SEVENTH

ANNUAL REPORT

IDAHO FIRE STATISTICS

JANUARY 1, 1988 - DECEMBER 31, 1988

OFFICE OF THE STATE FIRE MARSHAL

LEE R. BRIGHT
STATE FIRE MARSHAL

ANTHONY J. FAGIANO
DIRECTOR
DEPARTMENT OF INSURANCE

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1988 FIRE REPORT

PART I – ANNUAL REPORTS

The annual reports section is made up of reports from the Fire Marshal and employees of the fire marshal's office.

ANNUAL REPORT
LEE BRIGHT
IDAHO STATE FIRE MARSHAL

Let me begin this report by acknowledging the outstanding job Bill Wallis did as the first State Fire Marshal. Idaho was indeed fortunate to have had a person of Bill's ability to set this office up and get it moving in the right direction. Although Bill has left us, the basic goals and objectives of this office are still the same. That is the preservation of life and property from the hazards of fire and explosion.

Although much has been accomplished in the past seven years, much still remains to be done. One of the major hurdles we must overcome is the indifference which contributes substantially to the magnitude of the fire program in Idaho as well as the rest of the country. In an America that has only lately grown conscious of its ecological responsibilities, there is a need to develop an awareness of fire's role as one of the greatest wastes of our natural resources. Appallingly, the richest and most technologically advanced nation in the world leads all the major industrialized countries in per capita deaths and property loss from fire. While genuine economic problems often stand in the way of deeper investment in fire protection, lack of understanding of fire's threat helps to account for the low priority. Those who have survived a fire never forget its destructive potential, yet for most people fire appears a remote danger that justifies indifference.

Indifference to fire is a national problem, people are similarly careless about fire as a personal threat. There is an old saying in the fire protection field, to the effect that fires have three causes: men, women and children. It takes the careless or unwise action of a human being, in most cases, to begin a destructive fire. In their home environment, people live their daily lives amid flammable material close to potential sources of ignition. Though people are aroused to issues of safety in consumer products, fire safety is not one of their prime concerns. Often when fire strikes ignorance of what to do leads to panic behavior and aggravation of the hazards, rather than to successful escape.

Among the many measures that can be taken to reduce fire losses, perhaps none is more important than educating people about fire. They 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. Public education concerning fire has been cited as the single activity with the greatest potential for reducing losses.

Another major hurdle we must overcome is the inadequate training of our fire inspectors. A law is effective only to the extent that it is enforced, and so it is with a fire prevention or building codes. Vigilance is needed in the review of plans and inspection during construction. Once construction is finished compromises in fire safety may be hidden from view.

The effectiveness of codes is also compromised by lack of coordination among inspection programs. The building department generally has responsibility for enforcing building codes, the fire department for enforcing fire prevention codes. Because fire departments are responsible for fire safety throughout the life of a building, they ought to be consulted by building departments during the designing and construction phases. In many local jurisdictions, however, building departments act unilaterally implementing the building code

during these crucial stages without requesting the suggestions and advice of the fire prevention bureau. Since the two codes influence each other but require expertise specific to the enforcement of each, coordinating of efforts between the two departments is needed to provide optimum fire protection.

In closing, let me once again say we have come a long way but there is still much to be done. It will take effort by all of us to reach our goal of a fire safe environment in the state of Idaho.

DISTRICT I
ARSON/FRAUD INVESTIGATION
SAM WYLIE
DEPUTY STATE FIRE MARSHAL

During the past year the major portion of my time was devoted to public relations with the insurance industry and liaison with fire and law enforcement personnel.

The District I office has investigated a total of 20 fires since May 1988. Out of those 20 investigations, complaints have been filed charging insurance fraud on two subjects in a single fraud investigation. Two subjects have been arrested and charged with arson in a house fire. Action by the U.S. Government is pending on one subject of committing arson to a commercial structure.

Since May 1988 the van has responded to 15 fires, 4 of which were determined suspicious and were or are under investigation by local authorities. In December 1988 the van was utilized as a mobile command center by the Kootenai County Sheriff's Office in the homicide of an elderly female residing in a residence on the shore of Lake Coeur d'Alene.

In December 1988 I responded with the van to a remote area near Bonners Ferry, Idaho and assisted the Boundary County Sheriff's Office and Idaho Department of Law Enforcement in the recovery of two bodies burned beyond recognition from the lower level of the burned residence, apparently the result of a double homicide by a person or persons unknown. The fire apparently has been set to cover up the homicides and destroy evidence. Several firearms were also recovered from the debris. At this same location a large sophisticated marijuana growing operation was discovered inside a large barn on the property. The Boundary County Sheriff's Office is continuing this investigation.

The North Idaho Fire Investigation Unit is once again an active and viable investigative unit. They meet once a month for training in various areas of fire scene investigation. During the past year they have responded to several fire scenes.

I have received a number of inquiries on our new arson investigation program recently received from Dr. Spitzer. Several individuals have expressed an interest in going through the course.

Our presence in District I has had a major impact on arson caused fires along with a positive effect on local authorities to become involved in arson investigation within their respective jurisdictions.

DISTRICT I
FIRE PREVENTION
JIM MACKLIN
DEPUTY STATE FIRE MARSHAL

This year, as in past years, has been diverse and interesting. Another fire and life safety study has begun at the University of Idaho, concerning nonresidential buildings. The first study we conducted for residential buildings is now an on-going program. Hopefully this study will be a program in the coming year.

The fire service in District I continues to take an interest in their jurisdictional fire prevention activities. Requests for code interpretations remain about the same as in past years, however, there is an increase in calls to simply confirm their interpretations of the code. This tells me we have been going in the right direction.

I find that more of my time is being used as a resource not only by the fire service, but by architects, builders and local building officials who are concerned about the compatibility of the codes.

The major area of concern for the coming year is what our role is going to be in dealing with owners and installers of underground storage tanks and what seems to be an overwhelming desire of these people to install aboveground storage tanks instead of underground storage tanks.

To sum up the year, it's been good thanks to all the people in District I.

DISTRICT II
ARSON/FRAUD INVESTIGATION
DONALD D. DILLARD
CHIEF DEPUTY STATE FIRE MARSHAL

In District II, our largest accomplishment for 1988 was the initiation and completion of a new arson training program. This program was designed to be given to both law enforcement and fire personnel. It covers basic Origin and Cause to advanced investigation and courtroom procedures. It is broken down into 17 units designed to be given either as a complete program (approximately 60 hours) for those people just getting into arson investigation, or in selected individual units to update information for those people who already have a background in arson investigation.

District II investigated 30 fires including assisting in Ontario, Oregon. We handled 12 arson fires, 18 Origin and Cause and 1 suspected homicide and made 3 multiple arrests.

Training included attending the International Association of Arson Investigators Seminar in New York State; the Idaho Arson Investigators Association in Pocatello, Idaho; and the Reid Interview and Interrogation Seminar sponsored by the Boise Police Department.

DISTRICT II
FIRE PREVENTION
DON MCCOY
DEPUTY STATE FIRE MARSHAL

Having worked for the State Fire Marshal's Office for a short period of time at the writing of this report, my contact with the people in District II is somewhat limited but rewarding. There are several new and challenging things to look forward to in 1989. Two of these are:

1. Adoption of the 1988 Uniform Fire Code, which will necessitate an updated version of the fire inspector certification class and test.

2. The development and presentation of an underground storage tank removal class. This class will be directed toward safety procedures as well as the new EPA rules.

One problem I can see is the difficulty of finding and visiting with all of the volunteer fire departments in my district. In the next year I hope to be able to compile a list of meeting and/or training nights for each department in District II. I feel this would enable me to meet and know more of the people and possibly provide more of a service to them. I feel this is very important as many of the future chiefs and other officers come from within the ranks, some not knowing that we are available to help them. I have had several departments ask how much we "charge" to make a visit. There is no charge for our services.

Another area of concern is the lack of understanding between the building and fire officials. We all must work together as the buildings we are building today will (should) still be available for use by our children.

I am looking forward to meeting everyone in District II and providing assistance to anyone who wants it. We cannot help if we don't know who needs help.

DISTRICT III
ARSON/FRAUD INVESTIGATIONS
DON BAILEY
DEPUTY STATE FIRE MARSHAL

Efforts have continued to encourage law enforcement and fire service agencies to support the arson task force concept, as well as provide investigative and training support in regard to suspicious fire investigation.

Investigation activities involved assisting city, county, state and federal fire and law enforcement agencies with 27 fire scene investigations in 16 of the 19 eastern counties of Idaho. Seven of the fire scenes investigated were determined to have been incendiary fires. The investigations resulted in 2 arrests for first degree arson, both of which are pending adjudication. Seven of the other 20 fires were of suspicious nature and the remainder of the fires were determined to have been accidental.

Arson task force activities involved law enforcement and fire departments in Minidoka and Cassia Counties. Bonneville County (Idaho Falls) and Bingham County (Blackfoot) continue to be actively involved. Jefferson County law and fire agencies are in the process of forming an arson task force. Fremont County has expressed an interest in the task force concept. Fire arson van activities involved utilization of the van on 11 fires scene investigations.

Training activities:

1 - Origin and Cause class, Bonneville County (Idaho Falls) - 15 students

2 - Fire/arson van orientation classes - 60 students

1 - Photography and video techniques class - 22 students

Other activities include an orientation program to the insurance claims representatives, investigators and attorneys on the arson task force concept and the arson van.

My objectives for next year are:

- to continue to promote the concept of forming arson investigation task force teams;
- to assist local, state and federal agencies with the investigation of suspicious fires;
- to continue to promote and provide arson detection training to fire departments and law enforcement agencies with an emphasis on team efforts and training utilizing special equipment carried on the arson investigation

DISTRICT III
FIRE PREVENTION
HAL CALL
DEPUTY STATE FIRE MARSHAL

This past year has been a busy one with many activities taking place. I have presented five Underground Storage Tank classes, five Arson Detection classes and three Uniform Fire Code classes. I have participated in three gasoline leak problems that resulted in water contamination and clean up. Two court appearances were made where I testified on Uniform Fire Code violations and also gave two television interviews on fire safety.

UST - This area has seen a lot of activity regarding storage tanks. Many have been removed, probably due to liability fears. Most have been done without a permit being taken out or the local fire chief notified. I have inspected 15 new installations with some of these still under construction. We are experiencing much better installation techniques than years past.

Uniform Fire Code - In this district I am experiencing a lot of requests for code violation inspections, in particular school buildings. There are many inferior school buildings in District III, mostly in the rural areas. Total U.F.C. inspections for the year were 31. I have attended the following training sessions which were very informative with valuable information received:

Uniform Fire Code
Uniform Building Code
Fire and Arson Detection
State Advisory Board Meeting
Western Fire Chiefs Conference

The major problem areas in this district centered around the continuing lack of proper fire and building code enforcement. Many cities and fire districts have only limited funds to operate on and the result is not much is spent on fire prevention. The other area of major concern is with leaking underground storage tanks and the resulting ground water contamination.

Our role in the coming months should be to support and help the fire officials as their needs arise. A public fire safety program statewide would go a long way in helping local officials be more effective in reducing loss of life and property.

PREVENTION/ARSON ACTIVITY REPORT
SUMMARY FOR 1988

PREVENTION

Fire Inspections	117
Fire/Arson Investigations	92
Fire Code Interpretations	318
Business Meetings	149
Assistance	132
Official Contacts	185
Public Appearances (Presentations)	16
Training Courses	53
Schools/Seminars Attended	16
Underground Storage Tank Inspections	58

ARSON/FRAUD

Total Criminal Cases Investigated	80
Arson	25
Fire	42
Other	13
Cases cleared	68
Cases pending	18

INCIDENT REPORTING SYSTEM
KYM WATSON
PROGRAM COORDINATOR

As 1988 has been a challenging year and a real learning experience, I want to thank all of you for your help and support through this period.

We've seen an increase this year as more fire departments are getting involved in the Fire Incident Reporting System. We have over half of our fire departments reporting (this includes most of the larger fire districts).

We have already started putting into effect a different program for the computerized fire departments. It is a program designed and provided by the National Fire Information Council. I would like to see as many of the fire departments that have access to a computer to get involved in the computerized reporting system. There are many advantages to getting involved with the computerized system. Some of these are: (1) access to your information immediately, (2) the system is set up to check for correct codes, so errors can be caught right away giving us more accurate data, (3) the computerized program is set up to run many different kinds of reports which allows each department to run the reports with information that will be helpful to them.

I have really enjoyed meeting some of you from the different fire departments. I plan on getting out and meeting more of you this summer. For those of you who are not reporting and would like more information or need more training, please give me a call and I will be happy to help you any way I can.

LICENSING, CERTIFICATION, AND INSURANCE LOSSES
RUBY ANDRIDGE
OFFICE COORDINATOR

Certified Fire Inspectors - The office of the State Fire Marshal, to ensure that fire inspections are being done by qualified fire inspectors who have met the minimum standards, administers a certification program. As of December 1988 there were 381 certified fire inspectors.

Fire Protection Sprinkler Contractors - In order to safeguard lives and property, we regulate the fire sprinkler contractor by licensing qualified persons/organizations and require insurance and bonding. This regulation became effective December 31, 1986. There were 27 sprinkler contractors licensed to do business in the state of Idaho in 1988.

Design Requirements - Sprinkler plans reviewer received and approved 142 sets of plans submitted during this period.

Fire Protection Sprinkler Fitters - Licensing became effective December 31, 1986. There were 32 renewal and two original applications received this period.

Fire Losses - Reported from insurance companies, there were 1,014 claims filed for fire losses in the State during 1988 with losses totaling $24,010,325.

Newburyport, Massachusetts, May 19, 1934. The start of conflagration that eventually destroyed 29 buildings and damaged nine others. Contributing factors: Wooden construction, wood shingle roofs, inoperative sprinklers, a high wind. Loss: $400,000. This picture was taken just fifteen minutes after the fire's start.

1988 FIRE REPORT

PART II – FIRE STATISTICS

This report is a statistical analysis of fires occurring in Idaho. Without the help of the reporting fire departments, this report would be impossible.

