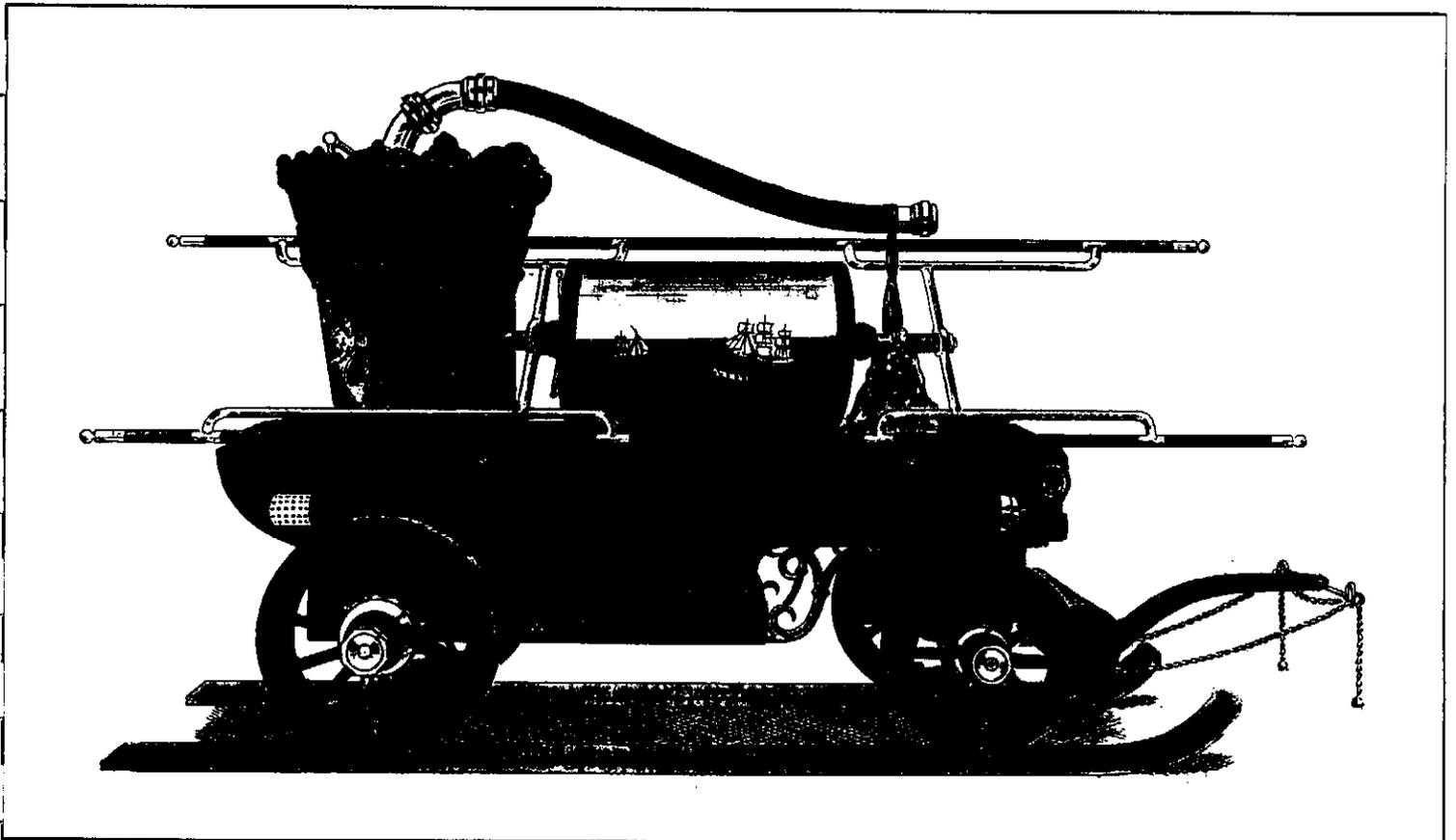


HELENA FIRE DEPARTMENT

1990 ANNUAL REPORT

AS SUBMITTED TO
THE HONORABLE MAYOR,
THE CITY COMMISSIONERS,
AND BILL VERWOLF, CITY MANAGER



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Commissioners
Russell J. Ritter, Mayor
Margaret A. Crennen
Tom Huddleston
Mike Murray
Blake J. Wordal



City-County
Administration Building
316 North Park
Helena, MT 59623

Phone: 406/442-9920

William J. Verwolf
City Manager

City of Helena

July 11, 1991

Mr. Bill Verwolf
City Manager
316 N. Park
Helena, MT 59623

Dear Mr. Verwolf,

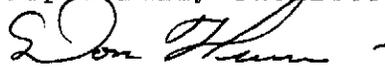
I am pleased to submit to you the Annual Report of the Fire and Rescue Department for the year 1990. This report exhibits the activities and efforts put forth by the Helena Fire Department.

During the past year, the Fire and Rescue Department responded to more than 1226 calls to provide fire suppression, emergency medical treatment or public service assistance.

In addition to the dedicated men who directly fight fire and care for medical emergencies, thank you to all of our professionals who prevent fire through building inspections, plans reviews, and public education efforts, as well as those who must strive daily to keep our personnel, apparatus, and equipment in top-notch condition.

We look forward to another year of increased demand for emergency service, and are actively planning to meet the challenges that lie ahead.

Respectfully submitted,


Chief Don Hurni
Helena Fire Department

Commissioners
Russell J. Ritter, Mayor
Margaret A. Crennen
Tom Huddleston
Mike Murray
Blake J. Wordal



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William J. Verwolf
City Manager

City of Helena

MAYOR
RUSS RITTER

COMMISSION
TOM HUDDLESTON
BLAKE WORDAL
MIKE MURRAY
MARGARET CRENNEN

CITY MANAGER
BILL VERWOLF

Commissioners

Russell J. Ritter, Mayor
Margaret Crennen
Tom Huddleston
Mike Murray
H. Kay McKenna



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City Manager

City of Helena

HELENA FIRE DEPARTMENT

FIRE CHIEF

Don Hurni

ASSISTANT FIRE CHIEF

Mike Foster

FIRE PREVENTION BUREAU

FM - Bob Knudson
DFM - Harry Crawford
INS. II - Fritz Zettel

ADMINISTRATIVE ASSISTANT

Bernie Martian

COMBAT

SHIFT #1

BATT. CHIEF----Dennis Sorrels
CAPT.-----Ted Simpson
LT. EMT-D-----Jim Skinner
ENG.-----Norb Roth
FF III-----Doug Duncan
FF III EMT-D--Warren Ziegler
FF III EMT-D--Pat Clinch
FF III EMT-D--Larry Ross
CFF EMT-D-----Randy McClain

SHIFT #2

BATT. CHIEF---Joe Cross
CAPT.-----Ron Morris
LT. EMT-D-----Jay Moore
ENG.-----Dale Klugman
FF III EMT-D-Ed Flies
FF III EMT-D-Steve Larson
FF III EMT-D-Bob Fearon
FF III EMT-D-Jim Mitchell
PFF-----Scott Bockman

SHIFT #3

BATT. CHIEF-----Bob Pare
CAPT.-----Bob Olson
LT.-----Mike Spotorno
ENG. EMT-D-----Jim Feucht
FF III-MECH.---Don Gage
FF III EMT-D---Joel King
FF III EMT-D---Roy Swanby
FF III EMT-D---Kevin Kelly
CFF EMT-----Brad Hampton

