ISSN 0382–196X

ANNUAL REPORT

OF THE

FIRE MARSHAL

FOR

1977

BRITISH COLUMBIA

HON. GARDE B. GARDOM, Q.C.
Attorney-General of British Columbia

HENRY K. JENNS
Fire Marshal of British Columbia

MINISTRY OF THE ATTORNEY-GENERAL

To Colonel the Honourable WALTER S. OWEN, Q.C., LL.D.,
Lieutenant-Governor of the Province of British Columbia

MAY IT PLEASE YOUR HONOUR:

The undersigned has the honour to present the Fifty-sixth Annual Report of the Fire Marshal for the year ended December 31, 1977.

GARDE B. GARDOM, Q.C.
Attorney-General

VICTORIA, B.C.

TABLE OF CONTENTS

	PAGE
Summary of Fire Losses in 1977	7
Fire Losses in Municipalities and Fire Districts	9
Fire Loss Statistics for All Fires	11
Summary of Fire Losses by Property Classifications	16
Fire Losses of $250,000 and Over	17
Causes of Fire Resulting in Death	18
Fire Casualties by Month	18
Fire Casualties by Day of Week	18
Fire Casualties by Age	18
Circumstances Contributing to Fire Casualties	19
Fire Crime Statistics	20
Inspections and Orders by Local Assistants to the Fire Marshal	21
10-year Property Fire Loss Comparison	23
Charts—	
Number of Fires	24
Fires *per Capita*	24
Annual Dollar Loss	25
Dollar Loss per Fire	26
Per Capita Loss	27
Fire Fatalities	28

SUMMARY OF FIRE LOSSES IN 1977

A total of 94 persons died and 376 were injured as a result of 7,523 fires in 1977, causing a total dollar loss of $78,746,492. In 1976, 7,433 fires resulted in a loss of over $77.6 million and 110 persons dead.

The average loss per fire for the Province in 1977 was $10,467. The *per capita* loss was $31.53, the *per capita* loss adjusted by the Consumer Price Index (Vancouver) was $19.49, as compared to $20.83 in 1976. There were 3.01 fires for every 1,000 persons in British Columbia. It is interesting to note that the number of fires per person in the Province has been steadily decreasing over the last 40 years.

Fire Fatalities

Fire-related deaths in 1977 were, in fact, the lowest in the last eight years. One third of 1977's fire fatalities can be attributed to careless use of smoking materials. Impairment by liquor played a significant role in many of the smoking-related fire deaths.

Ten persons died from fires caused by misuse or accidental spills of flammable liquids. Seven deaths resulted from incendiary fires. Five persons died when their clothing accidentally caught on fire. There were three cases of suicide by fire in 1977. Thirty-one persons who died from fire were asleep at the time of fire.

Residential Fires

Almost 30 per cent of fires were in one- and two-family dwellings causing a total loss of $21.2 million. Another 8 per cent of fires were in apartment buildings, causing a loss of almost $3.3 million. The above two residential categories thus accounted for 38 per cent of fires and 31 per cent of the total fire losses in British Columbia.

75 per cent of fire fatalities occurred in residential occupancies.

Automobile Fires

Automobile fires accounted for almost 20 per cent of the fires in 1977.

School Fires

Fire losses in educational institutions went down dramatically to $2.5 million from almost $10 million in 1976 and $6 million in 1975, while the number of incidents remained almost the same.

Fire Crimes

A total of 1,741 or 23 per cent of the 7,523 fires were deliberately set, causing a loss of $21.9 million. There were 343 set fires from 8 a.m. to 4 p.m., whereas from 4 p.m. to midnight, there were 697, and from midnight to 8 a.m., there were 701 incidents. The rate more than doubles after dark.

Large Loss Fires

There were 41 fires in which losses exceeded $250,000. These 41 fires, which constitute only about one-half per cent of total fires, were responsible for 37 per cent of the Province's annual dollar losses. Included in this large-loss category were 14 incendiary fires causing 16 per cent of the total loss.

TIME

The 4 p.m. to midnight period accounted for 45 per cent of fires, the 8 a.m. to 4 p.m. period accounted for 31 per cent, and the last period from midnight to 8 a.m. is the one with the least fires, but a fire occurring in that period is likely to do the most harm. Last year, although this period accounted for only 25 per cent of the fires, those fires caused 44 per cent of the dollar loss and 44 per cent of the fire deaths.

HENRY K. JENNS
Fire Marshal

Fire Losses in Municipalities and Fire Districts, 1977

City Municipalities

	Incidents	Loss $	Injured	Dead
Armstrong	2	25,350	—	—
Burnaby	363	2,156,774	29	1
Chilliwack	21	161,569	1	—
Courtenay	25	64,294	—	1
Cranbrook	23	1,121,611	1	—
Dawson Creek	36	413,870	3	1
Duncan	16	70,132	—	—
Enderby	3	42,048	—	—
Fernie	7	52,800	—	—
Grand Forks	5	31,780	—	—
Greenwood	1	45,000	—	2
Fort St. John	38	946,659	—	—
Kamloops	128	1,699,470	8	2
Kelowna	38	1,142,048	—	1
Kimberley	12	107,550	—	—
Langley	49	106,781	6	—
Nanaimo	152	3,210,397	9	3
Nelson	16	75,372	—	—
North Vancouver City	96	583,347	5	1
New Westminster	166	470,012	7	—
Port Alberni	85	487,542	3	1
Port Coquitlam	29	702,513	4	—
Penticton	70	869,753	17	—
Prince George	279	1,313,900	2	3
Port Moody	22	397,089	1	1
Prince Rupert	37	499,202	—	8
Revelstoke	13	60,547	—	—
Rossland	13	86,028	—	—
Trail	41	421,061	—	—
Vancouver	1,842	7,391,193	83	11
Vernon	47	1,052,211	1	—
Victoria	230	5,625,083	24	2
White Rock	7	41,214	—	—

District Municipalities

	Incidents	Loss $	Injured	Dead
Abbotsford-Sumas	40	73,194	—	—
Campbell River	35	522,083	1	—
Central Saanich	16	63,874	1	—
Chilliwhack	70	575,766	4	1
Coldstream	11	129,619	—	—
Coquitlam	124	784,352	2	—
Delta	149	1,208,698	23	—
Esquimalt	33	37,835	—	—
Houston	4	62,500	2	—
Kent	8	103,062	—	—
Kitimat	67	135,824	13	1
Langley	87	849,022	11	4
Mackenzie	18	77,165	—	1
Mission	43	625,607	—	—
Maple Ridge	84	1,013,280	4	—
Matsqui	93	802,103	5	1
North Cowichan	38	437,127	3	1
North Saanich	8	75,926	—	—
North Vancouver	186	4,541,440	19	—
Oak Bay	23	80,806	1	1
Peachland	3	41,000	—	—
Port Hardy	9	779,847	—	—
Pitt Meadows	8	135,460	—	—
Powell River	25	76,729	—	—
Richmond	200	2,187,091	22	—
Saanich	144	460,224	4	—
Sparwood	18	1,030	—	—
Summerland	11	228,423	—	—
Salmon Arm	35	317,225	1	—
Spallumcheen	2	32,003	—	—
Squamish	30	104,111	—	—
Stewart	1	200	—	—
Surrey	311	2,300,938	10	—
Terrace	39	281,170	1	—
Whistler	4	250,450	1	2
West Vancouver	159	615,383	5	—

Fire Districts

	Incidents	Loss $	Injured	Dead
Cariboo County	362	7,231,737	13	11
Colwood	18	5,957	—	—
Kootenay County	113	2,107,812	4	—
Langford	16	66,047	1	—
Nanaimo County	159	2,495,786	7	11
Ocean Falls	6	18,882	—	—
Prince Rupert County	95	2,046,911	—	5
Sooke	5	50,036	—	—
University Area	18	224,320	—	—
Vancouver County	45	232,693	—	1
Victoria County	49	141,625	1	2
View Royal	5	17,600	1	—
Westminster County	66	1,092,668	1	1
Yale County	232	2,226,002	3	2