IDAHO FIRE INCIDENT SUMMARY

Situation Found Category		Incidents	
Building Fires	1,822		
Vehicle Fires	645		
All Other Fires	2,225		
Total Fires		4,692	(4,393 Hostile Fires)
Overpressure Ruptures		29	
Rescue Calls		155	
Hazardous Conditions		927	
Service Calls		455	
Good Intent Calls		1,463	
False/Malicious Calls		1,385	
All Other Calls		21	
Total Incidents Reported	**	9,127	
Times Mutual Aid Given		496	
Times Mutual Aid Recvd		287	
Total Fire Dollar Loss	$	18,933,787	
Fires Reporting NO Loss		2,634	
Civilian Fire Injuries		49	
Civilian Fire Deaths		11	
Fire Service Injuries		43	
Fire Service Deaths		1	

SUMMARIZATION OF FIRES, DEATHS AND INJURIES PLUS THE ESTIMATED DOLLAR LOSS PER PERSON BY COUNTY

	Total Fires	Total Injuries	Total Deaths	Dollar Loss	Popu-lation	Dollar Per Person
Ada	1172	-20-	-0-	2,335,303	191,543	12.19
Adams	No Depts.	Reporting		-0-	3,436	-0-
Bannock	221	-4-	-2-	583,531	68,866	8.47
Bear Lake	44	-1-	-0-	75,670	6,832	11.08
Benewah	43	-2-	-0-	54,650	8,611	6.35
Bingham	No Depts.	Reporting		-0-	38,710	-0-
Blaine	86	-1-	-1-	286,840	12,908	22.22
Boise	No Depts.	Reporting		-0-	3,097	-0-
Bonner	149	-7-	-0-	1,065,675	25,998	40.99
Bonneville	151	-3-	-3-	440,495	70,605	6.24
Boundary	No Depts.	Reporting		-0-	7,734	-0-
Butte	No Depts.	Reporting		-0-	3,373	-0-
Camas	No Depts.	Reporting		-0-	750	-0-
Canyon	579	-17-	-0-	7,396,315	89,198	82.92
Caribou	15	-0-	-0-	35,200	8,479	4.15
Cassia	125	-2-	-0-	819,275	20,738	39.51
Clark	No Depts.	Reporting		-0-	764	- 0-
Clearwater	44	-0-	-0-	67,130	10,015	6.70
Custer	18	-0-	-0-	54,215	5,186	10.45
Elmore	118	-0-	-0-	327,205	22,194	14.74
Franklin	59	-0-	-0-	179,326	9,548	18.78
Fremont	-0-	-0-	-0-	-0-	10,778	-0-
Gem	No Depts.	Reporting		-0-	11,811	-0-
Gooding	48	-1-	-0-	310,950	12,326	25.23
Idaho	19	-0-	-0-	31,550	14,375	2.19
Jerome	152	-0-	-0-	300,090	15,557	19.29
Jefferson	4	-0-	-0-	1,167	16,351	.07
Kootenai	510	-15-	-0-	1,749,472	67,157	26.05
Latah	85	-0-	-2-	77,520	30,496	2.54
Lemhi	No Depts.	Reporting		-0-	7,525	-0-
Lewis	No Depts.	Reporting		-0-	3,810	-0-
Lincoln	10	-0-	-0-	32,700	3,431	9.53
Madison	136	-1-	-0-	1,312,835	21,786	60.26
Minidoka	168	-0-	-0-	240,710	21,246	11.33
Nez Perce	12	-0-	-0-	14,950	33,399	.45
Oneida	No Depts.	Reporting		-0-	3,497	-0-
Owyhee	No Depts.	Reporting		-0-	8,551	-0-
Payette	135	-1-	-0-	246,274	16,136	15.26
Power	No Dept.	Reporting		-0-	6,955	-0-
Shoshone	113	-9-	-0-	110,430	16,787	6.58
Teton	54	-5-	-0-	544,865	3,130	174.08
Twin Falls	72	-2-	-0-	93,783	56,056	1.67
Valley	22	-0-	-4-	47,236	6,725	7.02
Washington	29	-1-	-0-	42,475	8,304	5.12

HOSTILE FIRES BY COMPLEX

	FIRES	INJURY	DEATHS	LOSS
Public Recreation Complex	12	0	0	$ 5,980
Club Complex	7	1	0	40,050
Educational Complex	43	0	0	44,310
Medical Care Complex	21	0	0	2,940
Prison Complex	2	0	0	100
Business w/Resid. Complex	16	1	0	958,600
Dwelling (one/two family)	1,670	52	7	5,840,710
Apartment	80	2	0	186,563
Hotel	16	0	0	6,610
Mobile Home Park	16	0	1	62,350
Shopping Complex	97	3	0	295,768
Office Complex	16	0	0	71,070
Power Production	6	0	0	500
Farm	492	13	1	1,901,196
Indian Reservation	2	0	0	-0-
Industrial Plant/Manufact.	95	2	0	5,420,600
Warehouse/Storage	44	2	0	2,253,435
Construction	8	0	0	1,520
Campsite	10	0	0	501
Waterfront	12	4	0	28,800
Railroad Transport	29	0	0	134,200
Road	416	2	3	345,115
Airport	8	0	0	1,140
No Complex	1,213	10	0	1,039,390
Not elsewhere classified	50	0	0	292,339
Complex Unknown/not reported	12	0	0	-0-
TOTAL ALL FIRES/BY COMPLEX	4,393	92	12	$18,933,787

HOSTILE FIRES BY AREA OF ORIGIN

	FIRES	INJURY	DEATHS
Hallway/Corridor/Mall	8	0	0
Exterior/Interior Stairway	5	0	0
Lobby/Entrance Way	3	0	0
Large Open Room/Assembly Area	3	0	0
Small Assembly Area/Lounge Area	135	19	0
Sales/Showroom/Library Area	9	1	0
Swimming Pool	2	0	0
Sleeping Rooms	89	3	3
Dining/Lunchroom/Cafeteria	5	0	0
Kitchen/Cooking Area	176	4	1
Lavatory/Locker Room/Cloakroom	24	1	0
Laundry Room, Area	36	2	0
Office	6	0	0
First Aid/Treatment Room	1	1	0
Lab/Printing/Photographic Area	2	0	0
Electronic/Projection Rooms	5	0	0
Process/Manufacture/Function Area	16	0	0
Product Storage Areas	49	2	0
Closet/Supply Storage Area/Vault	88	2	0
Shipping/ Receiving/Loading Area	2	0	0
Trash or Rubbish Area/Container	155	0	0
Garage/Carport/Vehicle Storage	76	4	0
Elevator/Utility Shaft/Escalator	7	0	0
Duct	9	0	0
Chimney	554	6	4
Conveyor/Machinery Room	19	0	0
Heating Equip/Water Heater Area	37	3	0
Inciner./Switchgear Area/Transform	20	0	0
Maintenance Shop/Service/Equip.	25	4	0
Crawl Space/Substructure Space	37	1	0
Ext.Balcony/Open Porch/Patio/Terr.	28	0	0
Ceiling/Floor/Roof Assembly	73	4	0
Wall Assembly	37	4	0
Exterior Wall/Roof Surface	111	3	0
Passenger Area of Transport Equip	63	0	0
Trunk/Load Carrying Area	29	1	0
Engine Area/Running Gear/Wheel	444	4	0
Fuel Tank/Fuel Line Area	20	4	0
Operating/Control Area	9	0	0
Exterior Exposed Surface	23	0	0
On or Near Railroad Right of Way	34	0	0
Highway/Public Way/Street	181	0	1
Lawn/Field/Open Area	1,451	10	1
Wildland Area/Woods	53	2	0
Multiple Location/Use Area	9	1	0
ORIGIN UNK/Not Reported	131	3	2
ORIGIN N/Applicable/classified	94	3	0
TOTAL ALL FIRES-AREA OF ORIGIN	4,393	92	12

HOSTILE FIRES BY IGNITION FACTOR

	FIRES	INJURY	DEATH
Incendiary/Not during Civil Disturb.	85	0	2
Suspicious/Not during Civil Disturb.	192	3	0
Abandoned discarded material	210	1	1
Thawing	12	0	0
Falling Asleep	3	0	0
Inadequate Control of Open Fire	580	6	1
Cutting/Welding too Close	52	0	0
Children with/Child Playing	235	3	0
Unconscious/Mental/Phys. Impairment	3	0	0
Misuse of Heat/ Not Classified	40	0	0
Fuel Spilled/Released Accidentally	24	1	0
Improper Fueling Technique	6	3	0
Flamm. Liquid used to Kindle Fire	10	0	0
Washing Part/Cleaning/Painting	4	0	0
Improper Container	12	1	0
Combustible to Close to Heat	77	4	0
Improper Storage	23	1	0
Children with/Child Playing	102	1	0
Misuse of Material/Not Classified	33	0	0
Part Failure/Leak/Break	148	10	0
Automatic Control Failure	9	0	0
Manual Control Failure	2	0	0
Short Circuit/Ground Fault	240	8	0
Other Electrical Failure	104	4	0
Lack of Maintenance/Worn Out	650	1	4
Backfire	147	2	0
Mechanical Failure/Not Classified	28	2	0
Design Deficiency	12	0	0
Construction Deficiency	11	1	0
Installed to Close to Combust.	46	7	0
Other Installation Deficiency	10	1	0
Property too Close To	99	4	1
Design/Const/Install./Not Classified	7	0	0
Collision/Overturn/Knockdown	17	0	1
Accidentally Turned On	24	1	0
Unattended	77	1	0
Overloaded	9	0	0
Spontaneous Heating	43	0	0
Improper Startup/Shutdown Proced.	11	1	0
Operational Deficiency/Not Classified	23	0	0
High Wind	38	0	0
Lighting	16	0	0
Natural Condition/Not Classified	6	0	0
Animal	3	0	0
Rekindled from a Previous Fire	117	1	0
Other Fires Not Classified by Code	186	9	0
Cause Unknown or Not Reported	607	15	2
TOTAL OF ALL FIRE CAUSE	4,393	92	12

HOSTILE FIRES BY FORM OF IGNITION HEAT

	FIRES	INJURY	DEATH
Fueled-Fire/Power Equip.-Insuffic.	9	0	0
Spark/Ember/Flame/Gas-Fueled Equip.	20	1	0
Heat from Gas Fueled Equipment	74	6	0
Spark/Ember/Flame/Liquid Fuel Equip.	35	5	0
Heat from Liquid Fueled Equip.	62	0	0
Spark Flame-Solid Fueled Equip.	20	0	0
Heat from Solid Fueled Equip.	640	11	4
Spark/Flame from Equip. Fuel- Unk	6	0	0
Heat from Fuel Power/Fired Equip.-Unk	21	0	0
Electricl - Insuff. Info/Not Classed	44	2	1
Water caused Short Circuit Arc	7	0	0
Short Circuit Arc/Mechanical	30	1	0
Short Circuit Arc/Worn Insulation	53	1	0
Unspecified Short Circuit Arc	182	6	0
Arc from Faulty Contact/Loose Conn.	33	4	0
Arc/Spark from Operating Equip.	24	0	0
Heat from Overloaded Equip.	40	0	0
Fluorescent Light Ballast	8	0	0
Heat from Smoking Material Unk/Insuff.	12	0	0
Heat/Open Flame/Spark-Insuffic/Unk.	91	0	0
Cigarette/Cigar	109	2	0
Welding/Cutting Torch Operation	55	1	0
Torch Operation/Not Cutting/Welding	17	0	0
Candle/Taper	13	1	0
Match/Lighter	344	3	0
Open Fire or Flame	686	6	2
Backfire from Engine	135	2	0
Heat from Hot Object-Insuffic./Unk.	77	0	0
Heat Spark from Friction	38	3	0
Molten/Hot Material/Hot Ember/Ash	129	2	0
Electric Lamp	21	0	0
Rekindle/Reignition	87	0	0
Properly Operating Elect. Equip.	124	4	0
Improperly Operating Elect. Equip.	29	1	0
Explosive/Model Rocket/Not amateur	7	0	0
Fireworks	147	2	0
Incendiary Device	4	0	0
Sun's Heat/Natural Source	3	0	0
Spontaneous Ignition/Chemical Reaction	59	2	0
Lighting/Static Discharge	16	0	0
Direct Flame	34	1	0
Radiated Heat	11	1	0
Flying Brand/Ember/Spark	14	0	0
Conducted Heat	2	0	0
Multiple Forms of Ignition	2	0	2
Form of Heat - Not Classified	51	5	3
Heat Form Unknown/Not Reported	768	19	0
TOTAL ALL FIRES - FORM OF HEAT	4,393	92	12

LOSSES ON ALL HOSTILE FIRES WITH SOME INCENDIARY/SUSPICIOUS IGNITION FACTOR

Unknown	$2,837,260
Incendiary	227,674
Suspicious	2,689,739

COMMENTS: A new statistic this year. Take a look at the unknowns. Over 2 3/4 million in losses with unknown ignition factors. What conclusion should we draw from this? Another interesting figure is the suspicious losses. How many of these, with good investigative work, could we give a cause to or classify as incendiary?

Estimates of Losses in US Incendiary and Suspicious Structure Fires in 1987

	Number of Fires		Number of Civilian Deaths		Direct Property Loss[1]	
Type of Fire	Estimate	Percent Change From 1986	Estimate	Percent Change From 1986	Estimate	Percent Change From 1986
Structure fires of incendiary origin	65,500	−7.8%*	465	−7.9%	$1,109,000,000	−4.6%*
Structure fires of suspicious origin	39,500	−1.3	265	+32.5	$ 481,000,000	−6.6
TOTAL:	105,000	−5.4	730	+ 3.6%	$1,590,000,000	−5.2%*

These estimates are based on data reported to the NFPA by fire departments that responded to the 1987 National Fire Experience Survey.

[1] This includes overall direct property loss to contents, structures, vehicles, machinery, vegetation, and anything else involved in a fire. It does not include indirect losses. No adjustment was made for inflation in the year-to-year comparison.

*The change was statistically significant at the .05 level.