Helena Fire Department Staff
page 2

RETIRED: Rich Coe - Assistant Fire Chief

PROMOTED: Mike Foster - Assistant Fire Chief
Mike Spotorno - LT.
Jim Feucht - Engineer
Bob Fearon - FF III
Larry Ross - FF III
Jim Mitchell - FF III
Roy Swanby - FF III
Kevin Kelly - FF III
Brad Hampton - CFF
Randy McClain - CFF

NEW HIRE: Scott Bockman

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City Manager

City of Helena

FIRE APPARATUS

<u>APPARATUS #</u>	<u>STATION</u>	<u>TYPE OF APPARATUS</u>	<u>DESCRIPTION</u>	<u>YEAR</u>
Engine 1	1	1250 Pumper	Sutphen	1986
Engine 2	2	1250 Pumper	Hahn	1980
Engine 3	1	1250 pumper	Seagrave	1975
Truck 1	1	85' Tower	Sutphen	1976
Truck 2	2	75' Ladder	Pirsch	1946
Squad 1	1	Mini/Rescue	Ford	1986
Squad 2	2	Mini/Rescue	Chevrolet	1979
#127	1	Staff	Ford 2 dr.	1980
#128	1	Staff	Ford 4 dr.	1980
#129	1	Staff Pickup	Ford Pickup	1981
#130	1	Staff Pickup	Ford Pickup	1985
#131	1	Staff Van	Ford Van	1986

SOURCE OF ALARM

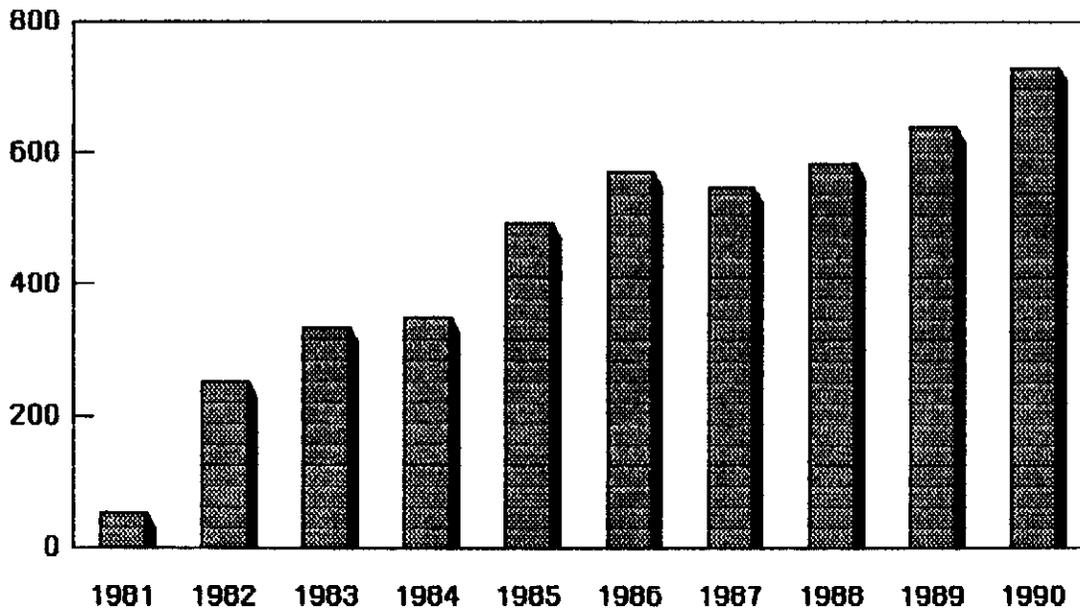
	<u>This Year</u>	<u>Last Year</u>
Fire Department telephone.....	14	10
Dispatch Center.....	1201	1049
Alarm Board.....	0	49
Radio.....	5	1
Direct report.....	<u>6</u>	<u>0</u>
Total.....	1226	1109

TYPE OF SITUATION FOUND

	<u>This Year</u>	<u>Last Year</u>
Fire, explosion, etc.....	205	109
Smoke scare.....	75	64
Rescue, crash emergency.....	732	638
Hazardous condition.....	46	34
Public service.....	4	21
Alarm - (no fire).....	17	128
False alarm (malicious).....	134	17
Electrical problem.....	5	15
Miscellaneous.....	<u>8</u>	<u>83</u>
Total.....	1226	1109

	<u>This Year</u>	<u>Last Year</u>
In City.....	1200	1085
Fire District.....	25	21
Contract.....	0	1
Mutual Aid.....	<u>1</u>	<u>2</u>
Total.....	1226	1109

EMS CALLS
1981-1990



HELENA FIRE DEPARTMENT

FIRE LOCATION

	<u>This Year</u>	<u>Last Year</u>
In building.....	63	44
Wildland.....	43	8
Rubbish near building.....	5	2
Rubbish in vacant lot.....	11	3
Trash can.....	12	0
Vehicles.....	38	22
Dumpsters.....	24	22
Miscellaneous.....	<u>6</u>	<u>8</u>
Total.....	202	109

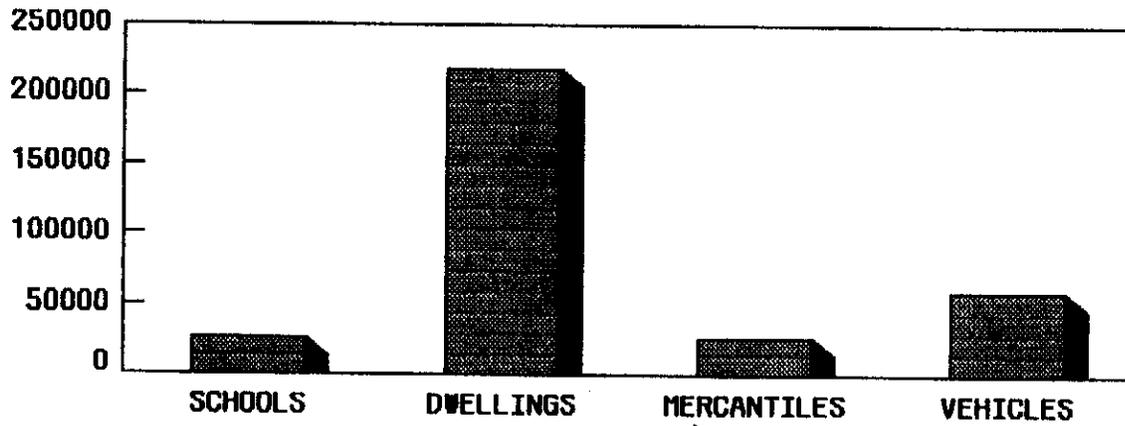
FIRE CONTROL METHOD

	<u>This Year</u>	<u>Last Year</u>
By Fire Department.....	148	84
By occupants.....	5	3
Sprinkler System.....	0	0
Fire out on arrival.....	43	19
Other.....	<u>6</u>	<u>0</u>
Total.....	202	106