Town Municipalities

	Incidents	Loss $	Injured	Dead
Castlegar	2	12,165	—	—
Comox	8	6,640	—	—
Creston	4	171,000	—	—
Golden	7	167,504	—	—
Hope	2	26,500	—	1
Kinnaird	7	97,564	2	—
Ladysmith	9	54,569	—	—
Merritt	13	135,598	—	—
Quesnel	18	157,024	—	—
Sidney	8	97,769	—	—
Smithers	4	121,882	—	—
Williams Lake	10	448,337	2	1

Fire Losses in Municipalities and Fire Districts, 1977—Continued

Village Municipalities

	Incidents	Loss $	Injured	Dead
Alert Bay	.....	.....	.....	.....
Ashcroft	9	621,920	.....	.....
Burns Lake	7	143,925	.....	.....
Cache Creek	1	20,000	.....	.....
Chase	1	28,564	.....	.....
Clinton	1	4,208	.....	.....
Cumberland	6	58,400	3	1
Elkford	.....	.....	.....	.....
Fraser Lake	1	1,374	.....	.....
Fort Nelson	23	5,211,417	.....	.....
Fruitvale	2	5,600	.....	.....
Gibsons Landing	3	5,300	.....	.....
Gold River	.....	.....	.....	.....
Hazleton	1	4,000	.....	.....
Harrison Hot Springs	4	35,970	.....	.....
100 Mile House	7	78,532	.....	.....
Invermere	1	10,000	.....	.....
Kaslo	.....	.....	.....	.....
Keremeos	4	36,909	.....	.....
Lions Bay	3	58,648	.....	2
Lake Cowichan	2	1,200	.....	.....
Lillooet	3	316,000	.....	.....
Logan Lake	16	23,298	.....	.....
Lumby	10	99,377	.....	.....
Lytton	1	110,440	.....	.....
Masset	5	2,221	.....	.....
McBride	.....	.....	.....	.....
Midway	11	110,716	.....	.....
Montrose	1	400	.....	.....
New Denver	3	7,325	.....	.....
Oliver	.....	.....	.....	.....
Osoyoos	2	1,240	.....	.....
Parksville	11	27,139	1	3
Pouce Coupe	.....	.....	.....	.....
Port Edward	6	73,500	.....	1
Pemberton	1	2,200	.....	.....
Village of Port Clements	2	76,000	.....	.....
Port McNeill	.....	.....	.....	.....
Port Alice	8	43,537	.....	.....
Princeton	4	72,200	.....	.....
Qualicum Beach	6	25,781	.....	.....
Salmo	1	9,000	.....	.....
Sechelt	.....	.....	.....	.....
Fort St. James	.....	.....	.....	.....
Tahsis	.....	.....	.....	.....
Telkwa	1	200,000	.....	.....
Tofino	1	800	.....	.....
Taylor	5	40,300	.....	.....
Valemount	5	146,004	.....	.....
Vanderhoof	4	72,000	.....	1
Warfield	11	21,652	.....	.....
Zeballos	.....	.....	.....	.....

Provincial Totals

	Incidents	Loss $	Injured	Dead
Provincial totals	7,523	78,746,492	376	94

Fire Loss Statistics for All Fires,[1] *1977*

	Incidents	Per Cent of Incidents	Loss	Per Cent of Loss
Day of week—			$	
Sunday	1,034	13.7	11,789,970	14.9
Monday	973	12.9	11,834,495	15.0
Tuesday	966	12.8	8,071,589	10.2
Wednesday	959	12.7	10,404,258	13.2
Thursday	1,041	13.8	9,553,688	12.1
Friday	1,093	14.5	10,480,131	13.3
Saturday	1,215	16.1	15,768,719	20.0
Unknown	242	3.2	843,642	1.0
Totals	7,523	100.0	78,746,492	100.0
General construction—				
Combustable, fire-resistance rating—				
Less than ¾ hour	2,897	38.5	33,795,190	42.9
¾ hour or greater	959	12.7	16,533,145	20.9
Heavy timber construction	95	1.2	7,784,802	9.8
Noncombustable fire-resistance rating—				
Less than 1 hour	193	2.5	2,564,447	3.2
1 hour or greater	232	3.0	3,437,246	4.3
General construction—unclassified	273	3.6	5,915,827	7.5
Unknown or not applicable	2,874	38.2	8,715,835	11.0
Totals	7,523	100.0	78,746,492	100.0
Building height—				
1-storey	2,306	30.6	28,581,027	36.2
2-storey	1,272	16.9	21,618,592	27.4
3-storey	438	5.8	11,146,829	14.1
4- to 6-storey	188	2.4	1,839,629	2.3
7- to 10-storey	51	.6	68,786	-------
11- to 20-storey	54	.7	534,391	.6
21 and more storeys	16	.2	120,591	.1
Unknown or not applicable	3,198	42.5	14,836,647	18.8
Totals	7,523	100.0	78,746,492	100.0
Year of Construction—				
Before 1900	25	.3	1,466,728	1.8
1900 to 1920	182	2.4	6,121,401	7.7
1921 to 1940	817	10.8	8,945,339	11.3
1941 to 1960	989	13.1	15,228,123	19.3
1961 to 1980	2,102	27.9	30,893,903	39.2
Unknown or not applicable	3,408	45.3	16,090,998	20.4
Totals	7,523	100.0	78,746,492	100.0
Interior fire protection—				
Extinguishers, standpipe system, and manual alarm	280	3.7	7,075,003	8.9
Extinguishers and standpipe system	50	.6	9,436,951	11.9
Extinguishers and manual alarm system	303	4.0	5,335,462	6.7
Extinguishers	480	6.3	15,662,958	19.8
Standpipe system and manual alarm system	94	1.2	359,252	.4
Standpipe System	14	.1	185,530	.2
Manual fire alarm system	216	2.8	1,391,408	1.7
Manual fire protection facilities—unclassified	175	2.3	2,213,191	2.8
Unknown or not applicable	5,911	78.5	37,086,737	47.0
Totals	7,523	100.0	78,746,492	100.0
Last inspected—				
Less than 30 days	173	2.2	2,684,588	3.4
31 to 60 days	174	2.3	2,928,244	3.7
61 to 90 days	269	3.5	9,498,329	12.0
91 to 180 days	576	7.6	10,422,060	13.2
6 to 12 months	179	2.3	9,526,381	12.0
13 to 24 months	69	.9	1,144,984	1.4
25 to 36 months	24	.3	527,554	.6
Over 36 months	87	1.1	1,995,579	2.5
Not applicable	3,783	50.2	24,842,620	31.5
Unknown	2,189	29.0	15,176,153	19.2
Totals	7,523	100.0	78,746,492	100.0

[1] Similar information is available for groups of specific property classifications as listed on page 16—Summary of Fire Losses by Property Classifications.