1988 FIRE CASUALTIES

FIREFIGHTER CASUALTIES

SEX: Male	43
Female	1

CASE SEVERITY	
Minor	22
Moderate	17
Severe	4
Life Threat	0
D.O.A.	1
Died Before Arrival	0

PATIENT TAKEN TO	
Hospital	25
Doctor's Office	5
Long Term Care	0
Morgue	0
Funeral Home	0
Residence	1
Not Transported	12
Other	1

ASSIGNMENT	
Fire Suppression	40
Emergency Medical	1
Fire Prevention	1
Training	0
Maintenance	0
Fire Alarm	0
Administrative	0
Other	2

SEVERITY OF INJURY	
Injury	43
Death	1

CIVILIAN FIRE CASUALTIES

SEX: Male	35
Female	25

PART OF BODY INJURED	
Head/Neck	3
Body, Trunk, Back	1
Arm	3
Leg	2
Hand	7
Internal	1
Multi Parts	16
Other	8

NATURE OF INJURY	
Burns & Smoke	9
Burns Only	19
Smoke Only	15
Wound, Bleeding	4
Disloc/Fracture	0
Pain	0
Shock	1
Other	12

ACTIVITY AT INJURY	
Escaping	4
Rescue	5
Fire Control	21
Respons/Return	0
Clean/Salvage	1
Sleeping	10
Unable to Act	1
Other	18

SEVERITY OF INJURY	
Injury	49
Death	11

COMMENTS: This year's report reflects two deaths reported to us by the Utah Burn Center. Details unknown. Also, the tragic death of a firefighter due to a vehicle accident while at the fire scene.

FIREFIGHTER CASUALTIES

PART OF BODY INJURED	Number of Injuries	H/W	C/W	T/W	F/P	G/W	B/W	B/A
Eye	5	4	5	3	0	4	4	0
Face	2	1	2	1	0	2	2	0
Neck	3	3	3	3	2	3	3	3
Shoulder	2	2	2	2	1	2	2	1
Back-Lower	1	1	1	1	1	1	1	1
Trunk(Not class)	1	0	0	0	0	0	0	0
Elbow	1	1	1	1	0	1	1	0
Wrist	1	1	1	1	0	0	1	1
Fingers-Thumb	3	3	3	3	2	1	3	1
Hip	1	1	1	1	0	1	1	0
Leg-upper	1	1	0	1	0	1	1	0
Leg-lower	2	1	2	2	1	2	2	0
Knee	4	4	4	4	2	4	4	2
Ankle	1	1	1	1	1	1	1	0
Foot	3	2	2	2	1	2	2	0
Lungs	2	4	4	4	2	4	4	1
Spine	2	2	2	2	1	2	2	2
Multiple Lower Body	1	1	1	1	1	1	1	1
Multiple All-Body	3	3	3	3	1	3	3	1
All Other	2	0	0	0	0	0	0	0

H/W = Helmet Worn C/W = Coat Worn T/W = Trousers Worn
F/P = Face Protection Worn G/W = Gloves Worn
B/W = Boots Worn B/A = Breathing Apparatus Worn

Note: The numbers above reflect the number of times protective gear was worn when an injury occurred to a certain part of the body.

COMMENTS: Unlike last years report, where lung injuries were up, this years report shows no real concentration of injuries. Howerver, one area that bears watching is eye injuries. Five reported eye injuries, none showing Full Face Protection worn.

TYPE OF ACTION TAKEN BY FIREFIGHTERS UPON ARRIVAL

AT THE EMERGENCY SCENE

Extinguishment	3,786
Rescue Only	83
Investigation Only	3,822
Remove Hazard	437
Standby	634
Salvage	35
Fill In, Move Up	7
Other Type of Action	323
TOTAL	9,127

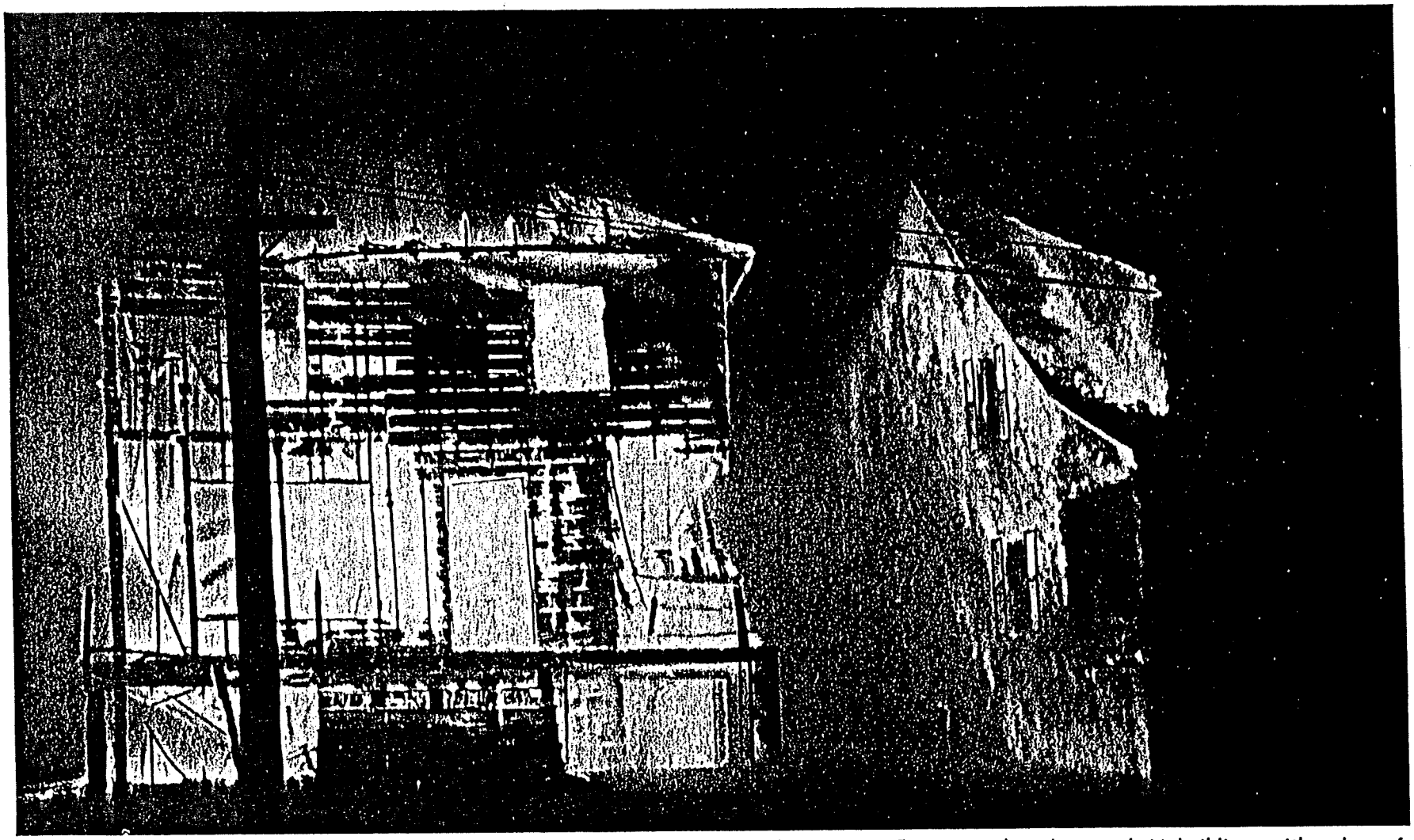
MUTUAL AID RECEIVED

Extinguishment	192
Rescue	2
Investigation Only	59
Remove Hazard	9
Standby	13
Salvage	0
Fill in, Move Up	0
Other Type of Action	12
TOTAL	287

MUTUAL AID GIVEN

Extinguishment	230
Rescue Only	3
Investigation Only	104
Remove Hazard	11
Standby	103
Salvage	3
Fill In, Move Up	7
Other Type of Action	35
TOTAL	496

COMMENTS: This report shows that while Fire Departments extinguish fires, they also perform other functions such as rescue, investigation and removal of hazards. Another interesting figure indicated here is that while the total number of fires are down from last year the mutual aid figures are up.

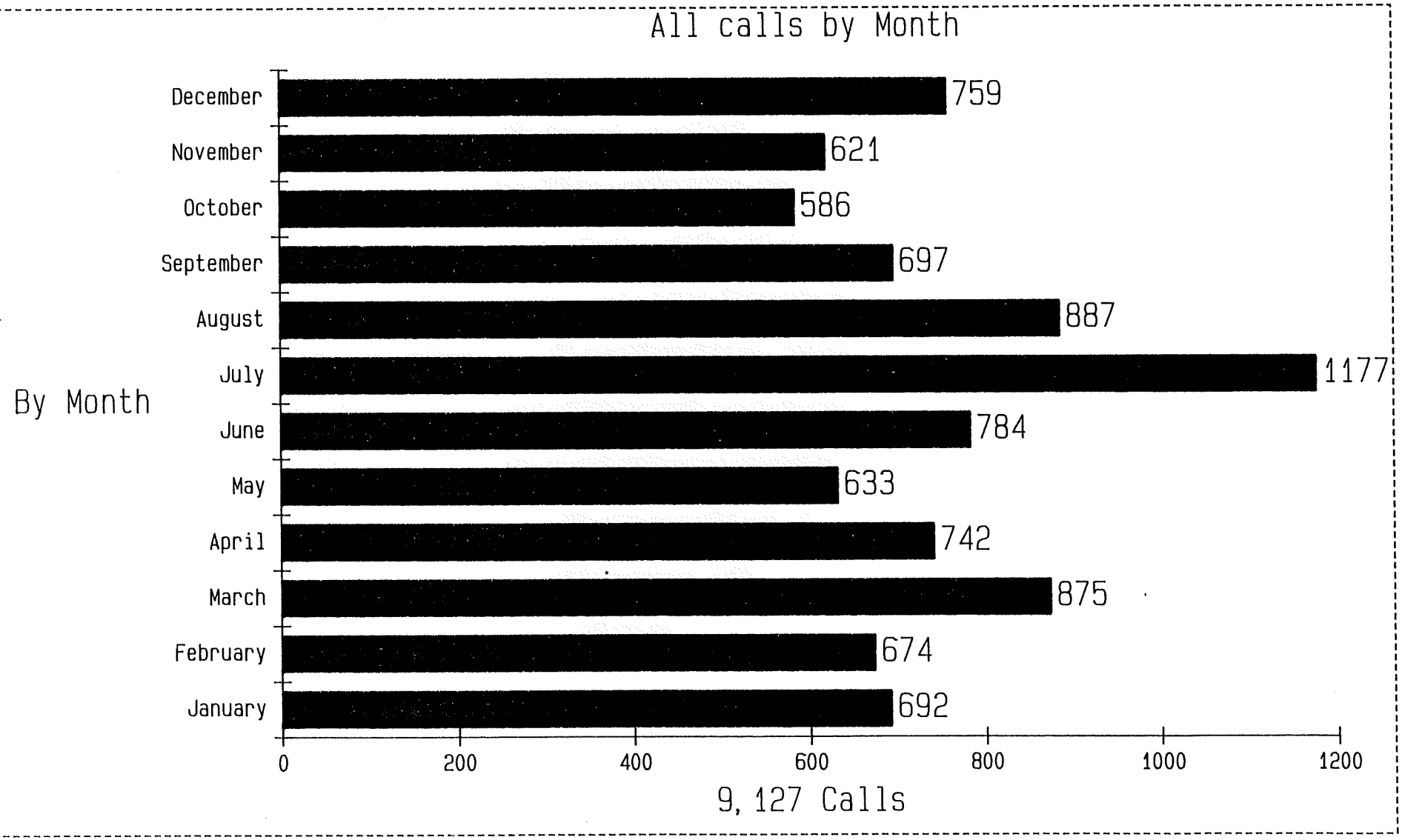


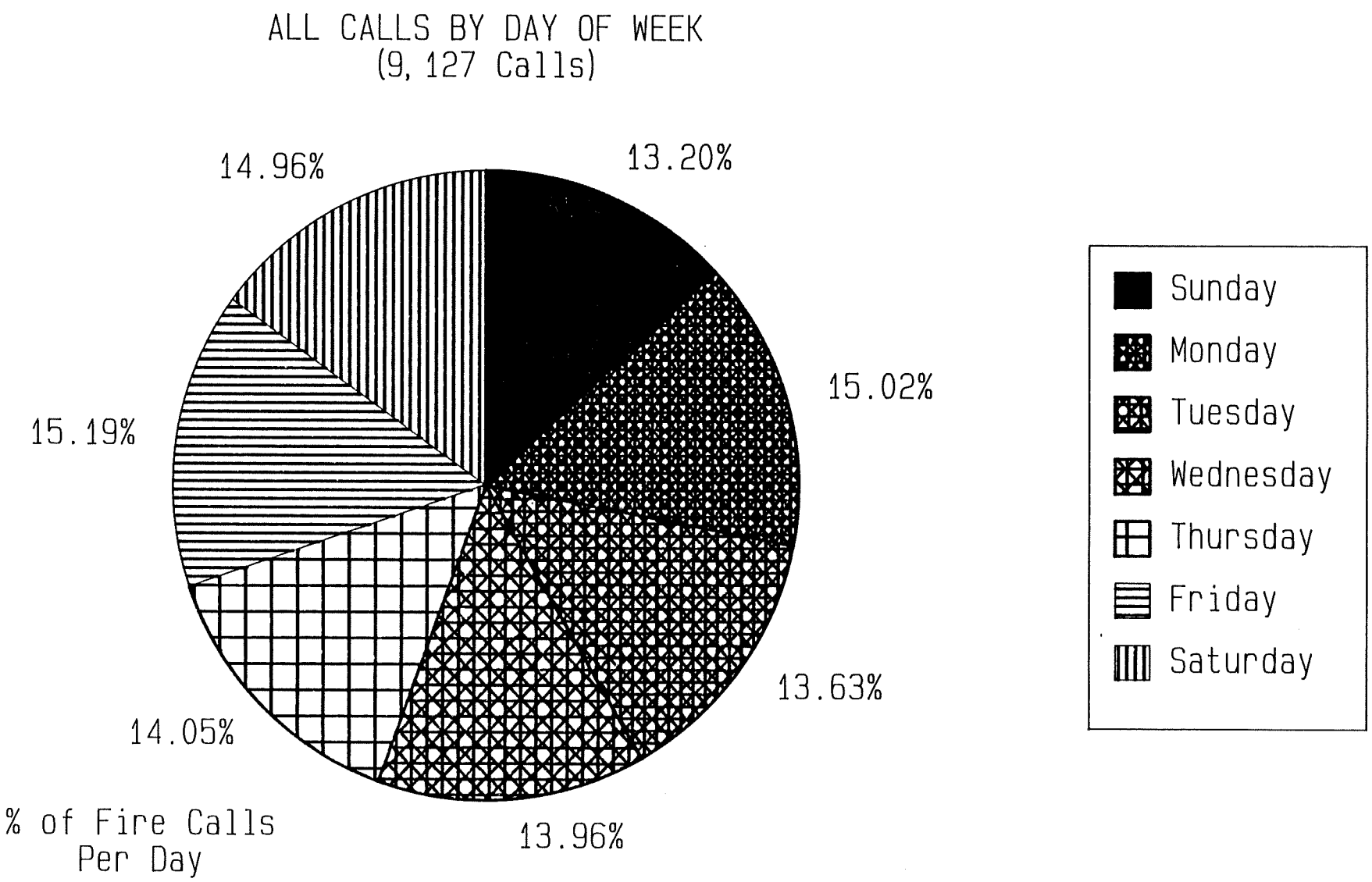
Hull, Massachusetts, March 28, 1923. This picture, taken during the beach resort conflagration that destroyed 44 buildings with a loss of $250,000, illustrates ignition against the wind by radiated heat with no direct contact wih flame.