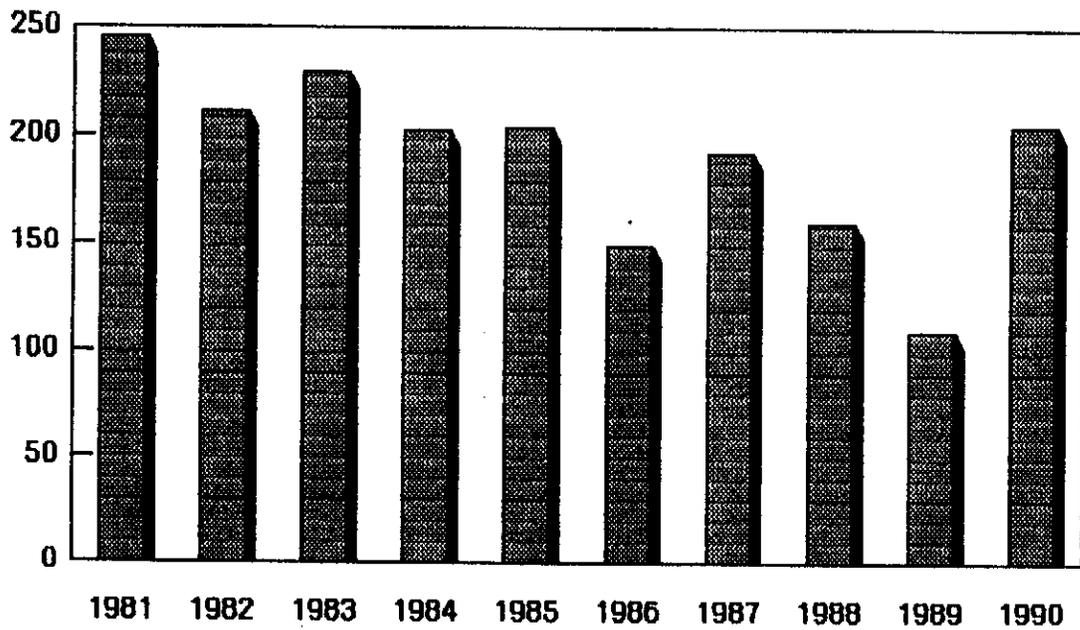
FIRE CAUSES (IN BUILDING)

	<u>This Year</u>	<u>Last Year</u>
Chimneys & wood burning appliances..	20	12
Combustibles near heaters.....	3	3
Careless use of open flame.....	15	3
Careless use of smoking material....	8	6
Children with matches.....	10	2
Defective electrical.....	27	8
Flammable liquids.....	5	1
Fireworks.....	5	0
Natural conditions.....	0	0
Incendiary.....	8	2
Suspicious.....	7	0
Unknown.....	58	6
Miscellaneous.....	<u>36</u>	<u>10</u>
Total.....	202	53

FIRE LOSS ANALYSIS 1990



FIRES AND EXPLOSIONS 1981-1990



HELENA FIRE DEPARTMENT

FIRE LOSS ANALYSIS

	<u>This Year</u>		<u>Last Year</u>	
	<u>Fires</u>	<u>Loss</u>	<u>Fires</u>	<u>Loss</u>
Public buildings.....	5	\$ 25,300	0	\$ -0-
Dwellings.....	55	\$218,075	40	\$97,975
Mercantile.....	4	\$ 26,600	1	\$ 300
Manufacturing.....	0	\$ -0-	0	\$ -0-
Miscellaneous.....	1	\$ 500	1	\$ 3,000
Outdoor (vehicles).....	63	\$ 58,845	44	\$45,770

TOTAL FIRE LOSS

	<u>This Year</u>	<u>Last Year</u>
Outdoor fires (vehicles & dumpsters)..	\$ 58,845	\$ 45,770
Building fires.....	<u>\$270,475</u>	<u>\$101,275</u>
Total Estimated Fire Loss.....	\$329,320	\$147,045

DEATH AND INJURY

	<u>This Year</u>	<u>Last Year</u>
Civilians injured.....	4	7
Firefighters injured.....	0	2
Total.....	4	9
Civilians killed.....	0	0
Firefighters killed.....	0	0
Total.....	0	0

Commissioners
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Blake J. Wordal



City-County
Administration Building
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Helena, MT 59623

Phone: 406/442-9920

William J. Verwolf
City Manager

City of Helena

TO: Don Hurni, Fire Chief
FROM: Bob Knudson, Fire Marshal
DATE: April 8, 1991
SUBJECT: Annual Report from the Fire Prevention Bureau
for the Year 1990

COMMENTARY:

Fire! Hundreds of thousands of times a year that shout reverberates down hallways or the inner recesses of the mind, as Americans come face to face with one of the most dreaded causes of death and disfigurement. For every American who will confront the flames or choking smoke this year, there are thousands who will not even give the threat of fire a second thought. Many of which, will only take the slightest precautions to guard against fire.

Fire prevention encompasses all the means used by fire departments to decrease the incidence of uncontrolled fire. Fire prevention employes three basic methods, these are: engineering, education and enforcement. Engineering, practices can provide built in safeguards to help prevent fires from starting and to limit the spread of fire and smoke should it occur. Education, can teach groups or individuals the dangers of fire and its effects, and of the appropriate actions one must take when faced with a fire situation. Enforcement, is nothing more than the legal means of correcting problems that pose a threat to life and property.

Although fire inspections are the major function of the Fire Prevention Bureau, the duties and responsibilities seem to be ever increasing. With this in mind, I respectfully submit the activities of the Bureau for the the year 1990.

During the year of 1990, the members of the Fire Prevention Bureau conducted some special projects along with every day routine of inspections and fire investigations. The following is a complete, but somewhat brief explanation of these special projects:

- * Information was gathered for the Chief on dissolving the Kenwood Fire District and creating the new Westside Fire Service Area.
- * The Fire Marshal worked with the other Fire Marshals from around the State and the Attorney Generals office, in regards to the adoption of the Uniform Fire Code and its adoption by local jurisdictions. This in turn could have placed a very financial burden on the City of Helena.
- * Many hours were spent in the Bureau researching the minimum staffing levels for the Fire Department and the Incident Command System.
- * We videotaped the sexual harassment and the back care classes for the Personnel Department.
- * Several meetings were held with Montana State University architectural students in a proposed remodel of the State Capitol Building.
- * The Bureau provided training and instruction on the use of self contained breathing apparatus to Van Waters and Rogers personnel, in order for them to meet the requirement of 29 C.F.R. 1910.
- * We participated in the Art Center's Federal Grant poster contest - fire safety.

During 1990, the Helena Fire Department administered its physical fitness ability test to 32 job applicants. Out of the 32 job applicants, 15 passed the test.

This concept was designed to simulate as closely as possible, the work that would be required during normal fire fighting operations at the fire scene.

The physical fitness ability test consists of seven different testing stations, and are performed in sequence in a time frame of six minutes or less for a passing score. Testing begins with subjects dressed in protective clothing, including breathing apparatus and helmet. Testing proceeds as follows:

- * Raise and lower a 35 foot extension ladder, hand over hand,
- * turn hydrant wrench eight revolutions while staying within white marked area. Eighty pounds torque,
- * drag a 200 foot 2 1/2 inch hose for 200 feet.