Fire Loss Statistics for All Fires,[1] *1977*—Continued

	Incidents	Per Cent of Incidents	Loss	Per Cent of Loss
Sprinkler protection—				
Complete—			$	
Supervised or standard watchman service	43	.5	5,055,450	6.4
Alarm to fire department	11	.1	524,135	.6
Unsupervised, local alarms only	125	1.6	330,291	.4
Partial—				
Supervised or standard watchman service	31	.4	226,272	.2
Alarm to fire department	35	.4	289,479	.3
Unsupervised, local alarms only	119	1.5	261,188	.3
Insufficient information to classify further	13	.1	128,190	.1
No sprinkler protection	1,739	23.1	40,789,086	51.7
Unclassified	47	.6	401,579	.5
Unknown or not applicable	5,360	71.2	30,740,822	39.0
Totals	7,523	100.0	78,746,492	100.0
Automatic fire detection system—				
Complete—				
Heat—				
Alarm to fire department or central station	48	.6	3,783,719	4.8
Local alarm only	91	1.2	893,362	1.1
Combustion or smoke—				
Alarm to fire department or central station	8	.1	2,602,827	3.3
Local alarm only	17	.2	19,098	.....
Partial—				
Heat—				
Alarm to fire department or central station	49	.6	135,571	.1
Local alarm only	248	3.2	1,937,844	2.4
Combustion or smoke—				
Alarm to fire department or central station	31	.4	165,835	.2
Local alarm only	219	2.9	1,618,268	2.0
Unclassified	119	1.5	1,704,979	2.1
Unknown or not applicable	6,693	88.9	65,884,989	83.6
Totals	7,523	100.0	78,746,492	100.0
Outside fire protection—				
Municipal hydrant and fire department	4,238	56.3	41,179,079	52.2
Municipal hydrant and no fire department	5	.....	214,180	.2
Municipal fire department only	397	5.2	13,675,241	17.3
Private hydrant and fire department	68	.9	4,103,943	5.2
Private hydrant and no fire department	28	.3	1,525,988	1.9
Private fire department only	38	.5	580,056	.7
None	288	3.8	6,139,301	7.7
Unclassified	169	2.2	2,087,629	2.6
Unknown or not applicable	2,292	30.4	9,241,075	11.7
Totals	7,523	100.0	78,746,492	100.0
Water supply flow—				
None	416	5.5	13,922,033	17.6
Less than 200 gpm	127	1.6	3,432,901	4.3
200 to 399 gpm	141	1.8	3,100,747	3.9
400 to 599 gpm	524	6.9	5,779,573	7.3
600 to 799 gpm	436	5.7	5,261,821	6.6
800 to 1,199 gpm	981	13.0	14,146,976	17.9
1,200 to 1,599 gpm	378	5.0	3,216,486	4.0
1,600 or over gpm	1,377	18.3	13,936,655	17.6
Unclassified	49	.6	1,095,548	1.3
Unknown or not applicable	3,094	41.1	14,853,752	18.8
Totals	7,523	100.0	78,746,492	100.0

[1] Similar information is available for groups of specific property classifications as listed on page 16—Summary of Fire Losses by Property Classifications.

Fire Loss Statistics for All Fires,[1] *1977*—Continued

	Incidents	Per Cent of Incidents	Loss	Per Cent of Loss
Size of water-main—			$	
0	350	4.6	5,608,737	7.1
4	219	2.9	3,892,198	4.9
5	40	.5	245,822	.3
6	2,365	31.4	24,766,823	31.4
8	743	9.8	8,134,350	10.3
10	208	2.7	6,508,323	8.2
12	144	1.9	2,582,433	3.2
14 or over	85	1.1	850,482	1.0
Unclassified	48	.6	1,280,668	1.6
Unknown or not applicable	3,321	44.1	24,876,656	31.5
Totals	7,523	100.0	78,746,492	100.0
Fire service—				
Full-time fire department	2,816	37.4	24,296,822	30.8
Volunteer fire department	1,085	14.4	16,069,490	20.4
Combined full-time and volunteer	1,555	20.6	24,026,712	30.5
Police acting as full-time fire-fighters	4	------	600	------
Combined police and fire department	36	.4	78,765	.1
Combined police and volunteer fire-fighters	11	.1	161,800	.2
Contract to others	11	.1	195,000	.2
None	299	3.9	6,826,133	8.6
Unclassified	48	.6	1,516,410	1.9
Unknown or not applicable	1,658	22.0	5,574,760	7.0
Totals	7,523	100.0	78,746,492	100.0
Extinguishment—				
Hand fire extinguisher	1,079	14.3	2,687,626	3.4
Standpipe and hose system	106	1.4	991,849	1.2
Makeshift aids	778	10.3	1,102,481	1.4
Fire department—				
Water	3,793	50.4	53,124,204	67.4
Other than water	28	.3	2,197,215	2.7
Sprinkler system	42	.5	149,433	.1
Fixed system, not sprinkler	7	------	42,860	------
Burned out	590	7.8	13,839,773	17.5
Miscellaneous	830	11.0	3,663,406	4.6
Unknown	270	3.5	947,645	1.2
Totals	7,523	100.0	78,746,492	100.0
Level of origin—				
Basement, sub-basement	529	7.0	7,688,809	9.7
Crawl space, under structure	63	.8	565,191	.7
Ground floor, grade level (grade to 9 feet)	2,772	36.8	45,004,708	57.1
2nd storey (10 to 19 feet above grade)	565	7.5	6,391,378	8.1
3rd storey (20 to 29 feet above grade)	150	1.9	1,060,564	1.3
4th to 12th storey, inclusive (30 to 119 feet above grade)	93	1.2	545,907	.6
Over 12 storeys (120 feet and over above grade)	15	.1	41,406	------
Roof level (includes concealed roof space, attic)	148	1.9	2,771,941	3.5
Unclassified	190	2.5	4,347,707	5.5
Unknown or not applicable	2,998	39.8	10,328,881	13.1
Totals	7,523	100.0	78,746,492	100.0
Extent of damage—				
Confined to object of origin	1,163	15.4	2,132,086	2.7
Confined to part of room/area of origin	1,000	13.2	1,352,367	1.7
Confined to room of origin	399	5.3	1,154,920	1.4
Confined to floor area of origin	479	6.3	3,453,391	4.3
Confined to building of origin	1,459	19.3	49,808,518	63.2
Extended beyond building of origin	284	3.7	9,177,633	11.6
Confined to roof	46	.6	106,561	.1
Unclassified	127	1.6	4,683,390	5.9
Unknown or not applicable	2,566	34.1	6,877,626	8.7
Totals	7,523	100.0	78,746,492	100.0

[1] Similar information is available for groups of specific property classifications as listed on page 16—Summary of Fire Losses by Property Classifications.

Fire Loss Statistics for All Fires,[1] *1977*—Continued

	Incidents	Per Cent of Incidents	Loss	Per Cent of Loss
Area of origin—			$	
Means of egress	181	2.4	1,507,815	1.9
Assembly area—				
Lounge, living-room	566	7.5	5,241,107	6.6
Others	71	.9	2,563,334	3.2
Function area—				
Sleeping	699	9.2	5,184,965	6.5
Kitchen	719	9.5	4,952,695	6.2
Laundry	83	1.1	615,597	.7
Others	509	6.7	14,422,234	18.3
Storage area inside building	744	9.8	13,672,451	17.3
Service facilities—				
Chimney, flue	84	1.1	1,323,953	1.6
Others	65	.8	1,166,107	1.4
Service and equipment area	335	4.4	10,588,155	13.4
Structural area	458	6.0	5,864,624	7.4
Vehicle—				
Engine area	845	11.2	2,155,030	2.7
Fuel area	254	3.3	449,854	.5
Passenger area	350	4.6	469,460	.5
Others	548	7.2	2,901,590	3.6
Outside area	669	8.8	4,464,189	5.6
Unknown	343	4.5	1,203,332	1.5
Totals	7,523	100.0	78,746,492	100.0
Source of ignition—				
Heating equipment	533	7.0	6,986,285	8.8
Cooking equipment	566	7.5	2,101,485	2.6
Smokers' material	1,019	13.5	5,089,156	6.4
Electrical distribution equipment	734	9.7	7,502,611	9.5
Electrical appliances	327	4.3	8,792,619	11.1
Other appliances	722	9.5	1,626,747	2.0
Open flames	1,146	15.2	10,859,355	13.7
Exposure	261	3.4	3,355,312	4.2
Miscellaneous	1,966	26.1	31,397,849	39.8
Unknown	249	3.3	1,035,073	1.3
Totals	7,523	100.0	78,746,492	100.0
Fuel or energy—				
Coal, wood	1,344	17.8	12,147,633	15.4
Fuel oil	190	2.5	3,132,036	3.9
Gasoline	1,085	14.4	5,522,485	7.0
Natural gas	113	1.5	668,432	.8
Propane	203	2.6	2,412,888	3.0
Smokers' material	997	13.2	4,716,035	5.9
Electricity	1,385	18.4	11,205,606	14.2
Lighting	6	------	39,464	------
Unclassified	568	7.5	6,884,582	8.7
Unknown or not applicable	1,632	21.6	32,017,331	40.6
Totals	7,523	100.0	78,746,492	100.0
Form of heat—				
Spark—				
Ember	241	3.2	3,052,011	3.8
Electrical	1,117	14.8	10,216,586	12.9
Static electrical	43	.5	354,005	.4
Direct flame	1,646	21.8	13,579,630	17.2
Friction heat	73	.9	340,559	.4
Hot object, conduction or radiation	1,289	17.1	7,418,674	9.4
Spontaneous ignition (not incompatable chemicals)	81	1.0	1,229,906	1.5
Heat from smokers' material	861	11.4	4,646,082	5.9
Unclassified	215	2.8	2,464,931	3.1
Unknown or not applicable	1,957	26.0	35,444,108	45.0
Totals	7,523	100.0	78,746,492	100.0

[1] Similar information is available for groups of specific property classifications as listed on page 16—Summary of Fire Losses by Property Classifications.