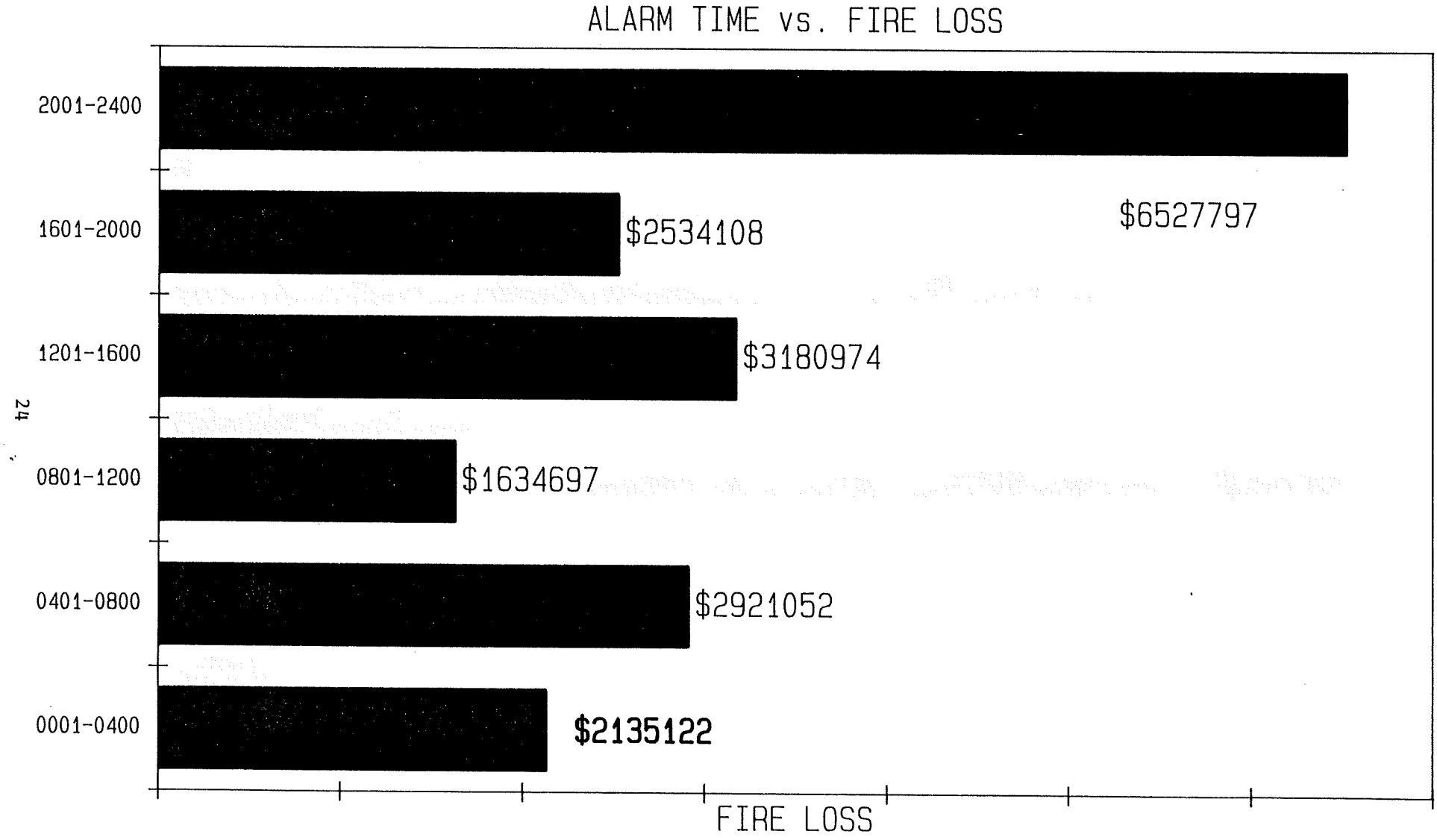
1988 FIRE REPORT

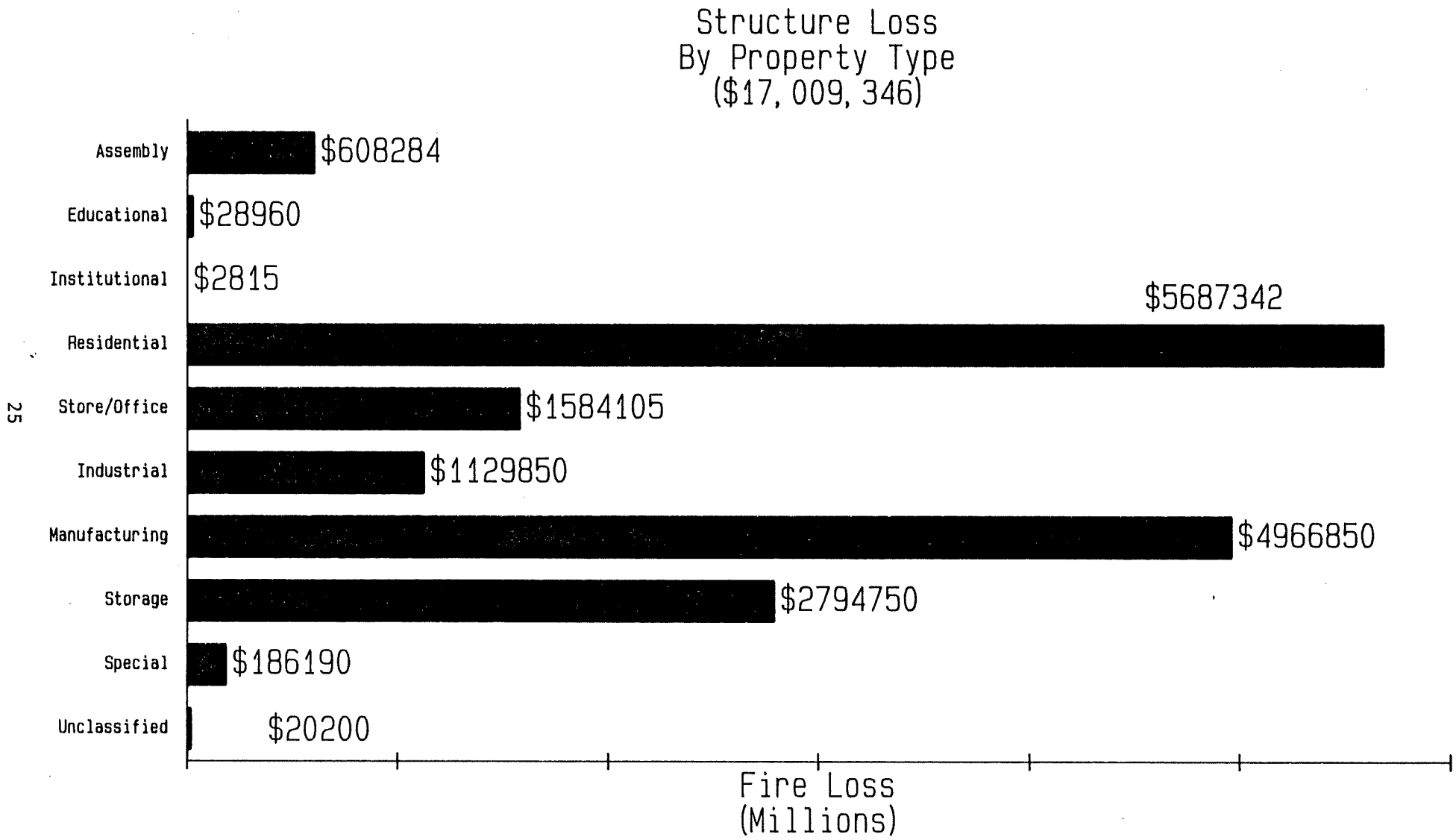
PART III – GRAPHIC ANALYSIS OF FIRE STATISTICS

