



NY Telephone Company Fire Survey Follow-up

by Lieutenant Ed Connelly

operated. Most importantly, it was one of the first large-scale fires involving plastics, primarily polyvinyl chloride (PVC).

In 1979, a study was undertaken by Dr. Deborah Wallace of the Public Interest Scientific Consulting Service and published in the *Journal of Combustion Toxicology*. Questionnaires were mailed to 190 firemen who required medical attention at the fire; Officers were not included in the mailing. The purpose of the questionnaires was to determine if there were any long-term health effects from the fire.

The questionnaires were returned by 113 firemen. Dr. Wallace described symptoms ranging from chest congestion to asthma to categorize intermediate and long-term health effects. Sixty percent recalled symptoms that existed six months after the fire until the time of the questionnaires in 1979. The two most serious complaints found were heart trouble and two cases of throat lesions. It was suggested that due to the high prevalence of hoarseness, the men should be checked for throat lesions.

In 1982, another article relating to this fire was published by Dr. Wallace. This article pointed out that of the 700 firefighters at

	Cancer	Respiratory	Cardio	Gastro/Intestinal
On Fire Report	15/141 11%	28/141 20%	24/141 17%	9/141 6%
Not on Fire Report	13/98 13%	9/98 9%	16/98 16%	5/98 5%

Photo by Western Electric Photographic Services (cover of WNYF, First Issue 1975)

Background

The New York Telephone Company fire took place more than 25 years ago on February 27, 1975. There have been many anecdotal stories about the fire and the members who fought it, but only one study conducted that examined the health effects on the members. The description of the fire and events surrounding it were well-documented by Deputy Chief Elmer Chapman in the 3rd/1975 issue of *WNYF* and a book written by Dr. Deborah Wallace titled, *In the Mouth of the Dragon*. (Also, see "Medical Review of the NY Telephone Co. Fire of 1975" and "Iron Men in the Age of Plastic," by Lieutenant Ed Connelly in the 3rd/98 issue of *WNYF*.)

The fire broke out at 0030 hours and burned for 16 hours before being placed under control at 1646 hours. The fire was unique for a number of reasons. It was fought by 700 firefighters, 239 of whom required medical leave. More than 70 units

Table 2--Types of Cancers Reported by Members Who Were on the Fire Report

Date of Birth	Company	Smoking Habits	Type	Time in the Building
1930	R-1	Never	Melanoma	9 hours
1938*	Bn-6	Never	Abdominal	9 hours
1945	L-11	x 1 pack/15 years	Pancreas	3-4 hours
1934	L-11	Never	Bladder	1/2 hour inside + ? outside
1928	L-13	s 1 pack/20 years	Prostate	8 hours
1937	R-2	Never	Kidney	11 hours
1920	E-16	Never	Prostate	1.5 hours
1925**	E-5	x 1/2 pack/14 years	Prostate	n/a
1925**	E-5	x 1/2 pack/14 years	Melanoma	n/a
1937	R-2	Never	Prostate	6-7 hours
1920	L-6	x 1 pack/10 years	Prostate	3 hours
1937	E-9	x 1 pack/4 years	Prostate	1/2 hour/mask share
1938	E-28	x 1/2 pack/5 years	Melanoma ('96)	1 hour
1940	L-6	s 2 packs/23 years	Squamous Vocal Cord	2 hours
1939	L-18	x 1 pack/4 years	Larynx	1/2 hour

* detected before 1975
** same person

s = smoker
x = ex-smoker

the fire, six had developed cancer. Two cases proved fatal in 1980 and 1982, respectively. At about this time, the FDNY--with the help of union delegates--began to make notations regarding who was at the fire. From this time forward, results of the Telephone Company fire began to take on their own character and spiraled as more anecdotal stories supported the suggestions made earlier.

Method

In 1998, Fire Commissioner Thomas Von Essen agreed to revisit this fire in view of the fact that some scientific writing had been done in 1981 and there seemed to be a great deal of uncertainty concerning it. Starting with the Fire Report, 239 names of members who were at the fire and reported sick were obtained. These firefighters were generally among the first-due units and received the greatest exposures. As stated earlier, the Department had begun to accumulate names in the early 1980s and were able to supply another 180 names above the original 239. By reaching out to some of the retiree groups, a handful of additional names was added.

The original plan of the study was to look only at mortality from cancer, but was expanded to include cardiac, respiratory and gastrointestinal disorders. The main focus of the study was on the firefighters who reported sick because it was believed that they received the greatest exposure.

Of the 239, it was determined that 180 were retired and receiving a pension. Forty were active and working in the field. The remaining 18 were deceased and one had been terminated. The cause of death was determined by examination of death certificates, which revealed that seven had died from cancer, nine from cardiac-related disease, one from Parkinson's disease and one line-of-duty death.