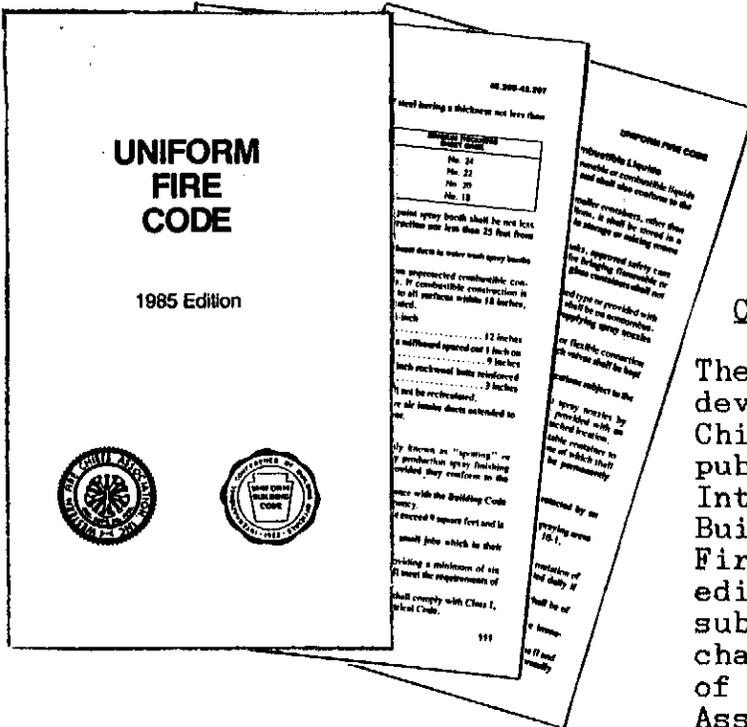
Rest circle #1 - There are two rest circles. Subjects are allowed a total of one minute to be divided between each rest circle. It is not mandatory to use the rest circles.

- * Using a six pound sledge hammer, you are required to strike the prop 50 times, hard enough to register on the counter,
- * subjects are required to lift a 16 foot ladder from a set of hooks, move the ladder 24 feet and replace on hooks,
- * subjects are required to crawl through a simulated attic 45 feet long.

Rest circle #2 - If one minute has been used on the first rest circle, you are not entitled to rest here.

- * Drag a 150 foot mannequin backwards for 50 feet to the finish line.

The current record for the fastest time in this test is held by Firefighter Larry Ross, with a time of three minutes and 51 seconds. **CONGRATULATIONS LARRY ROSS!!!!**



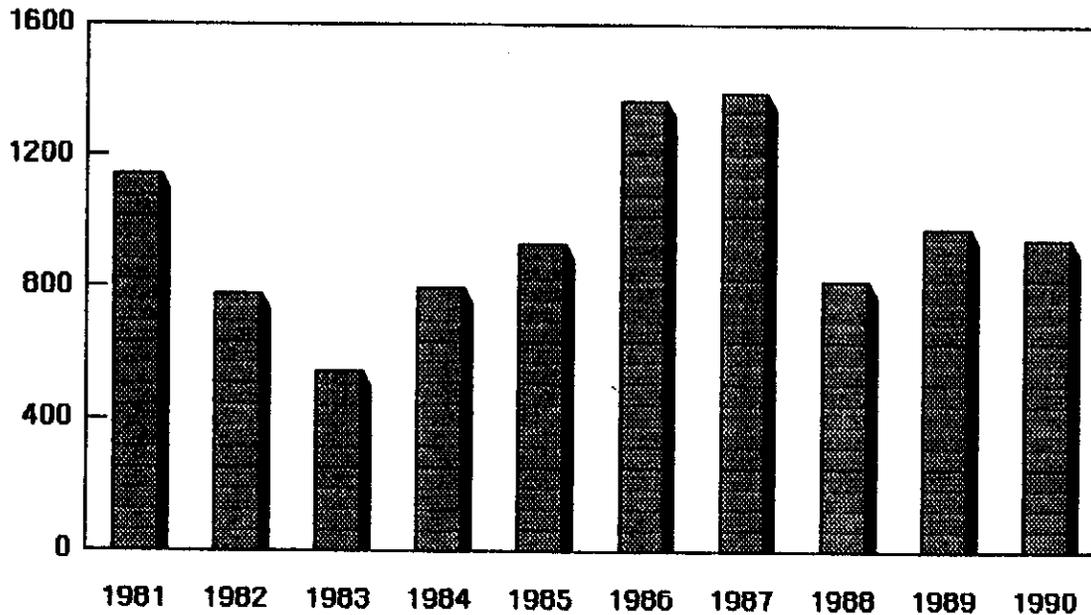
CODE ENFORCEMENT ACTIVITIES

The Uniform Fire Code was initially developed by the California Fire Chiefs Association and was first published in 1971 by the International Conference of Building Officials and the Western Fire Chiefs Association. A revised edition was published in 1973 and subsequent editions incorporate changes approved at annual meetings of the Western Fire Chiefs Association.

It is the intent of the International Conference of Building Officials and the Western Fire Chiefs Association to correlate the provisions of the Uniform Fire Code and the Uniform Building Code so that there is no conflict between them. Neither code is intended to stand alone; rather, the total package, i.e., the Uniform Fire Code, the Uniform Building Code, the Uniform Mechanical Code, the Uniform Plumbing Code and the National Electrical Code, give cities and counties a complete and comprehensive program of model codes that are compatible with each other.

Both the State of Montana, and the City of Helena adopt the Uniform Fire Code. The Fire Prevention Bureau is required to inspect, as often as may be necessary, all buildings and premises, including such other hazards or appliances as the chief may designate for the purpose of ascertaining and causing to be corrected any conditions which would reasonable tend to cause fire or contribute to its spread, or any violation of the purpose or provisions of the Fire Code and of any other law or standard affecting fire safety.

**INSPECTIONS
1981-1990**



HELENA FIRE DEPARTMENT

NOTICES, ORDERS AND CITATIONS:

Notices are issued for the correction of routine code violations, orders are issued for the correction of more hazardous violations, and to gain code compliance, after all other measures have failed, a citation is issued.

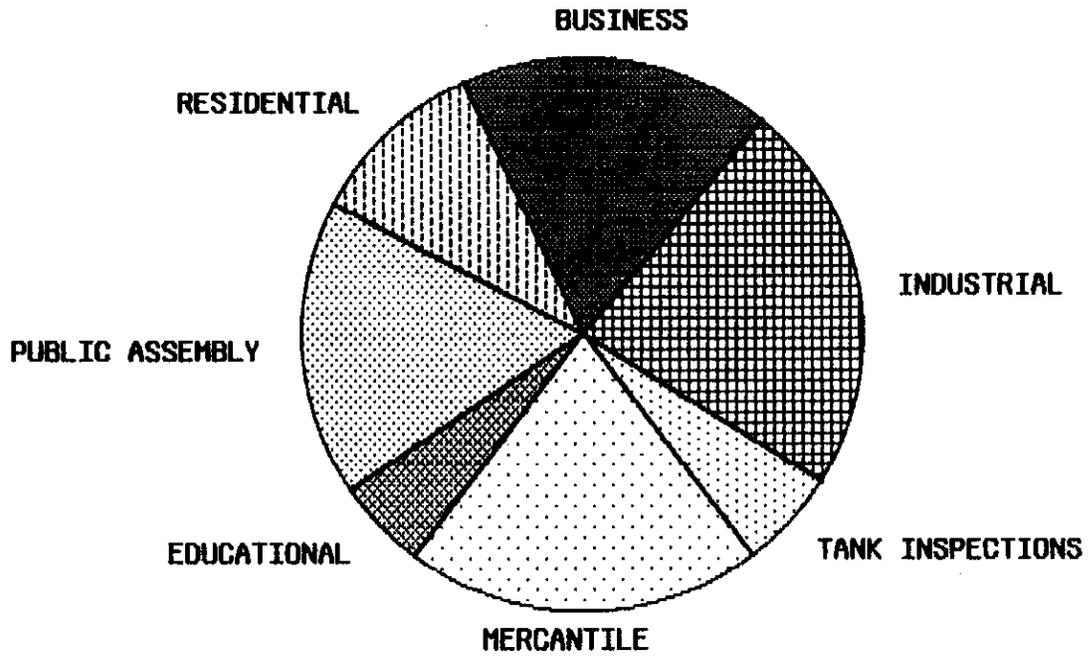
During 1990, the Bureau issued 407 notices, 29 orders, and 3 citations.