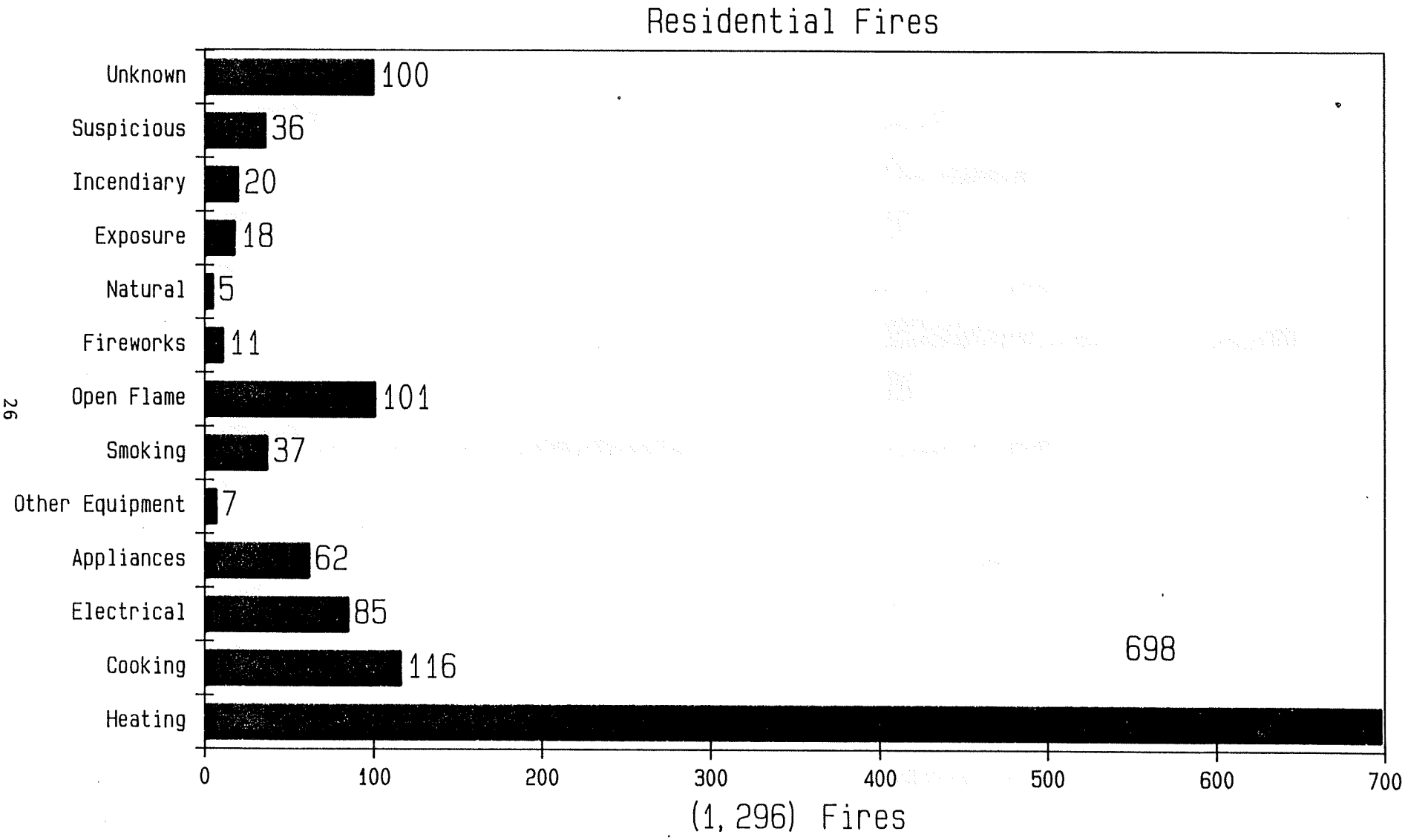
By Month

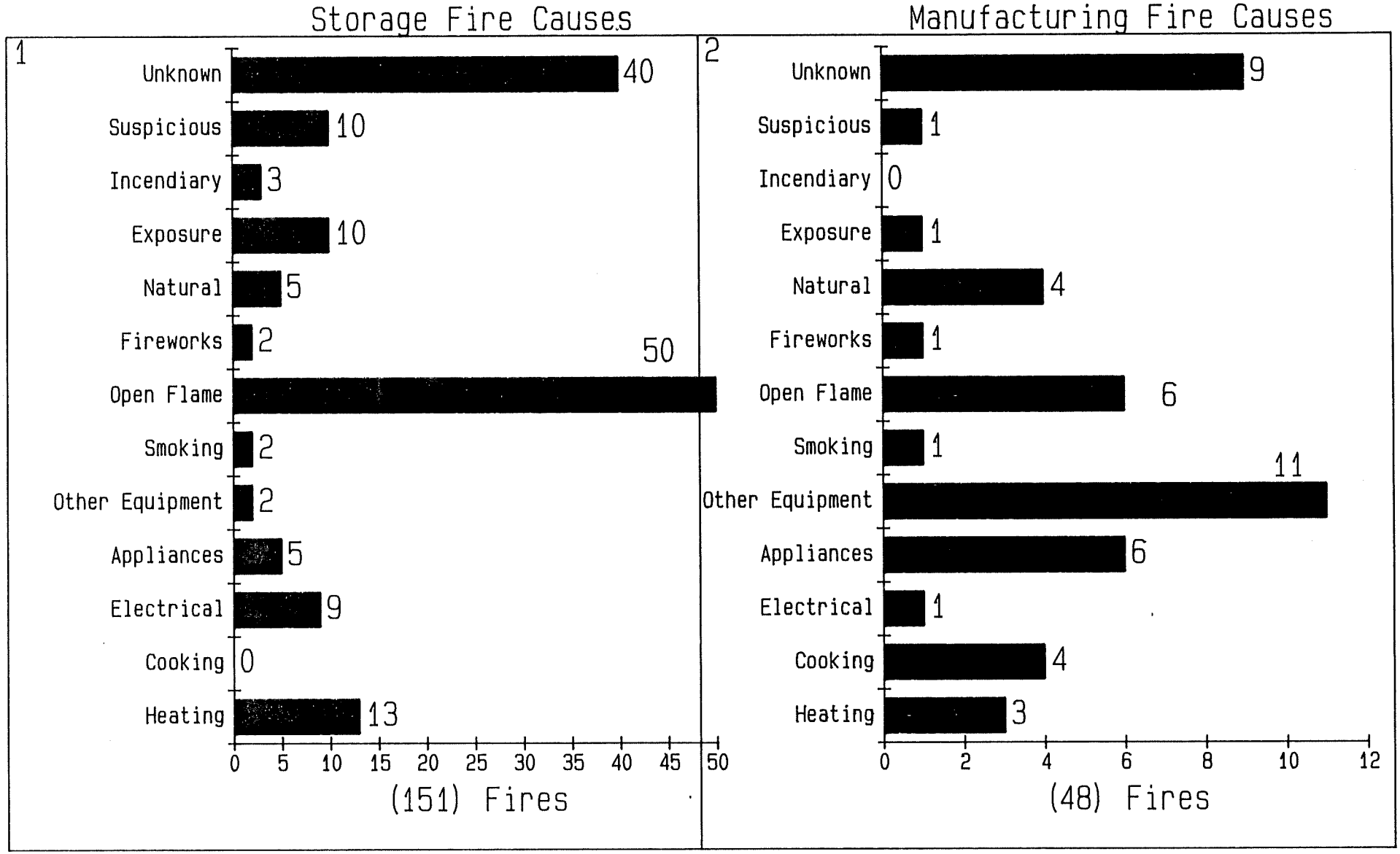

All calls by Month
December
November
October
September
August
July
June
May
April
March
February
January
759
621
586
697
887
1177
784
633
742
875
674
692
0
200
400
600
800
1000
1200
9,127 Calls

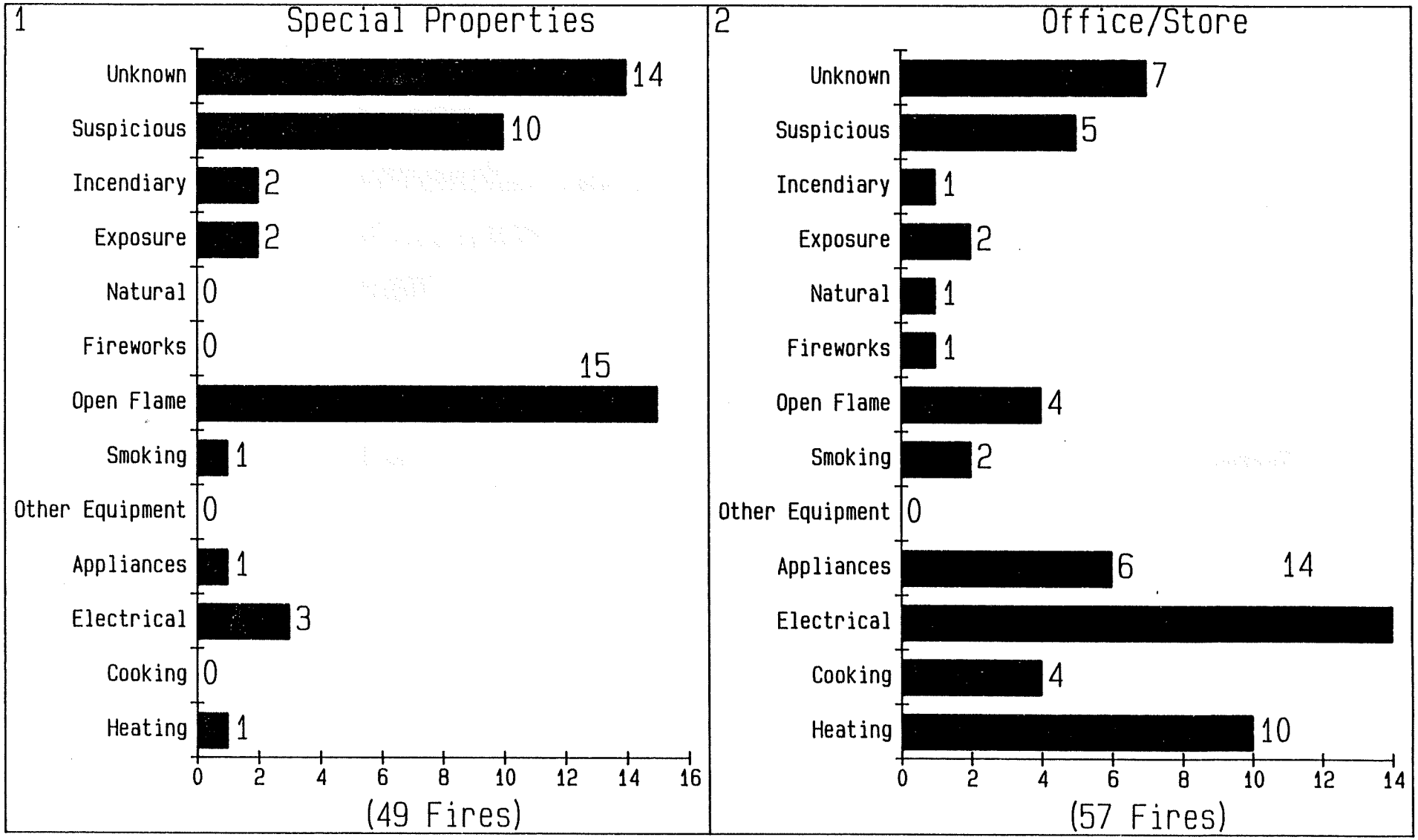

ALL CALLS BY DAY OF WEEK
(9,127 Calls)
14.96%
13.20%
15.02%
15.19%
13.63%
14.05%
13.96%
% of Fire Calls
Per Day
Sunday
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday

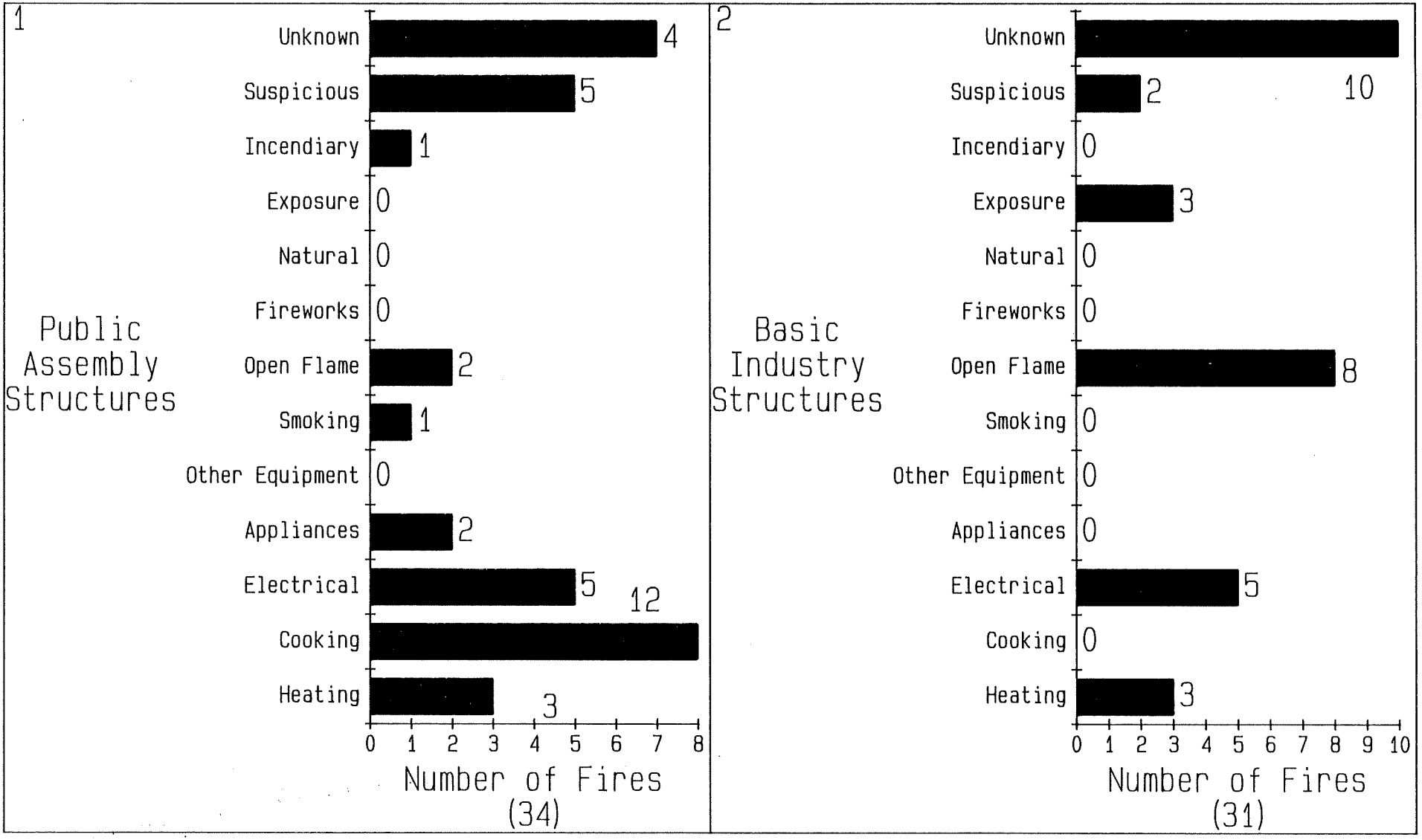

ALARM TIME vs. FIRE LOSS
2001-2400
1601-2000
1201-1600
0801-1200
0401-0800
0001-0400
$6527797
$2534108
$3180974
$1634697
$2921052
$2135122
FIRE LOSS

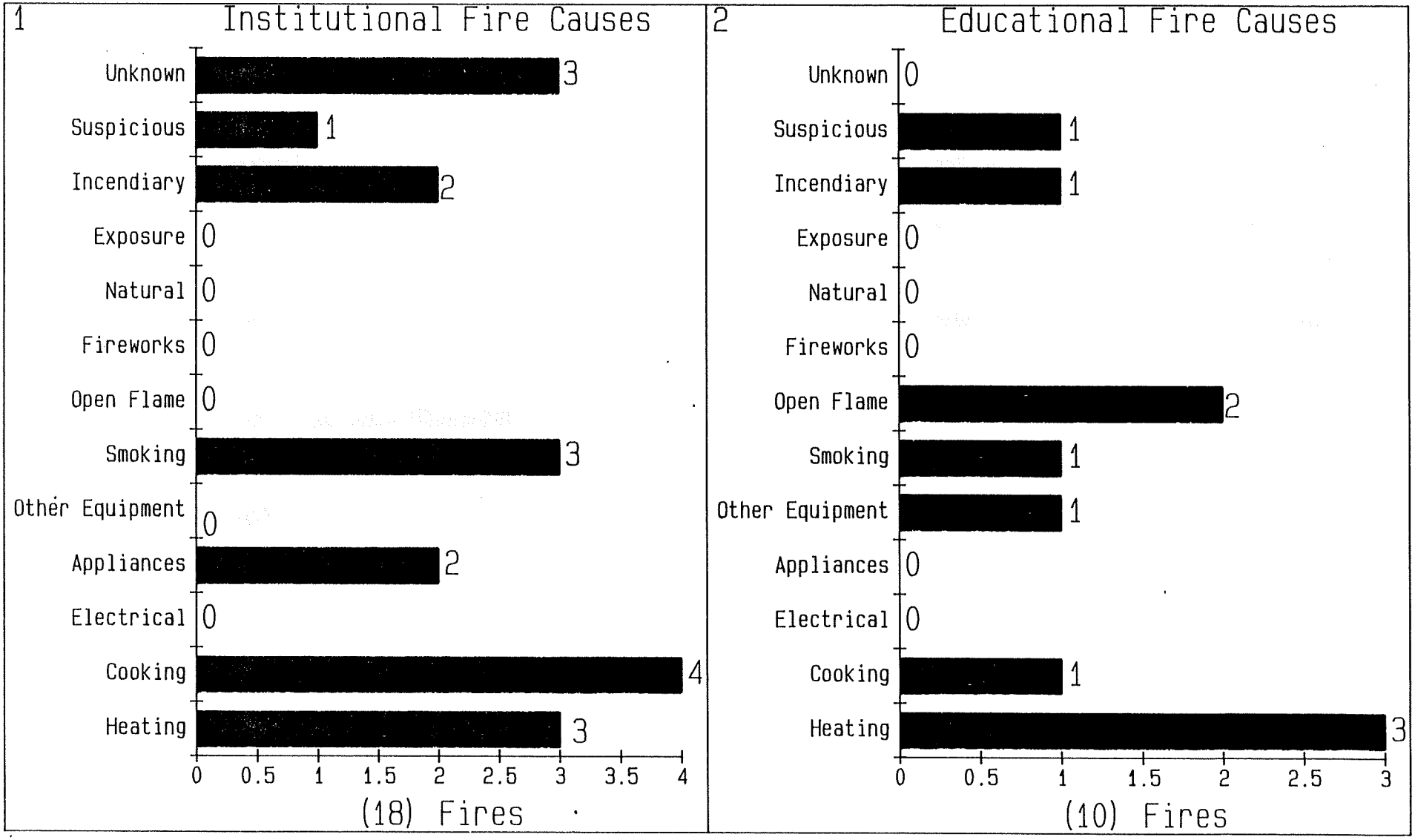

Structure Loss
By Property Type
($17,009,346)
Assembly
$608284
Educational
$28960
Institutional
$2815
Residential
$5687342
Store/Office
$1584105
Industrial
$1129850
Manufacturing
$4966850
Storage
$2794750
Special
$186190
Unclassified
$20200
Fire Loss
(Millions)