Fire Loss Statistics for All Fires,[1] *1977*—Continued

	Incidents	Per Cent of Incidents	Loss	Loss Per Cent of
Material first ignited—			$	
Structural components	1,070	14.2	14,842,493	18.8
Furniture, furnishings	1,126	14.9	9,143,568	11.6
Clothing, textiles	294	3.9	1,250,035	1.5
Wood, paper	1,070	14.2	12,297,783	15.6
Flammable liquids	1,474	19.5	8,795,109	11.1
Flammable gases	191	2.5	1,985,797	2.5
Chemicals	107	1.4	629,985	.8
Agricultural, forestry products	189	2.5	1,332,059	1.6
Miscellaneous	2,002	26.6	28,469,663	36.1
Totals	7,523	100.0	78,746,492	100.0
Act or omission—				
Incendiary	1,652	21.9	21,911,159	27.8
Misuse of source of ignition	1,180	15.6	8,280,696	10.5
Misuse of material ignited	441	5.8	3,124,861	3.9
Mechanical or electrical failure	1,883	25.0	14,870,830	18.8
Construction deficiency	210	2.7	2,340,576	2.9
Misuse of equipment	83	1.1	525,599	.6
Human failing	767	10.1	4,494,356	5.7
Vehicle accident	102	1.3	720,805	.9
Miscellaneous	968	12.8	21,633,886	27.4
Unknown	237	3.1	843,724	1.0
Totals	7,523	100.0	78,746,492	100.0

[1] Similar information is available for groups of specific property classifications as listed on page 16--Summary of Fire Losses by Property Classifications.

Summary of Fire Losses by Property Classifications, 1977

Uniform Reporting Manual Codes	Property Classifications	Incidents	Per Cent of Total Incidents	Loss	Per Cent of Total Loss	Fatalities	Per Cent of Total Fatalities	Injured	Per Cent of Total Injured
	Assembly—			$					
131–139	Educational	109	1.4	2,497,295	3.2	.....	.....	1	.....
172–173	Nightclubs, taverns	14	.....	849,708	1.1	.....	.....	.....	.....
171, 174, 179	Restaurants, eating establishments	74	.....	1,326,559	1.7	1	.....	8	2.1
111–129 141–169 181–199	Others	86	1.1	1,648,780	2.1	.....	.....	5	1.3
	Institutional—								
221–229	Home for aged	15	.....	15,420	.....	2	.....	.....	.....
231–249	Hospital, day centre, home	45	.....	69,480	.....	4	4.3	5	1.3
211–219, 299	Others	15	.....	14,493	.....	.....	.....	.....	.....
	Residential—								
311–319	One- and two-family dwellings	2,221	29.5	21,216,593	26.9	46	48.9	156	41.5
321–329	Apartments	592	7.9	3,276,147	4.2	10	10.6	67	17.8
331–359	Hotels, motels, rooming-houses	264	3.5	4,923,117	6.3	7	7.4	9	2.4
361–369	Dormitory, bunkhouse	14	.....	186,235	.....	1	.....	1	.....
371, 375	Mobile home, mobile camp	133	1.8	1,423,588	1.8	6	6.4	5	1.3
372–374	Recreation vehicle	75	1.0	355,376	.....	.....	.....	7	1.9
376, 379, 399	Others	47	.....	212,215	.....	1	.....	1	.....
400–499	Business and personal service	56	.....	1,362,195	1.7	.....	.....	6	1.6
500–599	Mercantile	222	3.0	6,537,946	8.3	1	.....	14	3.7
600–699	Industrial manufacturing	201	2.7	11,551,473	14.7	1	.....	16	4.3
700–799	Industrial storage	378	5.0	10,097,341	12.8	4	4.3	26	6.9
811–829	Outdoor property, piers, wharves	325	4.3	78,963	.....	3	.....	2	.....
841–849	Watercraft	76	1.0	2,333,467	3.0	2	.....	5	1.3
851–859	Rail transport and equipment	17	.....	71,035	.....	.....	.....	1	.....
861	Automobile	1,393	18.5	1,145,122	1.5	1	.....	13	3.5
862–869, 881–889	Other ground transport and special vehicles	613	8.1	2,976,011	3.8	2	.....	15	4.0
871–879	Aircraft	1	.....	10,000	.....	.....	.....	.....	.....
Remainder	Others, miscellaneous	537	7.1	4,567,933	5.8	2	.....	13	3.5
	Totals	7,523	.....	78,746,492	.....	94	.....	376	.....

Fire Losses of $250,000 and Over, 1977

Date	Municipality	Occupancy	Cause	Loss
				$
01-12	Prince Rupert County	Museum	Miscellaneous act or omission[1]	615,000
01-28	North Vancouver	Senior high school	Arson or other fires[1]	1,500,000
01-08	Kamloops	Newspaper, magazine, printing and publishing	Human failing[1]	600,000
01-17	Fort Nelson	Motel, over 20 units	Misuse of source of ignition[1]	305,276
02-24	Cranbrook	Motor-vehicle repairs	Torch too close	884,918
03-21	Port Moody	Non self-propelled vessel	Human failing[1]	250,000
03-15	Port Hardy	Motor-vehicle and trailer sales	Mischief, vandalism (no charges laid)	400,000
03-30	Port Hardy	Apartment, over 20 units with or without business	Asleep	330,000
03-25	Lillooet	Hardware store	Miscellaneous act or omission[1]	275,000
04-26	Surrey	Hotel, year-round use	Miscellaneous act or omission[1]	641,000
04-09	Nanaimo County	Commercial fishing vessel	Miscellaneous act or omission[1]	300,000
04-12	Williams Lake	Hotel, year-round use	Electrical short circuit	260,000
04-26	North Cowichan	Hotel, year-round use	Incendiarism[2]	318,204
04-03	North Vancouver	Radio, radar site	Incendiarism[2]	2,500,200
05-22	Vernon	Hotel, year-round use	Criminal offence	914,578
05-19	Victoria	Night club	Electrical short circuit	267,000
05-08	Yale County	Lodge, seasonal use, in season	Mechanical and electrical failure[1]	320,000
05-07	West Vancouver	Drug store	Criminal offence	335,000
05-17	Richmond	Paper and paper products	Electrical short circuit	517,000
06-05	Burnaby	Upholstered furniture, bedding	Incendiarism[2]	250,000
06-29	Penticton	Sawmill, planing-mill	Mechanical and electrical failure[1]	750,000
06-29	Nanaimo County	Non self-propelled vessel	Miscellaneous act or omission[1]	250,000
06-08	Cariboo County	Sawmill, planing-mill	Miscellaneous act or omission[1]	250,000
06-30	City of Fort St. John	Market, grocery store	Mechanical and electrical failure[1]	650,000
07-29	Cariboo County	Electric light and power generating plant	Miscellaneous act or omission[1]	250,000
07-08	Westminster County	Elementary school	Criminal offence	259,864
08-08	Victoria	Fibre products	Incendiarism[2]	3,549,000
08-13	Port Coquitlam	Basic metal products	Arson or other fires[1]	374,000
08-20	Maple Ridge	Motor-vehicle manufacturing and assembly	Arson or other fires[1]	306,093
08-22	Vancouver	Canning, preserving of fish, sea foods	Miscellaneous act or omission[1]	284,000
08-25	Vancouver	General warehouse	Arson or other fires[1]	310,000
08-21	Victoria	Civic, Federal or Provincial Government office	Lack of maintenance	546,475
09-07	Nanaimo	Flammable liquid tanks	Criminal offence	1,500,000
09-07	Nanaimo	Flammable liquid tanks (exposure)	Miscellaneous act or omission[1]	670,000
10-29	Victoria	Market, grocery store	Criminal offence	255,075
10-03	Cariboo County	Sawmill, planing-mill	Mechanical and electrical failure[1]	450,000
11-15	Kelowna	Dwelling, year-round use (1-family	Construction design or installation deficiency[1]	705,268
11-30	Cariboo County	Rubber, rubber products	Electrical short circuit	400,000
11-19	Fort Nelson	Sawmill, planing-mill	Miscellaneous act or omission[1]	4,802,500
12-20	Port Alberni	Motor-vehicle and trailer sales	Human failing[1]	320,000
12-23	Kootenay County	Sawmill, planing-mill	Electrical short circuit	750,000