COMPLAINT INVESTIGATIONS:

The Fire Prevention Bureau conducts investigations of complaints received from local businesses and the citizens of Helena, concerning code violations, hazardous conditions, and public safety. During 1990 the Bureau received and investigated 59 complaints. Some of the complaints received concerned:

- Dumping of hazardous wastes in alleys
- Dangerous building complaints
- Open flame in Capital Hill Mall
- Lady splashed with gas at service station

OCCUPANCY INSPECTIONS





FIRE INVESTIGATIONS

As required by State law, the Fire Prevention Bureau is responsible for investigating all fires within its jurisdiction. The term "fire investigation", describes a broad range of activities dealing with post-fire data gathering and analysis to document fire ignition scenarios, fire development, material identification, human behavior, and important fire safety lessons learned.

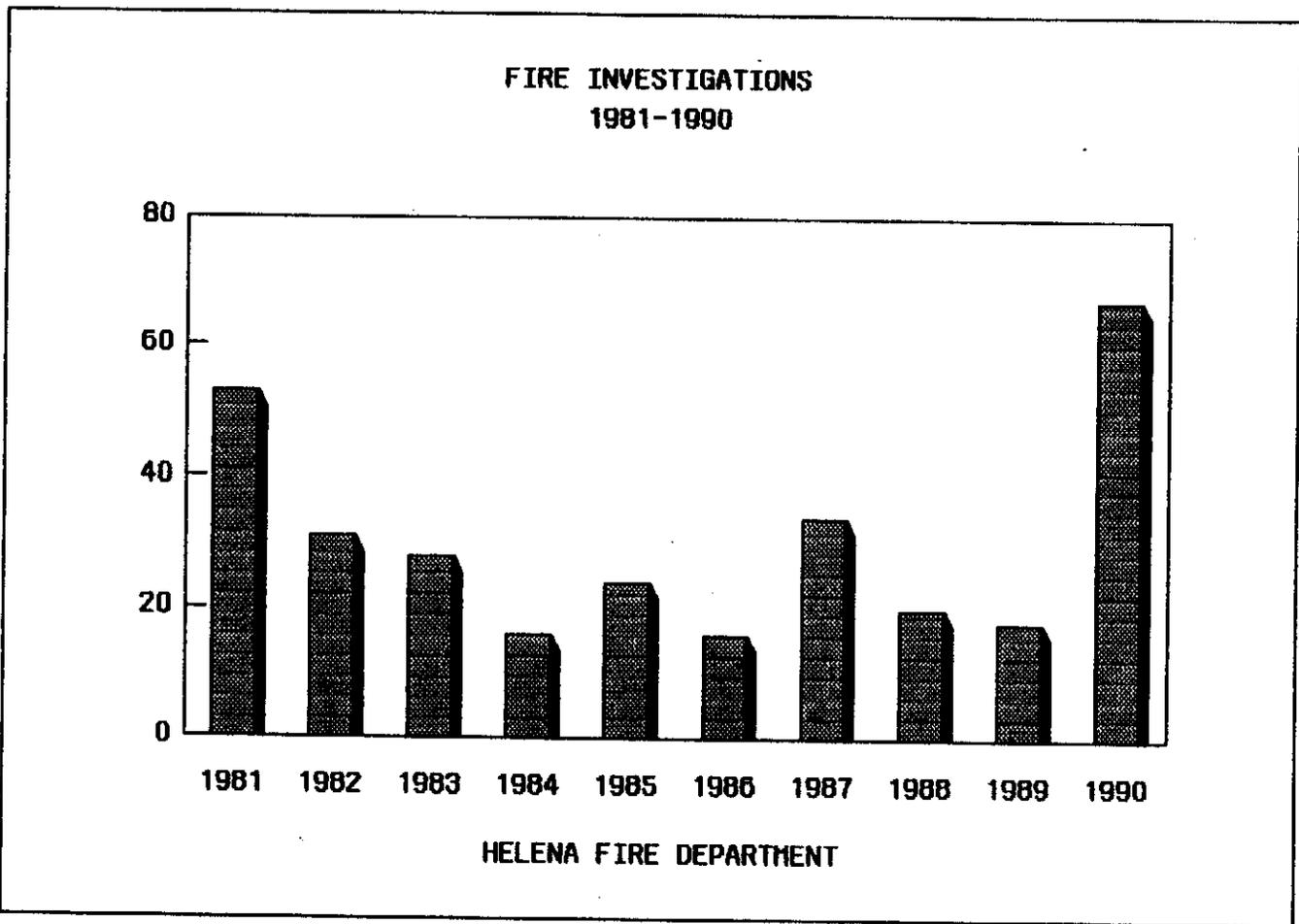
Investigations of this type are usually concerned with ignition scenario and area of origin determination, with particular emphasis on the investigation of incendiary and suspicious or fatal fires. Fire incidents are also investigated for loss analysis and prevention purposes. These investigations are usually conducted to determine what can be learned from a particular fire incident. Investigations conducted for loss analysis purposes focus on the reasons for fire spread, performance of fire protection features, and those factors contributing to life loss or property damage in addition to the fire cause and origin details.

At the present time all Fire Prevention Bureau personnel have completed the State Fire Marshal Bureau's basic and advanced arson investigation programs and are members of the International Association of Arson investigators.

Fire Investigations
page 2

In 1990, the Bureau investigated a total of 66 fires, 34 were determined accidental, and 32 incendiary.

TEN YEAR COMPARISON





HAZARDOUS MATERIALS

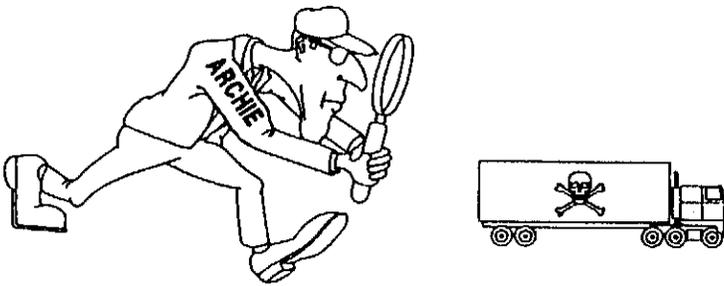
Hazardous materials are regulated under a number of provisions of the Uniform Fire Code. In addition to which the Fire Prevention Bureau participates in a number of programs in conjunction with the National Fire Protection Agency, the Montana Department of Health and Environmental Sciences, and the U.S. Environmental Protection Agency.

The Bureau conducts an on-going hazard assessment and risk analysis of all facilities involved in the transportation, storage, handling and use of hazardous materials within the city. This is done as part of the Bureau's uniform inspection procedure.