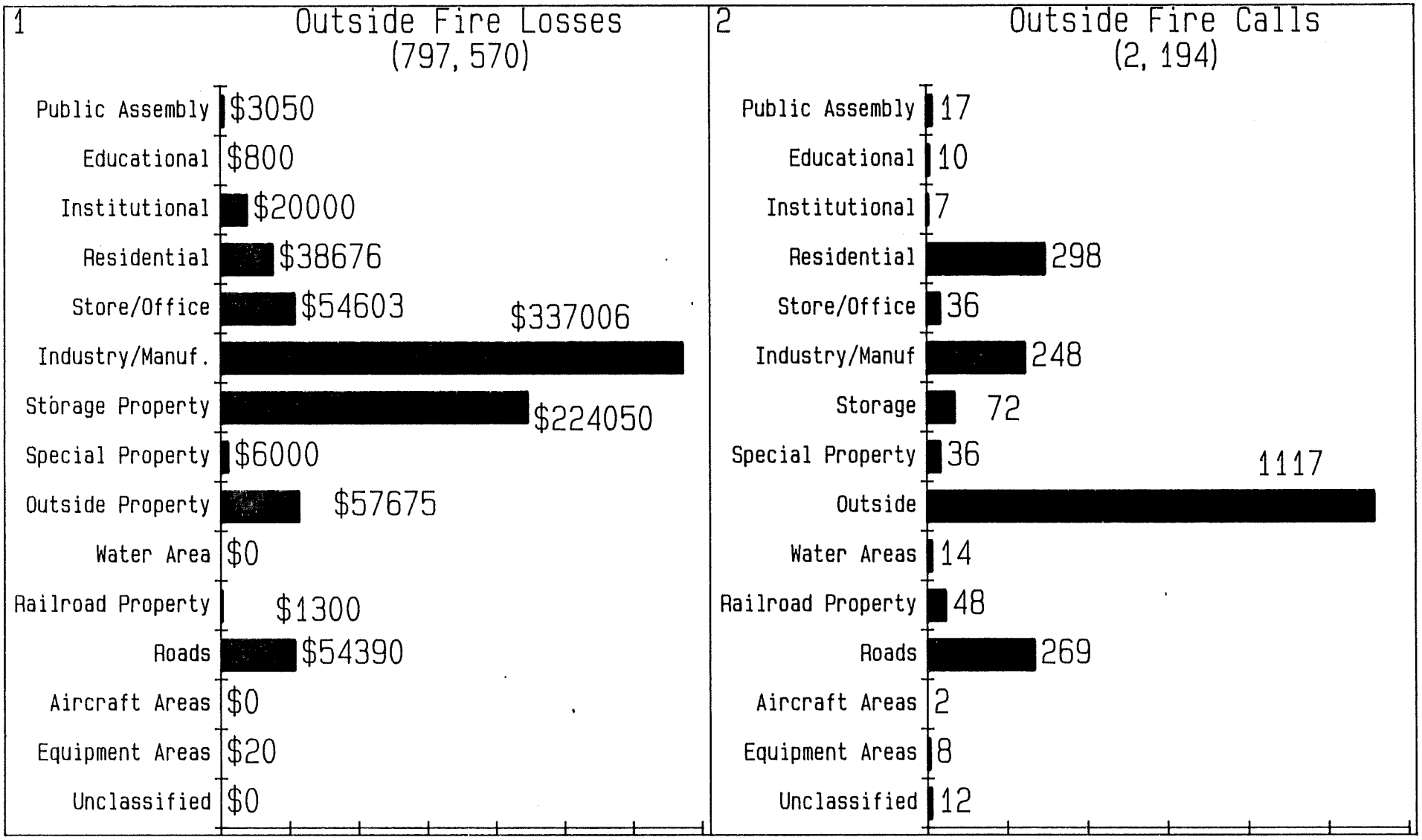

Residential Fires
Unknown
100
Suspicious
36
Incendiary
20
Exposure
18
Natural
5
Fireworks
11
Open Flame
101
Smoking
37
Other Equipment
7
Appliances
62
Electrical
85
Cooking
116
Heating
698
0
100
200
300
400
500
600
700
(1,296) Fires

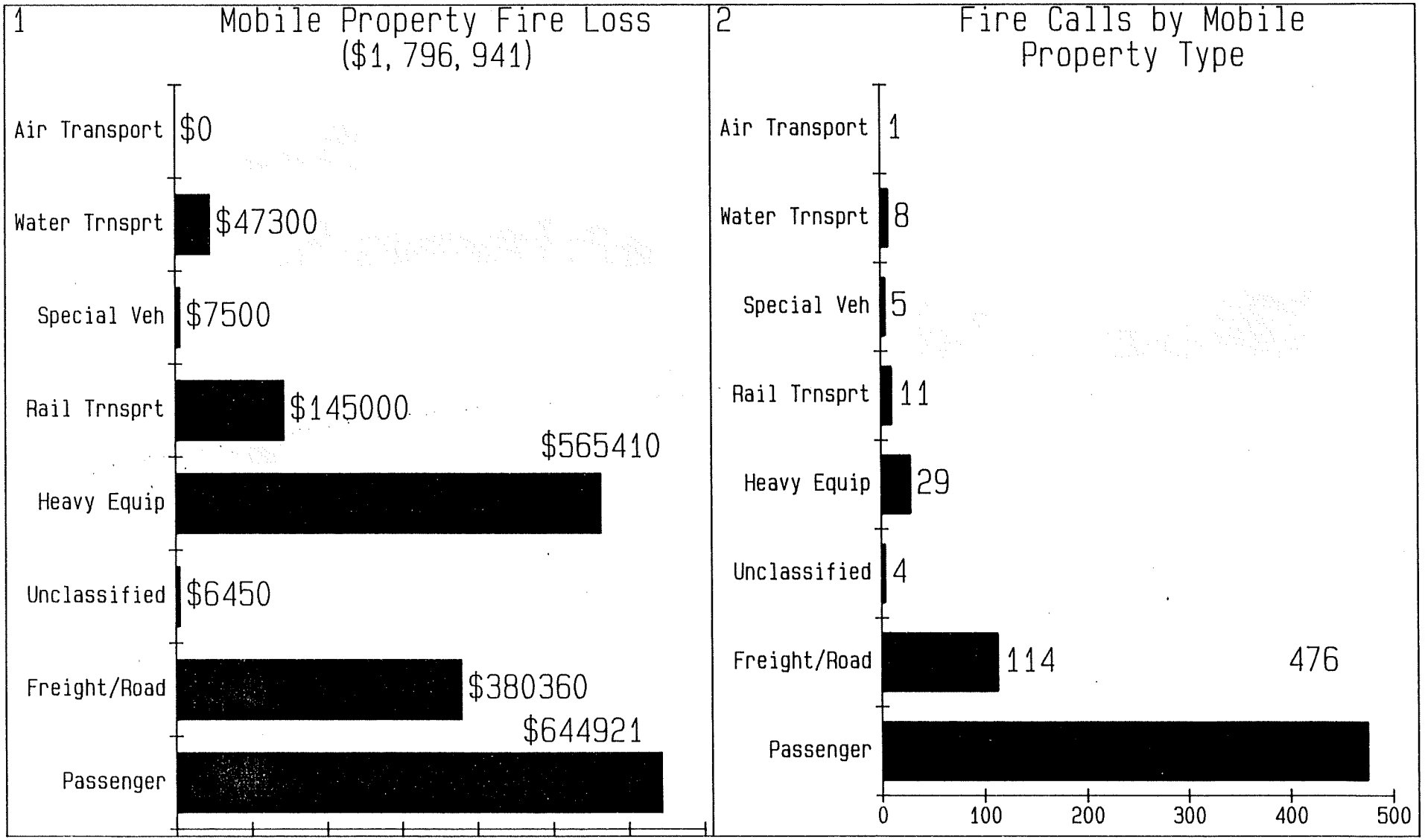

Storage Fire Causes
1
Unknown 40
Suspicious 10
Incendiary 3
Exposure 10
Natural 5
Fireworks 2
Open Flame 50
Smoking 2
Other Equipment 2
Appliances 5
Electrical 9
Cooking 0
Heating 13
0 5 10 15 20 25 30 35 40 45 50
(151) Fires
Manufacturing Fire Causes
2
Unknown 9
Suspicious 1
Incendiary 0
Exposure 1
Natural 4
Fireworks 1
Open Flame 6
Smoking 1
Other Equipment 11
Appliances 6
Electrical 1
Cooking 4
Heating 3
0 2 4 6 8 10 12
(48) Fires

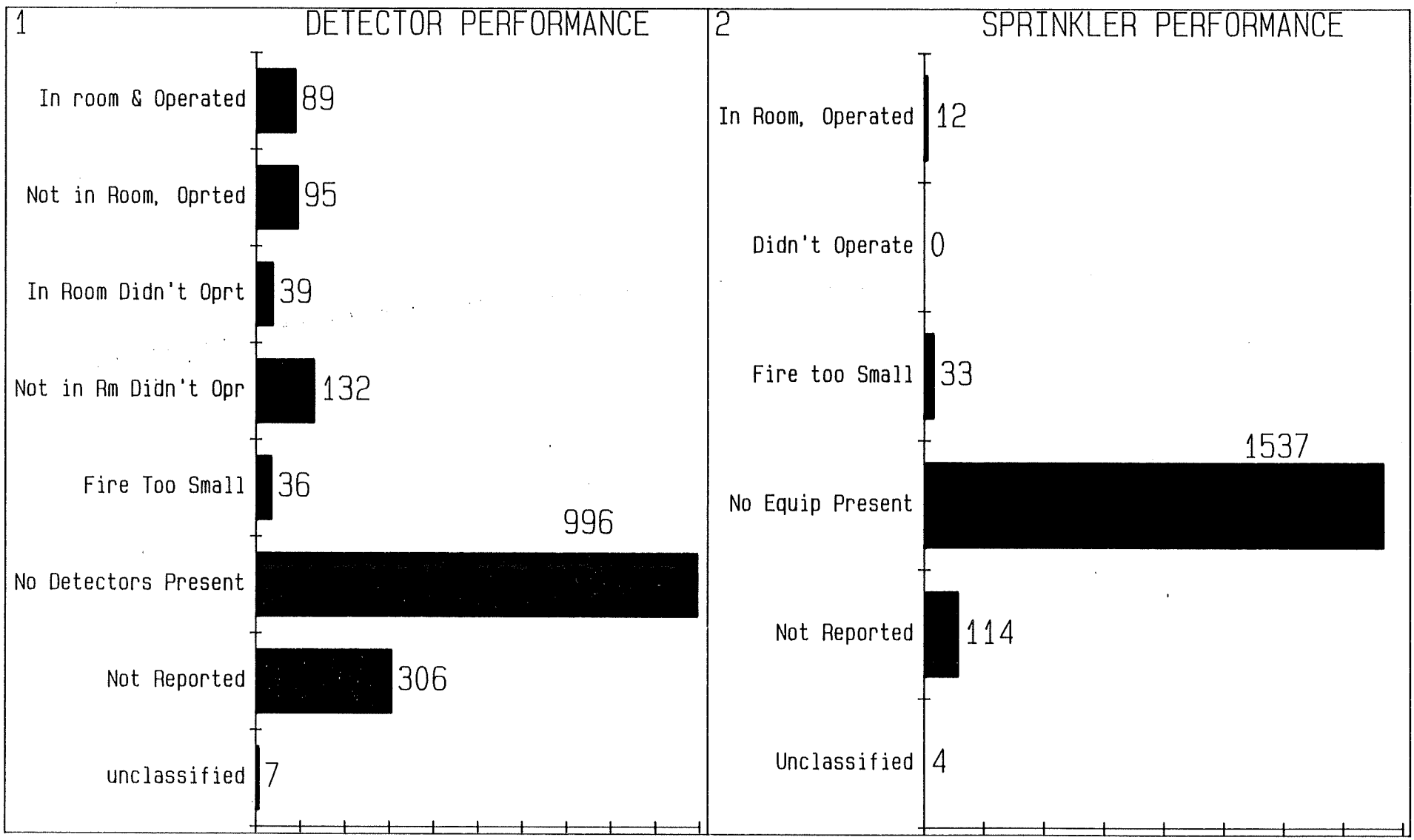

1
Special Properties
Unknown
Suspicious
Incendiary
Exposure
Natural
Fireworks
Open Flame
Smoking
Other Equipment
Appliances
Electrical
Cooking
Heating
14
10
2
2
0
0
15
1
0
1
3
0
1
0 2 4 6 8 10 12 14 16
(49 Fires)
2
Office/Store
Unknown
Suspicious
Incendiary
Exposure
Natural
Fireworks
Open Flame
Smoking
Other Equipment
Appliances
Electrical
Cooking
Heating
7
5
1
2
1
1
4
2
0
6
14
4
10
0 2 4 6 8 10 12 14
(57 Fires)


1
Public Assembly Structures
Unknown
Suspicious
Incendiary
Exposure
Natural
Fireworks
Open Flame
Smoking
Other Equipment
Appliances
Electrical
Cooking
Heating
4
5
1
0
0
0
2
1
0
2
5
12
3
0 1 2 3 4 5 6 7 8
Number of Fires
(34)
2
Basic Industry Structures
Unknown
Suspicious
Incendiary
Exposure
Natural
Fireworks
Open Flame
Smoking
Other Equipment
Appliances
Electrical
Cooking
Heating
10
2
0
3
0
0
8
0
0
0
5
0
3
0 1 2 3 4 5 6 7 8 9 10
Number of Fires
(31)


1
Institutional Fire Causes
Unknown
Suspicious
Incendiary
Exposure
Natural
Fireworks
Open Flame
Smoking
Other Equipment
Appliances
Electrical
Cooking
Heating
3
1
2
0
0
0
0
3
0
2
0
4
3
0 0.5 1 1.5 2 2.5 3 3.5 4
(18) Fires
2
Educational Fire Causes
Unknown
Suspicious
Incendiary
Exposure
Natural
Fireworks
Open Flame
Smoking
Other Equipment
Appliances
Electrical
Cooking
Heating
0
1
1
0
0
0
2
1
1
0
0
1
3
0 0.5 1 1.5 2 2.5 3
(10) Fires