[1] Unclassified or unknown. [2] Suspected incendiarism (no charges laid).

Causes of Fires Resulting in Death, 1977

Cause	Men	Women	Children	Total
Careless use of smoking materials	21	11	2	34
Inflammable liquids (careless use, spills)	7	1	2	10
Arson	3	----	4	7
Woodburning equipment (improper use or installation)	2	1	2	5
Suicide	2	1	----	3
Clothing accidentally catching fire	2	1	----	3
Vehicle accident	2	----	1	3
Oil stove	----	1	1	2
Children playing with matches	----	1	1	2
Propane leak	----	1	----	1
Electrical	1	----	----	1
Others	2	----	1	3
Undetermined	9	7	4	20
Totals	51	25	18	94

Fire Casualties by Month, 1977

Month	Injuries			Deaths		
	Male	Female	Total	Male	Female	Total
January	9	5	14	6	1	7
February	19	10	29	3	2	5
March	26	7	33	3	2	5
April	27	13	40	5	2	7
May	33	6	39	2	5	7
June	22	4	26	2	1	3
July	26	9	35	4	4	8
August	22	5	27	3	----	3
September	23	9	32	13	----	13
October	23	9	32	7	2	9
November	29	7	36	4	8	12
December	24	9	33	10	5	15
Totals	283	93	376	62	32	94

Fire Casualties by Day of Week, 1977

Day	Injured	Dead
Sunday	54	19
Monday	42	5
Tuesday	58	9
Wednesday	54	15
Thursday	56	10
Friday	53	8
Saturday	59	28
Totals	376	94

Fire Casualties by Age, 1977

Age	Injured	Dead
Unknown	11	0
Under 2 years	2	3
2–10 years	16	13
11–18 years	26	9
19–70 years	313	59
Over 70 years	8	10
Totals	376	94

Circumstances Contributing to Fire Casualties, 1977

	Deaths	Injuries
Condition of casualty—		
Asleep at time of fire	31	75
Bedridden or other handicap	3	5
Impairment by alcohol	12	15
Impairment by drugs	1	—
Under restraint or detention	—	1
Too young to act	6	8
Senile	2	—
Left unattended (children)	2	1
Unclassified	15	115
Unknown or not applicable	22	156
Totals	94	376

	Deaths	Injuries
Action of casualty—		
Injured while attempting to escape	10	67
Overexertion or heart attack	2	—
Volunteer entered—		
Remained for rescue purpose	2	21
Remained for fire-fighting	3	119
Remained to save property	1	10
Loss of judgment or panic	12	15
Received delayed warning	10	11
Unclassified	24	82
Unknown or not applicable	30	51
Totals	94	376

	Deaths	Injuries
Ignition of clothing or other fabrics—		
Outer clothing	15	46
Sleepwear	13	15
Underclothing	1	1
Bedding or linen	3	14
Mattress or pillow	2	4
Upholstered furniture	3	3
Unclassified	6	5
Unknown or not applicable	51	288
Totals	94	376

	Deaths	Injuries
Type of fabric or material ignited—		
Cotton	12	28
Wool	2	4
Other natural fibre	1	—
Rayon (viscose)	—	1
Other synthetic fibre	4	25
Mixed fibres	3	7
Rubber	—	1
Plastic foam	—	2
Unclassified	3	6
Unknown or not applicable	69	302
Totals	94	376

	Deaths	Injuries
Cause of failure to escape—		
Trapped—		
Vertical spread of fire/smoke	9	3
Horizontal spread of fire/smoke	22	7
High flame spread—combustible interior finish	2	4
Building collapse	—	1
Falling debris	—	1
Explosion	5	26
Exit blocked or obstructed by fire	5	10
Outdoor fire	2	2
Unclassified	26	61
Unknown or not applicable	23	261
Totals	94	376

Fire Crime Statistics, 1977

	Motive Unknown	Insurance Fraud	Fraud, General	Not Applicable	Revenge	Cover Crime	Mischief	Mental	Pyromaniac	Total
Incendiary, suspected or known—										
Provincial totals	1,088	13	1	1	23	5	578	31	1	1,741
Time—										
0001–0800	529	6	1	—	10	2	141	11	1	701
0801–1600	160	5	—	1	4	1	161	11	—	343
1601–0000	399	2	—	—	9	2	276	9	—	697
Property—										
Assembly	105	—	1	—	—	1	76	1	—	184
Institutional	8	—	—	—	4	—	1	5	—	18
Residential	365	6	—	1	14	2	109	20	—	517
Office	13	—	—	—	—	—	8	1	—	22
Mercantile	74	—	—	—	—	—	40	—	—	114
Manufacturing	23	—	—	—	—	1	11	—	—	35
Storage	103	—	—	—	1	—	65	—	1	170
Vehicles, outside areas	371	7	—	—	4	1	231	4	—	618
Miscellaneous	24	—	—	—	—	—	35	—	—	59
Incendiary method—										
Unknown	530	6	—	—	7	2	261	8	—	814
Flammable liquids	190	5	—	1	4	—	51	4	—	255
Indendiary devices	2	—	—	—	—	—	—	—	—	2
Matches and combustibles	357	1	1	—	10	3	239	18	1	630
Other	9	1	—	—	2	—	27	1	—	40
Not applicable	—	—	—	—	—	—	—	—	—	—
Persons involved—										
Unknown	946	—	—	—	4	5	498	—	1	1,454
Adult male	68	11	1	1	9	—	7	18	—	115
Adult female	28	2	—	—	8	—	—	11	—	49
Juvenile male	43	—	—	—	1	—	71	2	—	117
Juvenile female	3	—	—	—	1	—	2	—	—	6
Persons charged—										
Adult male	55	7	1	1	8	—	6	5	—	83
Adult female	26	2	—	—	1	—	—	3	—	32
Juvenile male	29	—	—	—	1	—	19	1	—	50
Juvenile female	3	—	—	—	—	—	—	—	—	3
Total persons charged	113	9	1	1	10	—	25	9	—	168
Offences cleared—										
Charge	112	9	1	1	10	—	25	9	—	167
Other	2	—	—	—	2	—	21	11	—	36
Not cleared	974	4	—	—	11	5	532	11	1	1,538
Disposition of charge—										
Convictions	75	1	—	—	2	—	9	—	—	87
Dismissals	1	—	—	—	1	—	—	—	—	2
Pending	86	10	3	1	8	—	16	6	—	130
Withdrawn	2	1	—	—	—	—	—	—	—	3
Stay of proceedings	8	1	—	—	1	—	1	—	—	11
Committed	1	—	—	—	—	—	—	3	—	4
Authority for charge—										
Criminal Code—										
Sect. 387	26	—	—	—	1	—	19	—	—	46
Sec. 389 (1)	56	6	1	—	7	—	6	8	—	84
Sec. 389 (2)	2	3	—	—	—	—	—	—	—	5
Sec. 390	10	1	—	—	2	—	—	1	—	14
Sec. 392 (1)	2	—	—	—	—	—	1	—	—	3
Fire Marshal Act	—	—	—	—	—	—	—	—	—	—
Other	77	3	2	1	2	—	—	—	—	85