Archie

Archie (automated resource for Chemical Hazard Incident Evaluation) joined the Helena Fire Department in the spring of 1990. Archie is a sophisticated computer modeling program provided to the department by the U.S. Environmental Protection Agency, that when used in conjunction with the Handbook of Chemical Analysis procedures, enables the user to run anywhere from one to eleven different hazard assessment models. These include:

- 1) estimating the discharge rate of a liquid or gas
- 2) estimating the area of a liquid pool
- 3) estimating the vaporization rate of a liquid pool
- 4) evaluating the toxic vapor dispersion hazards of a product
- 5) evaluating pool fire radiation hazards
- 6) evaluating fireball radiation hazards
- 7) evaluating flame jet hazards
- 8) evaluating vapor cloud/plume fire hazards
- 9) evaluating vapor cloud explosion hazards



ARCHIE (automated resource for Chemical Hazard Incident Evaluation) joined the Helena Fire Department in the spring of 1990. ARCHIE is a sophisticated computer modeling program provided to the department by the U.S. Environmental Protection Agency, that when used in conjunction with the Handbook of Chemical Analysis Procedures, enables the user to run anywhere from one to eleven different hazard assessment models. These include:

1. estimating the discharge rate of a liquid or gas
2. estimating the area of a liquid pool
3. estimating the vaporization rate of a liquid pool
4. evaluating the toxic vapor dispersion hazards of a product
5. evaluating pool fire radiation hazards
6. evaluating fireball radiation hazards
7. evaluating flame jet hazards
8. evaluating vapor cloud/plume fire hazards
9. evaluating vapor cloud explosion hazards
10. evaluating tank over pressurization rupture hazards
11. evaluating solid/liquid explosion hazards

The formulas and equations used by ARCHIE are very sophisticated and constitute the program data base. ARCHIE does not contain a chemical data base.

$$C_f = \frac{C_c}{2} \left[\operatorname{erf} \left(\frac{x}{\sqrt{2}\sigma_x} \right) - \operatorname{erf} \left(\frac{x - U_w t}{\sqrt{2}\sigma_x} \right) \right] \quad \text{when } t \leq t_R \quad (\text{B.22})$$

$$C_f = \frac{C_c}{2} \left[\operatorname{erf} \left(\frac{x - U_w(t - t_R)}{\sqrt{2}\sigma_x} \right) - \operatorname{erf} \left(\frac{x - U_w t}{\sqrt{2}\sigma_x} \right) \right] \quad \text{when } t \geq t_R$$

where:

$$C_c = \frac{Q}{2\pi\sigma_y\sigma_z U_w} e^{-\frac{y^2}{2\sigma_y^2}} \quad (\text{B.23})$$

$$\times \left[\exp \left(-\frac{(z - H)^2}{2\sigma_z^2} \right) + \exp \left(-\frac{(z + H)^2}{2\sigma_z^2} \right) \right]$$

Unrepaired Leaks Can Be Costly

Size of Leak	Gallons Per Hour	Gallons Per Day	Gallons Per Month	Gallons Per Year
One/two drops per second	.05	1.2	36	438
Intermittent stream	0.9	21.6	648	7776
1/16 inch stream	3	72	2160	25920
1/8 inch stream	10.2	244.8	7344	88128
3/16 inch stream	14	336.9	10107	121284
1/4 inch stream	38.8	931.2	27936	335232

As this table indicates, there is no such thing as a small leak. Over a period of months or years, the cost of even the smallest product leak can be very expensive, both in terms of lost gasoline and damage to the surrounding groundwater tables. Note also that the top line on this table is the generally accepted standard as established by the National Fire Protection Association for underground tank tightness.

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UNDERGROUND STORAGE TANK PROGRAM

The United States Environmental Protection Agency (EPA) estimates that three to five million underground tanks in the United States contain petroleum or "hazardous substances". It has been estimated that thousands of these tanks are currently leaking, and many more are expected to leak within the next five years.

In addition to the fire and explosion potential, growing evidence indicates that such tanks are a major cause of groundwater contamination. Because half the population of the United States depends on groundwater as a source of drinking water, the underground storage tank problem has been recognized as one of national significance requiring federal legislation.

Congress responded to the problem by incorporating a new subtitle in the Hazardous and Solid Waste Amendments of 1984, which President Reagan signed on November 8, 1984. This subtitle I provides for the development and implementation of a comprehensive regulatory program for underground storage tanks.

The installation, operation and use of underground storage tanks, piping and related fuel handling equipment is regulated under the provisions of Articles 4 and 79 of the Uniform Fire Code, and as such the Fire Prevention Bureau has the primary responsibility for conducting inspections of underground storage tanks, piping and equipment to insure compliance with the Fire Code and other applicable regulations.

During Fire Prevention Week and throughout the year, the Helena Fire Department distributes a number of different fire safety materials, ranging from coloring and comic books to crossword puzzles. These materials designed to teach fire safety to the children of Helena serve a valuable purpose.

Each year throughout the nation many young children are burned and injured by the ignition of their clothing. Clothing fires cause more severe burns than burns on an unclothed area. Injury from clothing fires can be greatly reduced if a child will immediately stop, drop and roll.

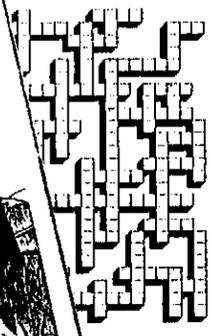
This action protects the face, neck and breathing passages. Heat and flame rise, so that when a child is standing up they go straight into the face, nose and mouth. This is aggravated if the child runs and fans the flame. When the child drops and becomes horizontal, the heat and flame still go up, but away from sensitive areas. Rolling smothers the fire to extinguish it.

Various other aspects of fire safety are also covered in these materials, such as preventing fires in and around the home, and what to do if a fire strikes.



FIRE FIGHTERS
Safety Handbook

Firesafety Crossword



- Across**
2. Reckless with matches
 4. If trapped in smoke, ...
 7. Used in break down to find about
 8. Used to get the water from deep to there
 9. A new kind of ...
 11. Can't run out of there under a tree
 12. Stop, Drop, and ...
 14. All fire ...
 16. A huge fire that destroys many buildings
 17. ... the fire department
 18. Write out of a public building
 21. Improperly stored ...
 22. If you have a fire ... you know how to use it?
 24. Used to support wood ceiling
 27. Short ...
 28. ...
 29. ...
 30. ...
 31. ...
 32. ...
 33. ...
 34. ...
 35. ...
 36. ...
 37. ...
 38. ...
 39. ...
 40. ...
 41. ...
 42. ...
 43. ...
 44. ...
 45. ...
 46. ...
 47. ...



PUBLIC SERVICE ANNOUNCEMENTS

Among the many measures that can be taken to reduce fire losses, perhaps none is more important than educating people about fire.

Americans must be made aware of the magnitude of fire's toll and its threat to them personally. They must know how to minimize the risk of fire in their daily surroundings. They must know how to cope with fire, quickly and effectively, once it has started.

The prevention of fires due to human carelessness is not all that fire safety education can hope to accomplish. Many fires caused by faulty equipment rather than carelessness could be prevented if people were trained to recognize hazards. And, many injuries and deaths could be prevented if people knew how to react to a fire, whatever its cause.

Each year through the use of Public Service Announcements, conducted with the cooperation and assistance of the local news media, the Fire Prevention Bureau strives to make the public aware of various fire hazards.

Some of the subjects covered by these PSA's include spring clean-up week, fireworks safety, fire prevention week, and holiday and Christmas safety.

During 1989, the Bureau conducted 9 Public Service Announcements.

PUBLIC EDUCATION

During the year of 1990, the Fire Prevention Bureau conducted both demonstrations and lectures to the general public upon request.

Demonstrations and Lectures....	60
Number of adults.....	515
Number of students.....	1359



COUNSELING JUVENILE FIRE SETTERS

Learning about fire is a part of every child's growth process. A passing interest in fire is quite normal from the ages of approximately 2 to 7 years. This interest is often exhibited when children light small fires or play with matches, lighters, or candles. Children are great imitators. They mimic the adults they see lighting cigarettes, candles, and fireplaces. To most children under seven there is little understanding of fire and its destructive consequences. To them fire has a magical quality. Small children can strike a match and start a small fire. They can then touch the lighted match to a small pile of papers and create a large, warm, bright fire, all through the magic of their match.