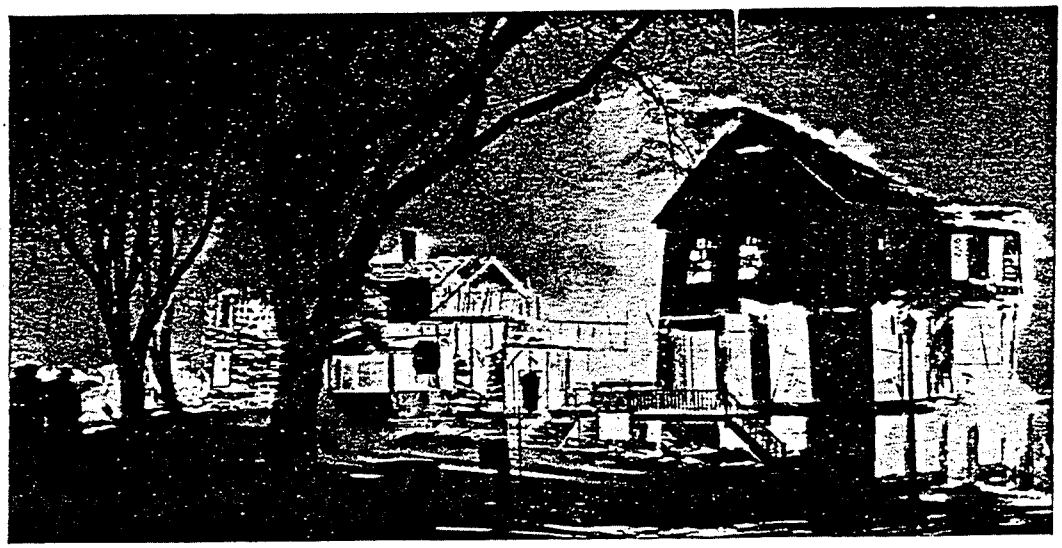

1
Outside Fire Losses
(797, 570)
Public Assembly
$3050
Educational
$800
Institutional
$20000
Residential
$38676
Store/Office
$54603
Industry/Manuf.
$337006
Storage Property
$224050
Special Property
$6000
Outside Property
$57675
Water Area
$0
Railroad Property
$1300
Roads
$54390
Aircraft Areas
$0
Equipment Areas
$20
Unclassified
$0
2
Outside Fire Calls
(2, 194)
Public Assembly
17
Educational
10
Institutional
7
Residential
298
Store/Office
36
Industry/Manuf
248
Storage
72
Special Property
36
Outside
1117
Water Areas
14
Railroad Property
48
Roads
269
Aircraft Areas
2
Equipment Areas
8
Unclassified
12


1
Mobile Property Fire Loss
($1,796,941)
Air Transport
$0
Water Trnsprt
$47300
Special Veh
$7500
Rail Trnsprt
$145000
Heavy Equip
$565410
Unclassified
$6450
Freight/Road
$380360
Passenger
$644921
2
Fire Calls by Mobile
Property Type
Air Transport
1
Water Trnsprt
8
Special Veh
5
Rail Trnsprt
11
Heavy Equip
29
Unclassified
4
Freight/Road
114
Passenger
476
0
100
200
300
400
500


1
DETECTOR PERFORMANCE
In room & Operated
89
Not in Room, Oprted
95
In Room Didn't Oprt
39
Not in Rm Didn't Opr
132
Fire Too Small
36
No Detectors Present
996
Not Reported
306
unclassified
7
2
SPRINKLER PERFORMANCE
In Room, Operated
12
Didn't Operate
0
Fire too Small
33
No Equip Present
1537
Not Reported
114
Unclassified
4

F. C. Scott.

Ellsworth, Maine, May 7, 1933. The fire in this old wooden storehouse, long recognized as a fire menace, eventually destroyed 127 buildings with a loss of $1,300,000. It was set with criminal intent. Note the furious burning of the wood roof, from which flying brands spread to other wood shingle roofs, resulting in a conflagration.



D. M. Maher

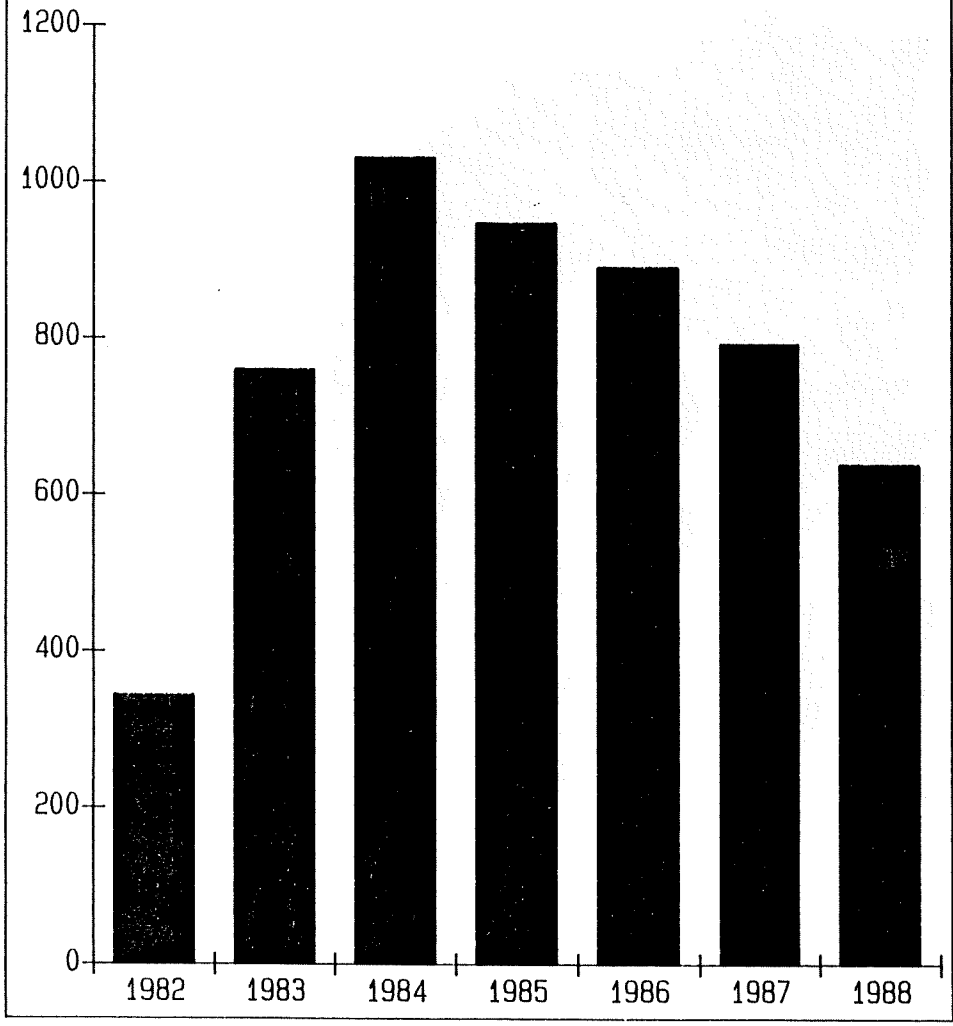
Ellsworth, Maine, May 7, 1933. A block of dwellings burning at the height of the conflagration, showing the construction and extreme rapidity of burning. Inadequate water supply and high wind handicapped firemen.

