

Approved: 4-28-92
Date

MINUTES OF THE HOUSE COMMITTEE ON APPROPRIATIONS.

The meeting was called to order by Chairperson George Teagarden at 2:00 p.m. on March 24, 1992 in room 514-S of the Capitol.

All members were present except: Representatives Helgerson, Hochhauser, Pottorff, and Blumenthal. (All excused).

Committee staff present: Ellen Piekalkiewicz, Legislative Research Department
Debra Duncan, Legislative Research Department
Jim Wilson, Revisor of Statutes
Sue Krische, Administrative Aide
Rose Baker, Committee Secretary

Conferees appearing before the committee:

Gloria Timmer, Budget Director

Others attending: See attached list

HB 2972 - State general fund transfer to workers compensation fund eliminated.

Gloria Timmer, Budget Director, presented testimony in support of HB 2972 (Attachment 1) stating that the bill includes language which revises the formula by which the Insurance Commissioner is to impose assessments against all insurance carriers, self insurers and group funded workers compensation pools. The \$4M transfer is no longer significant to the fund.

Ron Todd, Commissioner of Insurance, provided written testimony in support of HB 2972 (Attachment 2).

HB 2598 - KP&F service connected death and disability.

There was committee discussion on HB 2598, and written testimony in support of HB 2598 was provided by Jerry Marlatt, Lobbyist, Kansas State Council of Fire Fighters (Attachment 3).

Meredith Williams, KPERS, explained to the committee that HB 2598 essentially amends the definition of service connected death and disability to include cancer. To amend this definition, KPERS estimates that the SGF would incur a cost of \$44,000 per year and local governments contribution would increase by \$272,000 beginning in calendar year 1993.

Ernie Mosher, League of Kansas Municipalities, presented testimony in opposition to HB 2598. Mr. Mosher suggested that this bill be sent to the retirement study commission.

HB 2970 - KPERS, disability benefits and calculation of 180 day disability period.

Committee discussed HB 2970. Meredith Williams, KPERS, gave a brief description of this bill. He stated that HB 2970 changes the way the 180 day waiting period is counted for purposes of disability determination. The covered member is allowed to accumulate their 180 days of total disability in segments. The intention would be to encourage those members who are disabled and recovering to make an attempt to return to work without being penalized by starting the waiting period over again. One concern is the administrative time that would be needed to keep up-to-date records on those employees who might attempt to return to work during this period of disability.

CONTINUATION SHEET

MINUTES OF THE HOUSE COMMITTEE ON APPROPRIATIONS, room 514-S Statehouse, at 2:00 p.m. on March 24, 1992.

Representative Bill Reardon addressed the committee regarding HB 2970 (Attachment 4). Representative Reardon stated that this amendment is necessary to assure that disabled persons are not penalized for attempting, in good faith, to return to work after being disabled from an injury or sickness.

Anita Larson, Assistant Counsel, Security Benefit Life Insurance Company, provided written testimony in opposition of HB 2970 (Attachment 5). Ms. Larson expressed concern to the committee regarding the cost to evaluate several short periods of disability that eventually total 180 days rather than evaluating one continuous total period of disability. Also, it would be very time consuming to provide evidence that total disability had existed or be able to obtain medical documentation of such total disability.

In response to a question from Representative Patrick, Chairman Teagarden stated that there would be additional administrative work and that the budget division notes that the fiscal impact has not been determined at this time. Representative Turnquist expressed concern as to how disability will actually be determined.

Representative Wisdom moved that HB 2972 be recommended favorably for passage. Seconded by Representative Chronister. Motion carried.

Representative Wisdom moved to accept the minutes dated March 3, 1992, as presented. Seconded by Representative Gatlin. Motion carried.

Meeting adjourned at 3:00 p.m. The next scheduled meeting will be March 25, 1992 at 1:30 p.m. in room 514-S.

STATE OF KANSAS



DIVISION OF THE BUDGET

Room 152-E
State Capitol Building
Topeka, Kansas 66612-1578

JOAN FINNEY, GOVERNOR

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M E M O R A N D U M

TO: House Committee on Appropriations
FROM: Gloria M. Timmer, Director of the Budget
DATE: March 24, 1992
SUBJECT: Testimony on House Bill 2972

Thank you for allowing me to speak briefly on HB 2972 which was requested by the Governor.