If the fire rapidly spreads beyond the initial pile of papers, the curious fire players will usually attempt to extinguish the fire or run for help. This fire play, however innocent, is dangerous and must be controlled. Each year the Fire Prevention Bureau receives requests from parents of children playing with fire for counseling. As part of the Bureau's public education program the Fire Marshal works with the parents and child involved to channel this curiosity about fire into protective and non-destructive areas. During 1990, the Fire Prevention Bureau counseled twelve (12) juvenile fire setters.

Commissioners
Russell J. Ritter, Mayor
Margaret A. Crennen
Tom Huddleston
Mike Murray
Blake J. Wordal



City-County
Administration Building
316 North Park
Helena, MT 59623

Phone: 406/442-9920

William J. Verwolf
City Manager

City of Helena

TO: Don Hurni, Fire Chief
FROM: Mike Foster, Asst. Chief
DATE: April 18, 1991
SUBJECT: Fire Department Training

During 1990 Fire Department personnel attended or participated in the following training:

<u>COURSE</u>	<u>LOCATION</u>	<u>HRS</u>	<u>STUDENTS</u>
IFSTA Essentials	Helena	30	3
High Rise Firefighting	Butte	8	7
Multiple Death & Disaster Response	Billings	20	3
Hazardous Materials Technician	Great Falls	32	1
Instructor M.F.S.T.S.	Helena	16	8
IFSTA Rescue	Helena	30	1
E.M.S. Course Coordinator	Missoula	16	1
E.M.S. Course Coordinator	Bozeman	16	4
Surviving Hazardous Materials Incident	Helena	30	11
Firefighter Safety & Survival	Mont. City	15	6
IFSTA Self Contained Breathing Apparatus	Helena	30	3
Fire Sprinkler Seminar	Helena	24	1
Educational Conference Emergency Service Personnel	Helena	18	1

Fire Department Training
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Critical Incident Stress Debriefing	Missoula	16	2
Adv. Trng. Critical Incident Stress & Post Trauma Syndrome	Portland, Oregon	16	2
Fire Ground Operations Program Manager	Fort Benton	19	3
IFSTA Pumping Apparatus	Helena	48	2
Surviving Stress Management	Kalispell	8	1
IFSTA Company Officer	Helena	18	1
Underground Storage Tanks	Helena	15	2
Hazardous Material Technician	Great Falls	32	1
Introduction Emerg. Management	Helena	32	1
IFSTA Inspection	Helena	60	1
Intro. Uniform Fire Code	Bozeman	23	1
E.M.T. Refresher Course	Helena	24	16
I.C.S./E.O.C.	Great Falls	16	1
Advanced Driver Education	Lewistown	10	1
Fire Service Instructional Methodology	Emmitsburg, Maryland	80	1

The above training is in addition to the normal day to day classroom and field training which all firefighters participate in. This includes such things as preplans, street and hydrant familiarization, fire streams, drafting, company inspections and self contained breathing apparatus practice to name a few. Also not included in this training are the hundreds of hours which our EMT's and First Responders spend maintaining and improving their skills and knowledge.

National Fire Academy



Federal Emergency Management Agency

The United States has one of the worst fire loss records in the industrialized free world. In 1971, the National Commission on Fire Prevention and Control was established to research the most significant fire safety problems and recommend ways to reduce fire loss.

After 2 years of intensive work, the Commission made recommendations to reduce fire's annual toll on the United States. In May 1973, the Commission's report, "America Burning," was submitted to the President.

Based on the Commission's recommendations, Congress enacted the Federal Fire Prevention and Control Act in 1974. Throughout Public Law 93-498, the importance of fire prevention and control education and training is stressed. This Act established the National Academy for Fire Prevention and Control (now the National Fire

Academy) as part of the National Fire Prevention and Control Administration (now the U.S. Fire Administration) within the Department of Commerce with the mission to reduce the Nation's fire losses through training and education.

In 1979, the National Fire Academy and the U.S. Fire Administration were moved to the newly created Federal Emergency Management Agency (FEMA). This agency was formed to provide a Federal focus for the many efforts to improve the Nation's ability to deal with fire and other man-made and natural emergencies.

Currently within FEMA, the responsibility for coordinating national training and education initiatives in the areas of fire and emergency management and response resides in the Office of Training; the National Fire Academy is one of the major programs administered by that office. Through the coordination of the Office of Training, the Academy works closely with the U.S. Fire Administration, other program offices in FEMA, and many other Federal, State, and local agencies in the planning, design, and implementation of its training curriculum.

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TO: Don Hurni, Fire Chief
FROM: Joel P. King, Medical Director
DATE: June 24, 1991
SUBJECT: 1990 Emergency Medical Services Annual Report

Providing emergency medical care to the city of Helena is increasingly becoming a major function of the Helena Fire Department. Requests to HFD for medical assistance have steadily increased since the Emergency Medical Services (EMS) program was started in 1980. In that year, HFD responded to 60 emergency medical requests. By 1989 the number was up to 638, and that increased by 14.7% to 732 runs in 1990.

Undoubtedly, some of this increase is due to improved access to emergency assistance via the user friendly 911 emergency network. It was July 1990 that saw the implementation of 911, and statistics bear out that increased aid requests should be expected whenever the 911 system is brought on line.

Along with the increased number of runs, the hours of training for the emergency medical technicians (EMTs) also has increased. In 1990, there were 17 certified EMTs responding to calls for the Helena Fire Department. Of these, 14 have advanced their skills to the EMT-D level. Of these, five are EMT-I certified. EMT-I's have the training to perform advanced airway skills and intravenous therapy. This training was received through the St. Peter's Ambulance Service (SPAS) at no cost to the city. The Helena Fire Department does not provide EMT-I skill services.

To maintain and upgrade skills, HFD members engaged in 1,520 hours of continuing education throughout 1990. Additionally, an estimated 200 hours of medical training was received through SPAS by HFD personnel who work as part time

ambulance employees. Continuing education is vital for maintaining quality field medical skills and is recognized as an integral part of the emergency medical program.

Another vital component of effective emergency medical services is the ability to quickly provide life saving measures to an emergency scene. Helena has two well located fire stations from which to dispatch fire personnel and equipment to medical calls within the city. The average response time was estimated for the 1990 service year by randomly reviewing 250 of 732 medical runs. This review resulted in an average response time (time from notification to arrival on the scene) of three minutes and eleven seconds. Responses within this relatively short time frame improve the victims chances of survival.

Studies in King County, Washington, in 1978 elucidated the value of rapid response. System factors, in other words the factors relating to the kind of emergency care available in a community, have a major influence on patient outcome. For example, an important system factor is the time between patient collapse and the onset of cardio-pulmonary resuscitation (CPR). It is well documented that if this interval is four minutes or less, the patient stands a good chance of successful resuscitation. Additionally, the time from patient collapse to definitive cardiac care, in the form of actual treatment that converts a heart in arrest to a heart with a self-sustaining rhythm, is also critically time sensitive.

This treatment, known as cardiac defibrillation, is considered the most important element in definitive cardiac care. It has been shown that if CPR can be started within four minutes and defibrillation within 8-10 minutes, then about two out of five patients can be successfully resuscitated and discharged alive from the hospital. From these statistics, it is apparent that we are concerned about tracking our response capability and delivery.

The emergency medical care delivery in our community is what is known as a tiered response system. Multi-agency cooperation contributes to optimum patient care. By dispatching police, fire and ambulance on a tiered response, several benefits are realized. The emergency scene is secured and the care givers safety is enhanced. Basic life support is initiated quickly, which increases patient survival. Advanced life support provided by SPAS provides quality patient care and transportation to the hospital emergency care center. Each department contributes assets to this field to facility care system.