Inspections and Orders by Local Assistants to the Fire Marshal, 1977

CITY MUNICIPALITIES (33)

	Inspections	Orders		Inspections	Orders
Armstrong	----	----	Nelson	300	----
Chilliwack	242	----	New Westminster	6,031	----
Courtenay	----	----	North Vancouver	3,573	191
Cranbrook	1,857	9	Penticton	1,958	1
Dawson Creek	391	----	Port Alberni	910	14
Duncan	101	4	Port Coquitlam	----	----
Enderby	----	----	Port Moody	346	----
Fernie	----	----	Prince George	27	1
Grand Forks	1	----	Prince Rupert	----	----
Greenwood	----	----	Revelstoke	388	----
Kamloops	----	----	Rossland	343	3
Kelowna	----	----	Trail	71	----
Kimberley	530	----	Vancouver	30,488	408
Langley	907	115	Vernon	1,754	----
Nanaimo	1,900	----	Victoria	8,776	2
Fort St. John	411	2	White Rock	406	----
Castlegar	10	----	Totals	61,721	750

DISTRICT MUNICIPALITIES (37)

Abbotsford	----	----	North Saanich	----	----
Burnaby	1,232	115	North Vancouver	----	----
Campbell River	----	----	Oak Bay	3,069	128
Central Saanich	100	1	Peachland	----	----
Chilliwhack	597	----	Pitt Meadows	----	----
Coldstream	10	----	Port Hardy	----	----
Coquitlam	400	----	Powell River	----	----
Delta	1,234	730	Richmond	3,127	779
Esquimalt	156	----	Saanich	5,734	12
Fraser Mills	----	----	Salmon Arm	238	----
Houston	----	----	Spallumcheen	----	----
Hudson Hope	----	----	Sparwood	3	----
Kent	----	----	Squamish	----	----
Kitimat	248	1	Stewart	36	----
Mackenzie	----	----	Summerland	356	----
Maple Ridge	131	----	Surrey	5,572	----
Matsqui	----	----	Terrace	776	2
Mission	398	----	West Vancouver	1,148	----
North Cowichan	337	----	Totals	24,902	1,768

Inspections and Orders by Local Assistants to the Fire Marshal, 1977—Continued

VILLAGE MUNICIPALITIES (60)

	Inspections	Orders		Inspections	Orders
Alert Bay	----	----	Nakusp	----	----
Ashcroft	----	----	New Denver	----	----
Burns Lake	----	----	Oliver	----	----
Cache Creek	----	----	100 Mile House	----	----
Chase	----	----	Osoyoos	----	----
Chetwynd	----	----	Parksville	144	----
Clinton	----	----	Port Alice	10	----
Cumberland	----	----	Pemberton	----	----
Elkford	----	----	Port Edward	----	----
Fort Nelson	----	----	Port McNeill	----	----
Fort St. James	----	----	Pouce Coupe	----	----
Fraser Lake	----	----	Princeton	----	----
Fruitvale	----	----	Qualicum Beach	----	----
Gibsons	----	----	Salmo	----	----
Gold River	----	----	Sayward	----	----
Granisle	13	----	Sechelt	----	----
Harrison Hot Springs	----	----	Silverton	----	----
Hazelton	----	----	Slocan	----	----
Invermere	----	----	South Ft. George	----	----
Kaslo	----	----	Tahsis	----	----
Keremeos	----	----	Taylor	----	----
Lake Cowichan	----	----	Telkwa	----	----
Lillooet	----	----	Tofino	5	----
Lions Bay	----	----	Ucluelet	----	----
Logan Lake	17	----	Valemount	----	----
Lumby	----	----	Vanderhoof	----	----
Lytton	----	----	Warfield	12	----
McBride	----	----	Zeballos	----	----
Masset	85	----	Port Clements	1	----
Midway	12	----	Totals	299	----
Montrose	----	----			

TOWN MUNICIPALITIES (10)

Comox	68	----	Quesnel	----	----
Creston	----	----	Sidney	----	----
Golden	----	----	Smithers	----	----
Hope	----	----	Williams Lake	----	----
Ladysmith	9	----	Totals	301	----
Merritt	224	----			

FIRE DISTRICTS (15)

Cariboo, County of	----	----	Sooke	----	----
Colwood	----	----	University Area	969	----
Ioco	----	----	Vancouver, County of	10	3
Kootenay, County of	6	----	Victoria, County of	268	5
Langford	----	----	View Royal	----	----
Nanaimo, County of	12	2	Westminster, County of	----	----
Ocean Falls	313	----	Yale, County of	256	1
Prince Rupert, County of	3	----	Totals	1,837	11

	Inspections	Orders
Grand totals, 1977	89,060	2,529
Grand totals, 1976	90,322	1,951
Grand totals, 1975	81,027	1,920
Grand totals, 1974	91,418	1,544
Grand totals, 1973	87,266	1,686
Grand totals, 1972	63,940	888
Grand totals, 1971	84,104	588
Grand totals, 1970	81,056	92
Grand totals, 1969	77,927	197
Grand totals, 1968	92,074	172
Grand totals, 1967	85,969	529

10-Year Property Fire Loss Comparison, 1968–77

	1968	1969	1970	1971	1972
(1) Number of fires	7,010	7,602	7,546	7,454	8,120
(2) Loss	$21,116,871	$27,514,446	$34,561,074	$34,716,758	$37,389,116
(3) Loss per fire (3) ÷ (2)	$3,012	$3,619	$4,580	$4,657	$4,605
(4) Population (thousands)*	2,003.0	2,060.0	2,128.0	2,784.6	2,241.4
(5) *Per capita* fires [(2) ÷ (5)] × 1,000	3.50	3.69	3.55	3.41	3.62
(6) *Per capita* loss (3) ÷ (5)	$10.54	$13.36	$16.24	$15.89	$16.68
(7) Adjustment Factor (A)†	.799	.851	.912	1.000	1.101
(8) Adjusted *per capita* Loss (A) (7) ÷ (8)	$13.19	$15.70	$17.81	$15.89	$15.15
(9) CPI Adjustment Factor (B)†	.906	.937	.969	1.000	1.040
(10) Adjusted *per capita* loss (B) (7) ÷ (10)	$11.63	$14.26	$16.76	$15.89	$16.04
(11) Fire fatalities	100	87	104	153	100

	1973	1974	1975	1976	1977
(1) Number of fires	7,613	7,526	7,782	7,433	7,523
(2) Loss	$45,693,116	$62,842,182	$66,461,246	$77,566,724	$78,746,492
(3) Loss per fire (3) ÷ (2)	$6,002	$8,350	$8,540	$10,432	$10,467
(4) Population (thousands)*	2,302.4	2,375.7	2,433.2	2,466.6	2,497.6
(5) *Per capita* fires [(2) ÷ (5)] × 1,000	3.31	3.17	3.20	3.01	3.01
(6) *Per capita* loss (3) ÷ (5)	$19.85	$26.45	$27.31	$31.45	$31.53
(7) Adjustment Factor (A)†	1.232	1.347	1.440	1.605	1.74
(8) Adjusted *per capita* Loss (A) (7) ÷ (8)	$16.11	$19.64	$18.97	$19.31	$18.12
(9) CPI Adjustment Factor (B)†	1.110	1.239	1.377	1.510	1.618
(10) Adjusted *per capita* loss (B) (7) ÷ (10)	$17.88	$21.35	$19.84	$20.83	$19.49
(11) Fire fatalities	116	129	129	110	94

* Population statistics were provided by Statistics Canada. The figures for 1971 and 1976 are actual census figures. The others are estimates by Statistics Canada.