The retired and active members were sent questionnaires to determine the "prevalence" of disease among this group. Questions were asked regarding their health condition, duties at the fire, time spent in the fire building, smoking habits and years of service. The response was about 66 percent--superior to that of 1981--and this time included the officers who did not receive questionnaires in 1981. The same questionnaires were sent to the members who did not report sick with comparable results.

The group that did not report sick actually reported a higher percentage of members with cancer. However, the reports of respiratory ailments among those who reported sick were considerably more. The predominant type of cancer among the retirees was prostate cancer (6) and melanoma (3). The American Cancer Society reports that the number of cases of prostate cancer has doubled since 1990 due to the PSA test and that when discovered early, it has a five-year survival rate of 95 percent.

Melanoma is a potentially fatal skin cancer that is closely associated with exposure to ultraviolet light (sunlight). When detected early, it has an 88 percent survival rate. The types of cancers reported on the questionnaires from members *not* on the fire report mirrored those from the fire report with a slightly higher

Date of Birth	Company	Smoking Habits	Diagnosis	Work Time
1935	E-14	x 1 pack/20 years	Fluttering	1 hour in; 5-6 hours out
1934	SQ-3	x 1 pack/20 years	Angioplasty	5-7 hours in/8 tanks
1939	R-2	x 1/2 pack/?	Art. Fib.	6 hours
1936	R-1	x 2 packs/40 years	Open Heart ('93)	7 hours
1928	E-14	x 1.5 packs/28 years	Art. Fib.	3 hours
1937	Bn-25 Aide	x 1.5 packs/30 years	Undefined	5-6 hours
1935	Bn-2	x 1.5 packs/25 years	Blockage	6 hours
1925	Div. 1	x 1 pack/15 years	Art. Fib.	15 minutes
1943	E-5 Proby	x 1 pack/10 years	Blocked Artery	1/2 hour in; 9 hours out
1932	L-12	x 1.5 packs/10 years	Undefined	10 hours
1943	E-33	x 1/2 pack/32 years	Undefined	
			High BP	10 hours
1931	E-33	x 2 packs/20 years	Heart Disease	7 hours
1926	E-18	x 2 packs/10 years	Undefined	1 hour
1941	R-3	x 1/2 pack/10 years	Undefined	
			High BP	2.5 hours
1938	R-2	x 1 pack/20 years	Undefined	3-5 hours
1938	L-6	x 2 packs/20 years	Undefined	4-5 hours
1929	E-5	x ?	Heart/High BP	2-3 hours
1925	Amb. 1	2.5 packs/38 years	Condition/ High BP	xxx
1945	E-212	Never	Arterial Disease	4-5 hours
1938	L-35	Never	Heart Attack ('92)	9 hours
1925	MO	Never	Tachycardia	14 hours/outside ?
1931	L-13	Never	Blocked Artery	
			90%	None
1933	R-1	Never	Heart/High BP	10.5 hours
1941	R-2	Never	Heart Disease	6-10 hours (10 tanks)

percentage.

Another aspect of the survey examined cardiac-related illnesses. These complaints were varied, but showed one strong correlation. Individuals who were smokers or ex-smokers had a much greater incidence of disease. While there are many risk factors related to heart disease, Table 3 and the accompanying Chart 1 show a clear disadvantage to firefighters who smoke.

Conclusions

When viewing these data, bear in mind that the average age of this group was 62.5 years in 1998. The oldest was 83 and the youngest was 48. This study is a microcosm in time and these numbers will change as the population ages. While it is not complete, it is four times larger than the study done in 1981 and can be only as complete as the participants allow it to be.

Making sense out of the numbers requires that they be put into perspective. Cancer generally has a latency period of 20 to 30

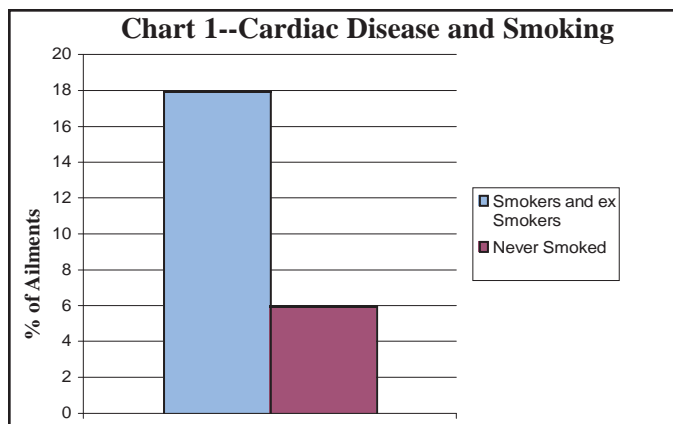


Table 4--Companies on the Fire Report

Battalions	Ladders	Engines	Special Ops.	Other
Bn-2	L-3	E-1 E-24	R-1	Div. 1
Bn-6	L-6	E-3 E-26	R-2	Sat. 1
Bn-7	L-7	E-5 E-27	R-3	MBC
Bn-10	L-9	E-9 E-28	SQ-2	Amb. 1
Bn-25	L-11	E-10 E-33	SQ-3	FCU
Bn-45	L-12	E-14 E-34		Pandor
	L-13	E-16 E-55		Training
	L-18	E-17 E-212		F Cont.
	L-20	E-18 E-230		Med. Off.
	L-35	E-23 E-279		