1988 FIRE REPORT

PART IV – A GRAPHIC STUDY OF WOOD HEATING APPLIANCES

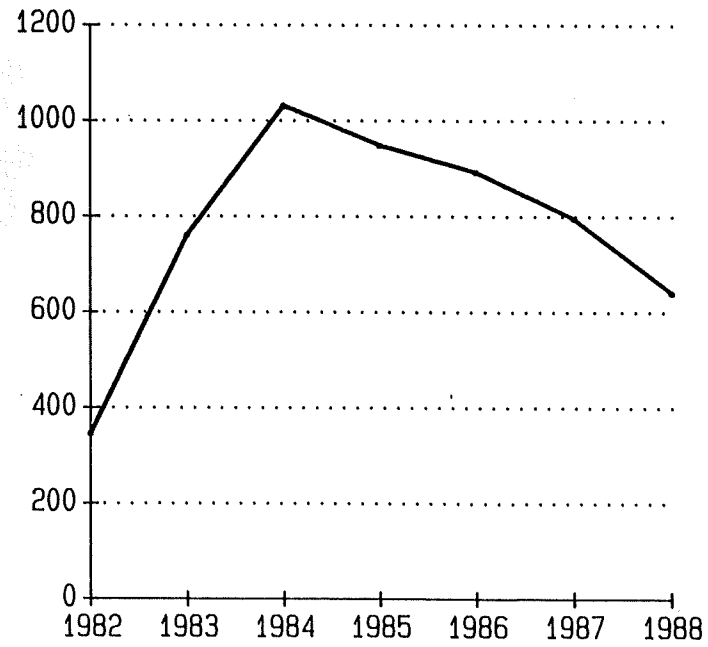
1

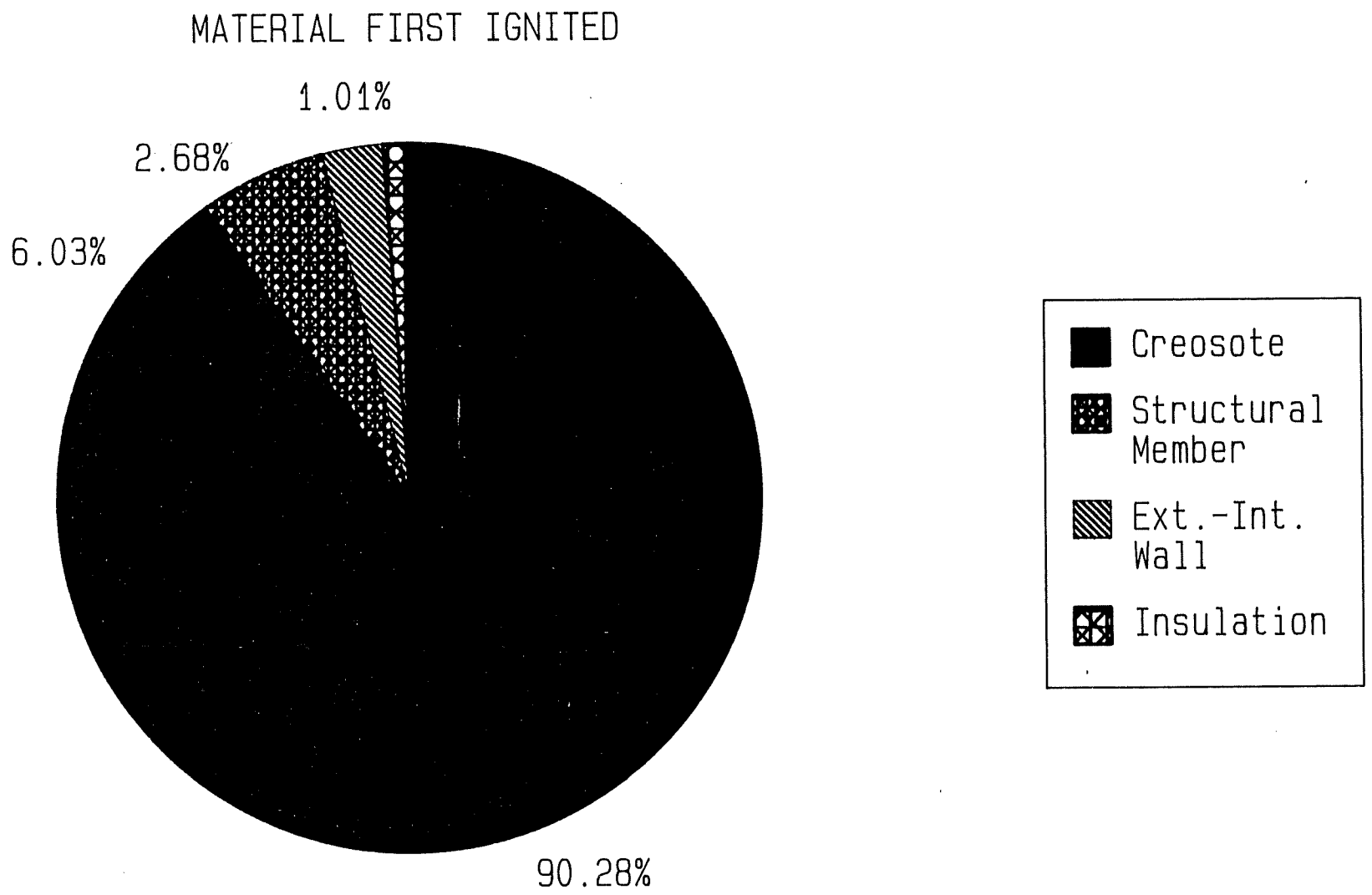
SOLID FUEL RESIDENTIAL FIRES IN IDAHO

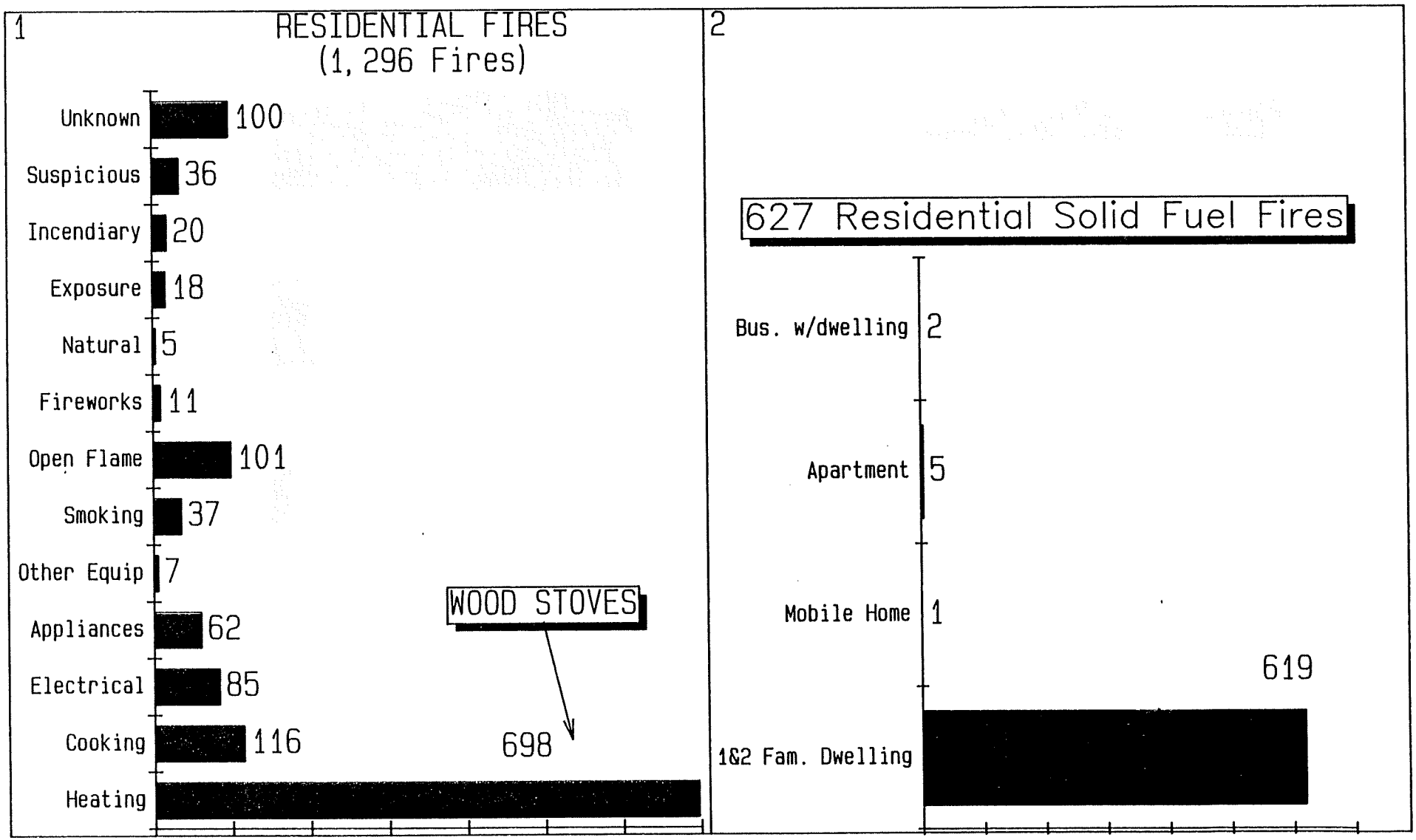


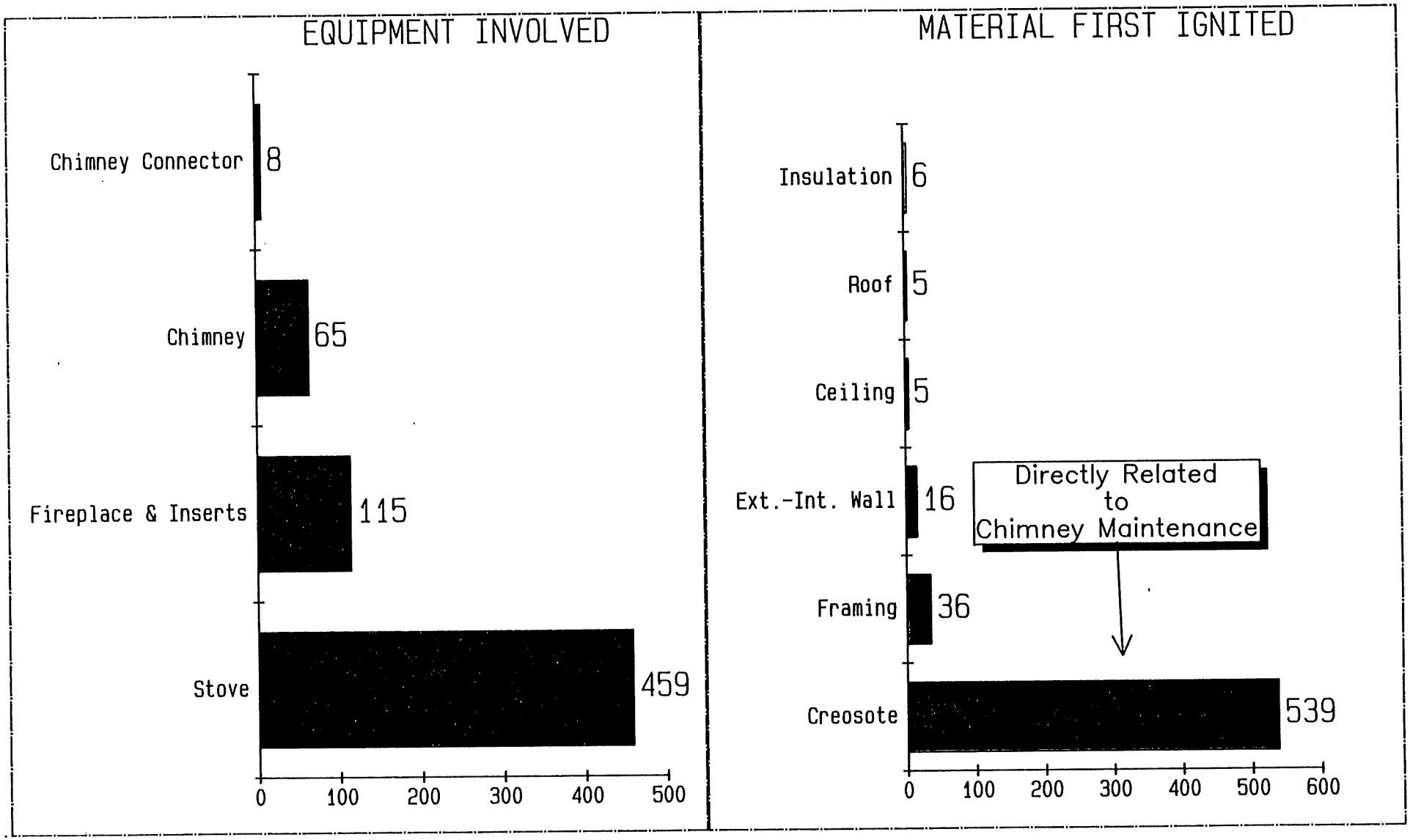
2

Wood stove fires are on a downward trend. We can thank the fire service for their efforts.




MATERIAL FIRST IGNITED
1.01%
2.68%
6.03%
90.28%
Creosote
Structural Member
Ext.-Int. Wall
Insulation


1
RESIDENTIAL FIRES
(1,296 Fires)
Unknown 100
Suspicious 36
Incendiary 20
Exposure 18
Natural 5
Fireworks 11
Open Flame 101
Smoking 37
Other Equip 7
Appliances 62
Electrical 85
Cooking 116
Heating 698
WOOD STOVES
2
627 Residential Solid Fuel Fires
Bus. w/dwelling 2
Apartment 5
Mobile Home 1
1&2 Fam. Dwelling 619


EQUIPMENT INVOLVED
Chimney Connector
8
Chimney
65
Fireplace & Inserts
115
Stove
459
0
100
200
300
400
500
MATERIAL FIRST IGNITED
Insulation
6
Roof
5
Ceiling
5
Ext.-Int. Wall
16
Framing
36
Creosote
539
Directly Related
to
Chimney Maintenance
0
100
200
300
400
500
600

PART V

NATIONAL FIRE DATA

THE 1987 FIRE PICTURE AT A GLANCE

FIRES

- o Fires attended by public fire departments increase by 2.6 percent to 2,330,000.
- o Fires in outside properties increased by 8.5 percent to 1,101,000.
- o Residential properties accounted for 73 percent, or 551,500, of all structure fires.
- o Fires in structures decreased by 5.3 percent to 758,000.
- o The South's fire incident rate was highest, at 11.3 percent per thousand population.

FIRE DEATHS

- o Civilian fire deaths decreased by 0.7 percent to 5,810.
- o Residential fire deaths, which accounted for 80.2 percent of all fire fatalities, decreased by 2.3 percent to 4,660.
- o The South had the highest rate of civilian fire deaths, at 29 per million population, 21 percent higher than the national average.

FIRE INJURIES

- o Civilian injuries increased 5.2 percent top 28,215.
- o Residential properties were the site of 72.5 percent, or 20,440, of civilian injuries, while nonresidential structures saw 12 percent, or 3,375.
- o The Northeast had the highest civilian injury rate, with 126.4 per million population

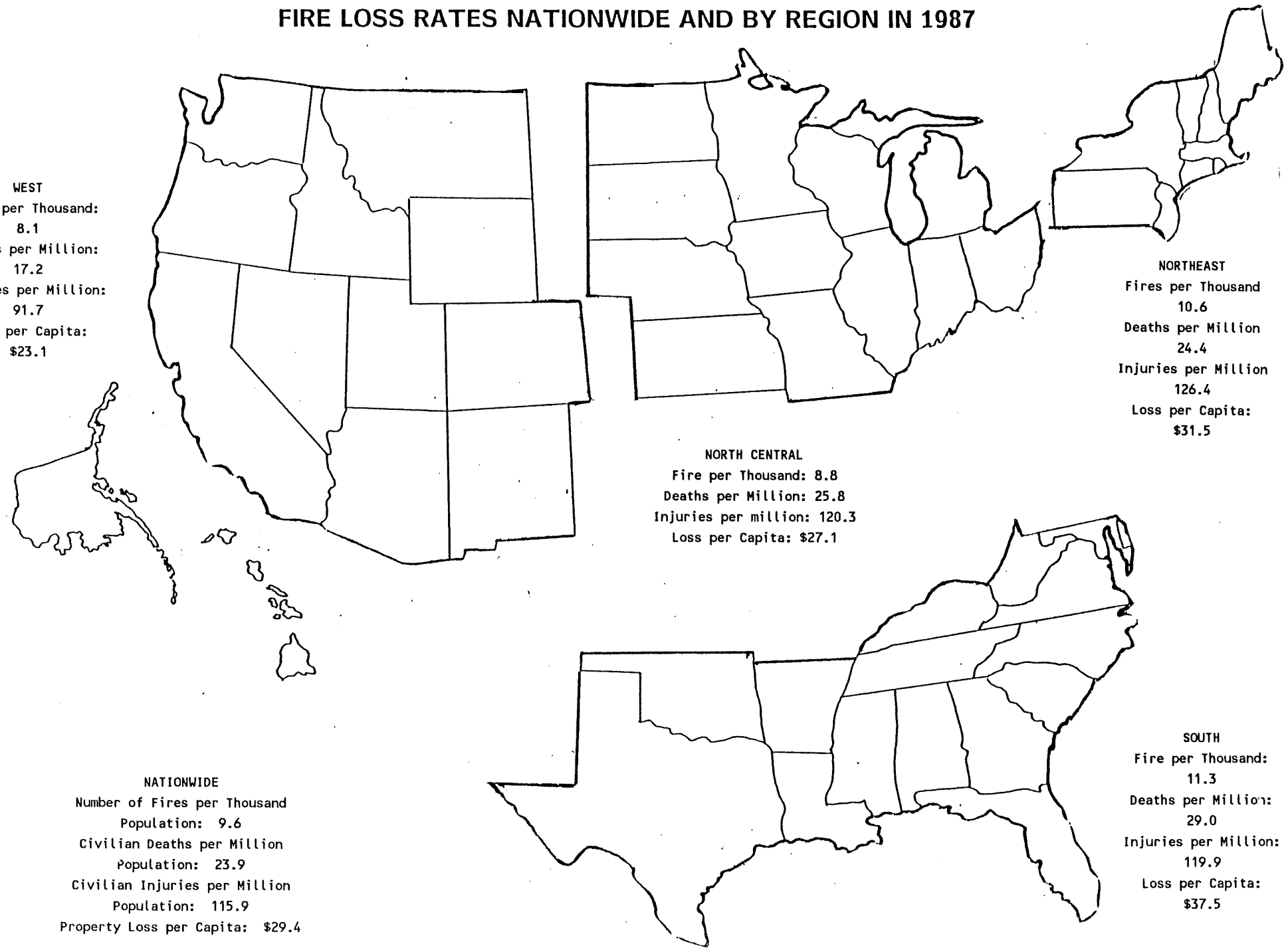
PROPERTY DAMAGE

- o Property losses increased by 6.7 percent to $7.159 billion.
- o Structure fires caused $6.226 billion, or 87 percent, of all property damage, with an average loss per structure fire of $8,212, up to 12.6 percent.
- o Residential properties incurred $3.699 billion, or 61 percent, of all structure property loss.
- o The South's property loss rate was 28 percent higher than the national average, at $37.5 per person.

INCENDIARY AND SUSPICIOUS FIRE

- o The number of structure fires that were deliberately set, or are suspected of having been set, was down 5.4 percent to 105,000.
- o Incendiary and suspicious fires accounted for 13.8 percent of all structure fires and 25.5 percent of all structure property loss.
- o Incendiary and suspicious structure fire resulted in 730 civilian deaths, an increase of 3.6 percent, and $1.590 billion in property damage, a decrease of 5.2 percent.
- o Incendiary and suspicious vehicle fires decreased 10.5 percent to 51,000, and resulted in $135 million in property damage, down 10.6 percent.

FIRE LOSS RATES NATIONWIDE AND BY REGION IN 1987



WEST
Fires per Thousand:
8.1
Deaths per Million:
17.2
Injuries per Million:
91.7
Loss per Capita:
$23.1

NORTHEAST
Fires per Thousand
10.6
Deaths per Million
24.4
Injuries per Million
126.4
Loss per Capita:
$31.5

NORTH CENTRAL
Fire per Thousand: 8.8
Deaths per Million: 25.8
Injuries per million: 120.3
Loss per Capita: $27.1

SOUTH
Fire per Thousand:
11.3
Deaths per Million:
29.0
Injuries per Million:
119.9
Loss per Capita:
$37.5

NATIONWIDE
Number of Fires per Thousand
Population: 9.6
Civilian Deaths per Million
Population: 23.9
Civilian Injuries per Million
Population: 115.9
Property Loss per Capita: $29.4