† Adjustment Factor: In an effort to get a more realistic picture of losses over the years, some form of adjustment factors were necessary to take inflation into consideration. We chose

(A) the B.C. Residential Building Construction Input Price Index, as provided by the Central Mortgage and Housing Corp., using 1971 as a base of 1.000; and

(B) Consumer Price Index for Vancouver with 1971 = 1.000.

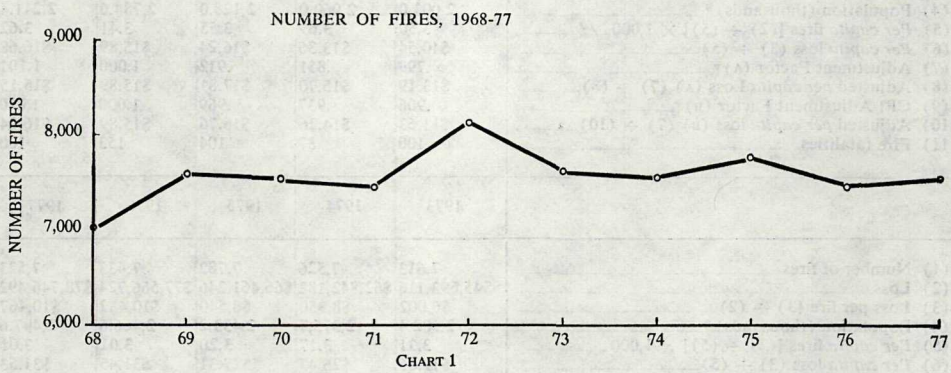

CHART 1

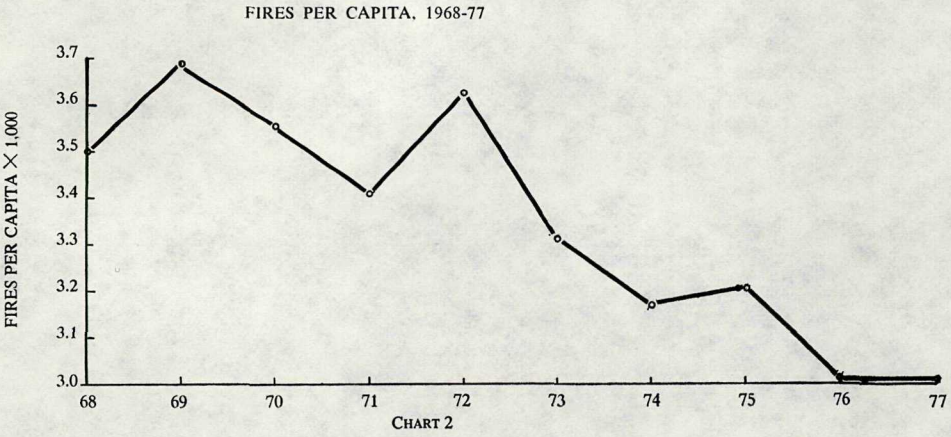

CHART 2

ANNUAL FIRE DOLLAR LOSS, 1968-77

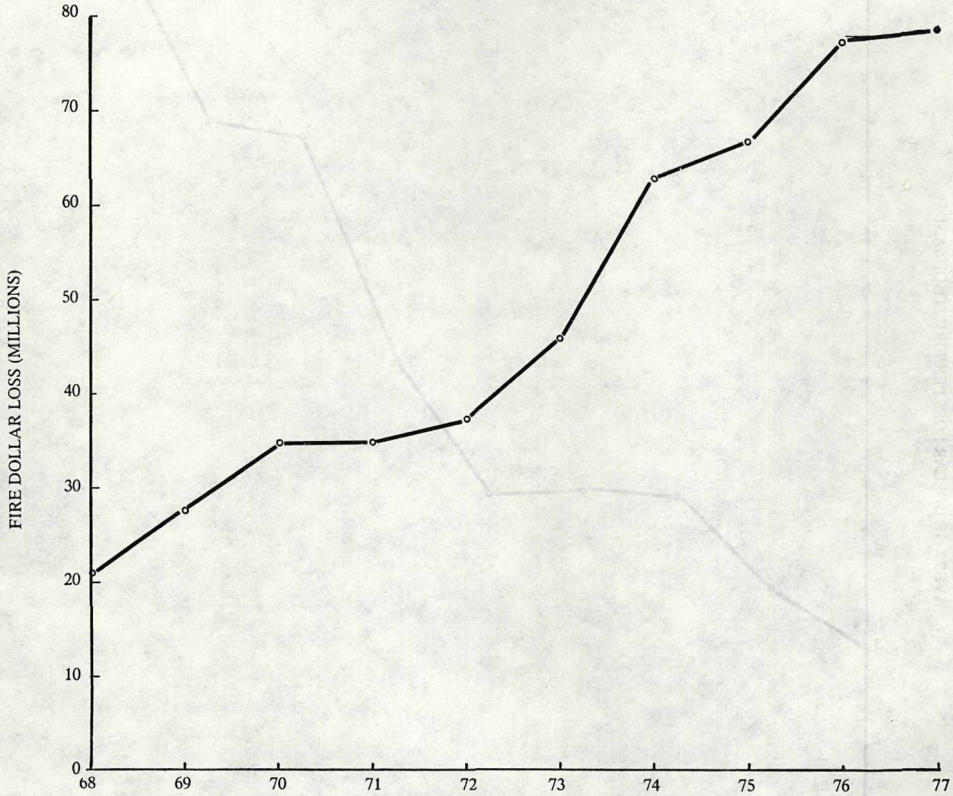

CHART 3

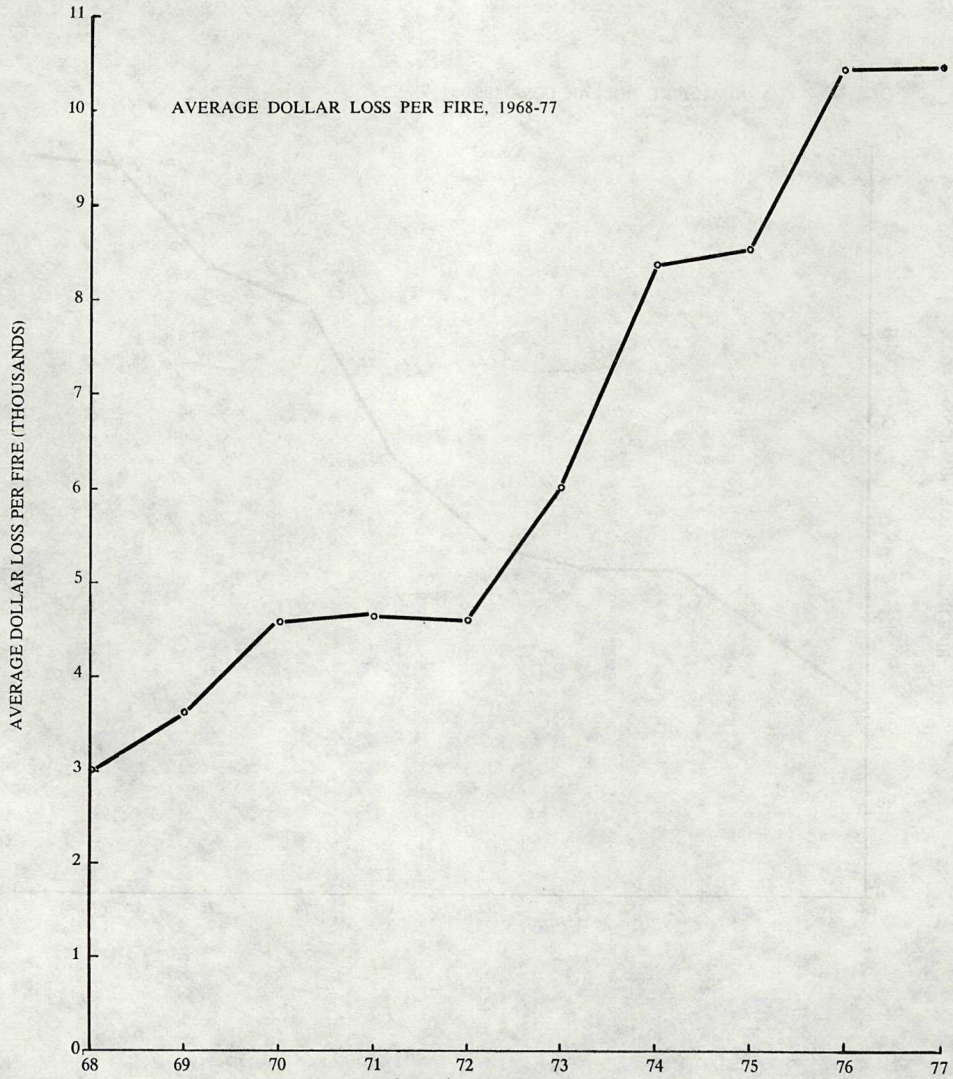
AVERAGE DOLLAR LOSS PER FIRE, 1968-77
AVERAGE DOLLAR LOSS PER FIRE (THOUSANDS)
0
1
2
3
4
5
6
7
8
9
10
11
68
69
70
71
72
73
74
75
76
77