As stated earlier, a major portion of our contribution is in the rapid response of personnel and life saving skills. With two centrally located stations, we are in a better position to provide aid to an emergency more quickly than if only SPAS was dispatched. To bring out this fact, I randomly chose and compared two months of HFD "on scene" times with SPAS "on scene" times. For March and December 1990, there was a total of 54 calls which could be compared. Of these, HFD was first on the scene for 44 calls. On six occasions, both departments arrived during the same minute. On four runs, SPAS was first on the scene. This clearly shows the value of HFD's response to medical emergencies in our community.

Emergency medical service has been and will continue to be a major function of the Helena Fire Department. There are substantial challenges to be met in the future of such a service. I am confident that, with a clear vision of our mission and with a desire to help others in their time of need, we will meet the challenges that lie ahead.

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TO: Don Hurni, Fire Chief
FROM: Don Gage, Mechanic
DATE: April 12, 1991
SUBJECT; 1990 Truck and Equipment Maintenance

Major work on apparatus and equipment is performed by the Fire Department mechanic, and most minor work and preventative maintenance is performed by shift members.

Following is a breakdown of costs of repair parts by vehicle:

Engine 1 (1986 Sutphen).....	\$ 402.53
Engine 2 (1980 Hahn).....	\$ 58.36
Engine 3 (1975 Seagrave).....	\$ 361.61
Truck 1 (1976 Sutphen).....	\$ 485.44
Truck 2 (1946 Pirsch).....	\$ 6.67
Squad 1 (1987 Ford).....	\$ 234.48
Squad 2 (1980 Chevrolet).....	\$ 132.65
#127 (1980 Sedan).....	\$ 100.81
#128 (1980 Ford Sedan).....	\$ 126.77
#129 (1980 Ford Pickup).....	\$ 24.68
#130 (1985 Ford Pickup).....	\$ 92.36
#133 (1987 Ford Van).....	\$ 187.52

-continued on next page

1990 Truck and Equipment Maintenance
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City Shop service charge.....	\$ 1,748.00
Total vehicle repair parts.....	\$ 2,214.00
Total equipment repairs.....	\$ 2,983.00
Total vehicle & equipment repair 1989...	\$ 6,945.00
Total man hours for mechanic.....	750 hrs
Total man hours shift personnel.....	3912 hrs

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HELENA FIRE DEPARTMENT

YEARLY FUEL REPORT

(January 1, 1990 to December 31, 1990)

<u>VEHICLE</u>	<u>FUEL TYPE</u>	<u>FUEL GAL</u>	<u>MILES YTD</u>	<u>MILES ODO</u>	<u>MPG</u>
#135 Engine #1.....	Diesel...	507.....	2276.....	12733....	4.4
#137 Engine #2.....	Diesel...	479.7....	2175.....	22086....	4.5
#132 Engine #3.....	Diesel...	39.1.....	74.....	15153....	1.8
#139 Squad #1.....	Gasoline.	487.7....	1910.5....	5930....	3.9
#131 Squad #2.....	Gasoline.	422.0....	1865.....	14755....	4.4
#134 Truck #1.....	Diesel...	328.6....	768.....	12943....	2.3
#138 Truck #2.....	Gasoline.	21.....	58.....	2169....	2.7
#127 Gray Ford.....	Non-lead.	166.....	2566.....	40727....	15.4
#128 Red Ford.....	Non-lead.	314.5....	3901.....	41797....	12.4
#129 Ford Pickup...	Non-lead.	438.....	4992.....	46026....	11.3
#130 Ford Pickup...	Non-lead.	278.8....	3499.....	30028....	12.5
#133 Ford Van.....	Non-lead.	307.....	4224.....	20682....	13.7
TOTAL GALLONS OF GASOLINE (NON-LEAD).....				1,504	
TOTAL GALLONS OF GASOLINE (REGULAR).....				931	
TOTAL GALLONS OF DIESEL.....				1,354	
TOTAL GALLONS OF FUEL.....				3,789	
TOTAL MILES (ALL VEHICLES).....				28,309	
AVERAGE MPG (ALL VEHICLES).....				7.4	
TOTAL ODO (ALL VEHICLES).....				265,029	

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HELENA FIRE DEPARTMENT OPERATIONAL PROCEDURE

IN-CITY ALARMS:

Small fires: Grass, brush, cars, dumpsters, garbage, etc.

Two (2) men - either squad or 1250 pumper
East of Montana - Eastside Station
West of Montana - Main Station

Small structure fire: (Initial attack)

East of Montana - Engine 2 and three (3) men
Engine 1 and two (2) men

West of Montana - Engine 1 and three (3) men
Engine 2 and two (2) men

Extra man - Truck 1

Large structure fire: (Initial attack)

East of Montana - Engine 1 and three (3) men
Engine 1 and two (2) men
Truck 1 and one (1) man

West of Montana - Engine 1 and two (2) men
Truck 1 and one (1) man
Engine 2 and three (3) men

MUTUAL AID:

East Helena: Engine 2 and two (2) men (call in two (2) men to standby)

West Valley: Engine 2 and two (2) men (call in two (2) men to standby)

Helena Fire Department Operational Procedure
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OPERATIONAL PROCEDURE:

Westside Fire
Service Area

Engine 1 and three (3) men (Squad 2
and Engine 2 move to Main Station
if working fire)

(Call in three (3) men to standby
if working fire)

V.A. Hospital:

Engine 1 and three (3) men (Squad 2
and Engine 2 move to Main Station
if working fire)

(Call in three (3) men to standby
if working fire)

Highway Shops:

Engine 1 and three (3) men (Squad 2
and Engine 2 move to Main Station
if working fire)

(Call in three (3) men to standby
if working fire)

Fairgrounds:

Engine 1 and three (3) men (Squad 2
and Engine 2 move to Main Station
if working fire)

(Call in three (3) men to standby
if working fire)

If additional help is needed call police desk and instruct
dispatcher how many men will be needed. If only one shift
is needed call in shift which was relieved.

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FIRE PROTECTION CONTRACTS

At the present time the City of Helena has several Fire Protection contracts with areas outside the city limits. These include the Veteran's Administration Hospital, the State Highway Shops, and the area west of the City which is Fire District #3. We cover these areas with one (1) pumper and three (3) men. The cost of the fire protection for these areas is computed by mill levy necessary for operating the Helena Fire Department. The cost for taxpayers in the fire district is computed on the same basis as the people who live in the city limits. The private protection contracts are re-negotiated each year after it is determined what the operational budget for the Helena Fire Department is.

Following is a breakdown of the money received by the City of Helena from these contracts:

VETERAN'S ADMINISTRATION HOSPITAL....	\$23,192.70
FAIRGROUNDS.....	\$ 2,972.35
HIGHWAY SHOPS.....	\$ 1,670.62
WESTSIDE FIRE SERVICE AREA.....	<u>\$56,694.00</u>
TOTAL.....	\$84,529.67

The Helena Fire Department also has two (2) Mutual Aid contracts. These contracts are with the West Helena Valley Volunteer Fire Department and the East Helena Volunteer Fire Department. These contracts state that in the event of a large fire, the Helena Fire Department would receive one (1) pumper and ten (10) men from each fire department for a total of two (2) pumpers and twenty (20) men. If either of the volunteer fire departments should need our help, we are obligated to send one (1) pumper and two (2) men.