Table 5--Companies not on the Fire Report

Engines	Ladders	Other
E-2	L-1	Bn-11
E-7	L-2	Bn-32
E-15	L-10	Bn-36
E-35	L-24	Bn-40
E-36	L-104	Div. 3
E-54	L-106	Div. 16
E-65	L-138	Field Comm.
E-211	L-148	COD
E-224		Searchlight
E-240		
E-287		

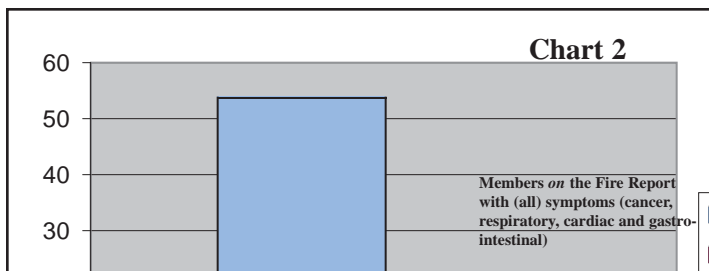
years. With regard to mortality, the American Cancer Society states that about 22 percent of Americans will die from cancer. When looking specifically at prostate cancer, the American Cancer Society states that between the ages of 60 and 79, one in seven men will develop it.

Research on the combustion products of polyvinyl chloride shows that about 60 percent of hydrogen chloride, when mixed with bodily fluids, becomes hydrochloric acid. This accounts for the burning sensation in the throat. Another large portion of the by-products is carbon monoxide. The remaining products are vinyl chloride, benzene and phosgene, which are present in lesser amounts.

Difficulties encountered in the analysis were sorting hearsay information from fact and distinguishing specific types of medical conditions. When all the information was analyzed, three factors emerged:

- There seemed to be a concentration of cancers within the first-due units, but it showed no clear pattern.
- Some of the early cancer deaths were of very low probability; that is, they would not be expected to occur in younger men.
- Those individuals who were smokers and ex-smokers suffered greater incidence of long-term illness than those who never smoked. (See Chart 2.)

Twenty-five years later, what lessons can be derived from this fire and how can we learn from this? Is there anything we can do to



prevent this from happening again? First, respiratory protection is mandatory in smoke conditions because you may not know until after the fact what you've been exposed to. Annual medicals, now in place and which include a PSA test for members more than 50 years of age, are mandatory. With regard to record-keeping, software has been

developed that will allow the firefighter's name to be included on the Fire Report if he/she operated at a fire. This software may allow the firefighter to access all fires that he/she operated at during a given time.

The analysis of this fire also points to the need for strengthening the Cancer Bill. One of the issues that became apparent in analyzing the questionnaires is that some members developed cancer after retiring. A latency period of 20 years generally is accepted as the time frame for the development of cancer. This creates a paradox for the retirees. While the retired member may have left the job cancer-free, if he later develops cancer, he receives no additional benefits, even if the exposure may have occurred during employment. It highlights the necessity of extending the Cancer Bill to consider retirees who later may develop the disease.

The Telephone Company fire remains a notable event in our recent Fire Department history. It raised our awareness of exposure to carcinogens in the work place. Certainly, at each fire, there is the potential exposure to PVCs and other chemicals.

The Bureau of Health Services, under the leadership of Commissioner Thomas Von Essen, has developed a regularly scheduled, more comprehensive medical evaluation that includes cancer screening. This article also highlights the very real risk of smoking with increased incidence of cancer, cardiac and respiratory illness.

About the Author...

Lieutenant Ed Connelly is an 18-year veteran of the FDNY, the past five years of which have been with Haz-Mat Company 1. He holds a Masters degree in Occupational Health from Hunter College. Occasionally, he writes for WNYF on hazardous materials topics.



Results			
On the Fire Report			
Questionnaires			
	Sent	Returned	%
Returned			
Deceased 18	xx	xxx	xxxx
Active	40	20	50%
Retired	180	121	67%
Subtotal	220	141	
Not on the Fire Report			
Questionnaires			
	Sent	Returned	%
Returned			
Deceased 7	xx	xxx	xxx
Active	50	21	42%
Retired	117	77	65%
Subtotal	167	98	
New Cases--Never Recorded			
Questionnaires			
	Sent	Returned	%
Returned			
Deceased 4	xx	xxx	
Active	2	0	
Retired	7	7	100%
Total 425			
Totals Identified			
Subtotals	Questionnaires Returned		
29 deceased	xxx		
92 active	41		
304 retired	205		