CHART 4

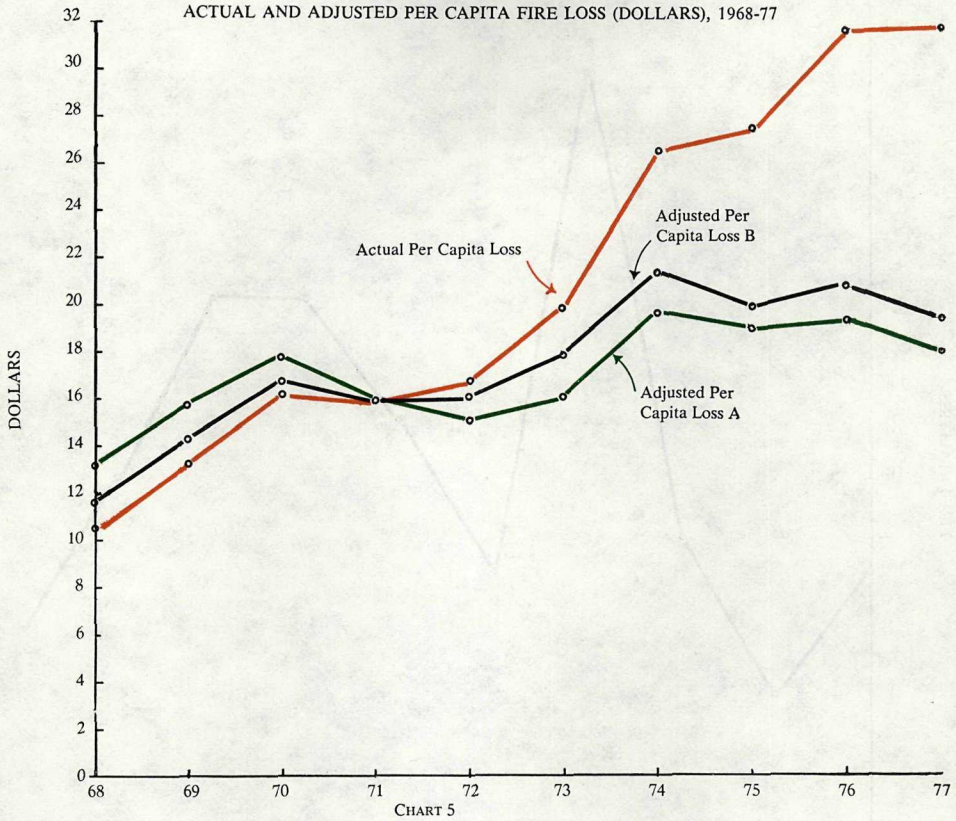

CHART 5

Adjustment Factor: In an effort to get a more realistic picture of losses over the years, some form of adjustment factors were necessary to take inflation into consideration. We chose

(A) the B.C. Residential Building Construction Input Price Index, as provided by the Central Mortgage and Housing Corp., using 1971 as a base of 1,000; and

(B) Consumer Price Index for Vancouver with 1971 = 1,000.

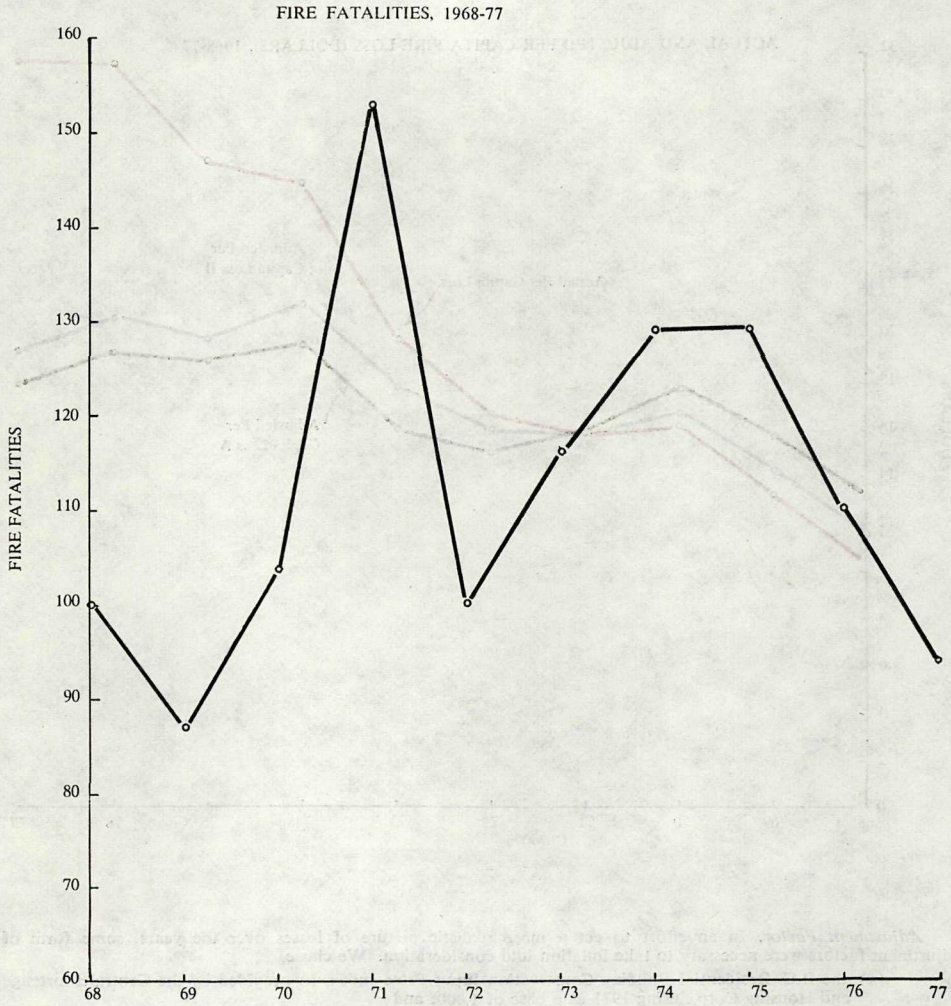

CHART 6

Printed by K. M. MACDONALD, Printer to the Queen's Most Excellent Majesty
in right of the Province of British Columbia.
1978

1,530-478-9320