefighter extrication from the hazard zone

RIC Procedure Training

This class was designed to present the basic overview of Rapid Intervention Crews operation on the fireground for the Task, Tactical, and Strategic levels of operations.

- Understand the need for RIC
- Dispatch and Deployment
- RIC Incident Action Plan
- On scene Organization and Preparation
- Deployment of Teams
- Command Organization

Hands-On RIC Drill

The scenarios are as follows:

1. Firefighter separated from crew
2. Two firefighters unable to exit a fire structure
3. Firefighter trapped by lightweight debris
4. A crew that exits a structure and determines one of the crewmembers is missing

Objectives:

- Overall scene size-up for Rescue Sector
- Basic RIC rescue techniques
- Maintain Accountability
- The company officer's responsibilities operating as a RIC
- The sector officers responsibilities operating as Rescue Sector
- Critical thinking and behaviors when assigned to Rescue Sector
- RIC transfill procedures
- Demonstrate transition from RIC deployed to committed mode
- Demonstrate proficiency in communications crews and command

Benchmarks - Command:

- Establish Rescue Sector(s)/Branch
- Build Companies within Rescue Sector
- Commit Rescue Sector after "MAY DAY" or "SUDDEN EVENT"
- Continue firefighting operations
- Request additional resources
- Consider heavy rescue resources
- Support Rescue effort

Benchmarks - RIC Sector/Branch:

- Create an action plan
- C.A.N. report to command when "ready"
- Assign crew and individual tasks
- Do RIC size-up and functions
- Develop search plan
- Develop rescue plan
- Transition from "deployed" to "committed"
- Commit entry team and prepare back up teams
- Locate, Secure, and Extricate lone firefighter
- Assess time vs. disentanglement effort
- Utilize relay rescue if necessary

CHAPTER XIII.

APPENDIX C

A. NIOSH Recommendations

B. NIOSH Respiratory Branch Recommendations

(NOTE: As of March 14, 2002, the recommendations from NIOSH have not been completed.)