The workers' compensation laws currently provide for an annual demand transfer of up to \$4 million from the State General Fund to the Workers' Compensation Fund. This transfer apparently evolved from the "Second Injury Fund" which was totally funded by the State General Fund and existed prior to FY 1982. This State General Fund transfer was intended to provide incentive to employers to hire previously disabled workers through reduction of the employer's total assessment.

The 1982 Legislature abolished this Second Injury Fund and what was known as the old Workmen's Compensation Fund. A new fund, the Workers' Compensation Fund was then created with monies from the abolished funds transferred to it. In addition, the 1982 Legislature limited the State General Fund entitlement for disabled workers to an amount not to exceed \$4 million.

At the time, an amount of up to \$4 million represented a significant portion of the \$6 to \$8 million in total workers' compensation claims paid annually. In recent years, however, payments in claims from this fund have grown to \$21 million in FY 1990, \$24.9 million in FY 1991, an estimated \$36 million in FY 1992, and to an estimated \$39 million in FY 1993. Clearly, the \$4.0 million transfer is no longer significant to the fund.

HA
3-24-92
Attachment 1

The 1991 Legislature amended the workers' compensation law to allow for the \$4 million demand transfer at the beginning of FY 1992 for cash flow purposes only. Language was adopted which required the return of that \$4 million by November 1 of the same fiscal year. Similar action is proposed for FY 1993 with the transfer made back to the State General Fund on October 1, 1992.

House Bill 2972 retains language under KSA 44-566(a) which creates the Workers' Compensation Fund. However, language which currently requires that a \$4 million State General Fund entitlement be transferred to the Workers Compensation Fund each fiscal year is deleted.

Consistent with the elimination of this transfer, the bill includes language which basically revises the formula by which the Insurance Commissioner is to impose assessments against all insurance carriers, self-insurers and group-funded workers compensation pools. The new formula would no longer take into consideration a \$4 million entitlement from the State General Fund.

Other adjustments proposed by HB 2972 include changes in the assessment dates. These were suggested to us by the Insurance Department as minor housekeeping measures.

MEMORANDUM

To: The Honorable George Teagarden, Chairman
House Appropriations Committee

From: Ron Todd
Commissioner of Insurance

Subject: House Bill No. 2972

Date: March 24, 1992

This morning, members of my staff contacted the National Council of Compensation Insurance (NCCI) to find out the effect on workers' compensation insurance rates should the \$4 million transfer from the general fund to the Workers' Compensation Fund be eliminated, as proposed by House Bill No. 2972. The NCCI is the licensed rating organization that represents the approximately 260 insurance companies that write workers' compensation insurance policies in Kansas.

In visiting with the NCCI, we were advised that this year's request for a 31.4% rate increase, which I am currently reviewing, did not contemplate that the \$4 million transfer would be made during FY 1993. The NCCI further indicated that had they assumed that the \$4 million transfer would be made, they would have instead sought a 30.4% increase in workers' compensation insurance rates. Therefore, the effect of eliminating the \$4 million transfer is a 1% increase in workers' compensation rates.

You might also be interested in knowing that eliminating the \$4 million annual transfer will increase the FY 1993 Worker's Compensation Fund assessment rate to insurance carriers and self-insurers by approximately 11%. Some of the larger self-insurers include the State Self-Insurance Fund, Iowa Beef Processors and Beech Aircraft.

NR
3-24-92
Attachment 2

"PROGRESS THROUGH UNITY"

KANSAS STATE COUNCIL OF FIRE FIGHTERS



Affiliated With
INTERNATIONAL ASSOCIATION OF FIRE FIGHTERS • KANSAS STATE FEDERATION OF LABOR • CENTRAL LABOR BODIES

MEMORANDUM

DATE: March 24, 1992
TO: Members of the House Appropriations Committee
FROM: Jerry Marlatt, Lobbyist *JM*
RE: House Bill 2598

We strongly support the favorable passage of House Bill 2598. This bill would simply include cancer as "Service Connected" with regard to a death or any physical or mental disability.

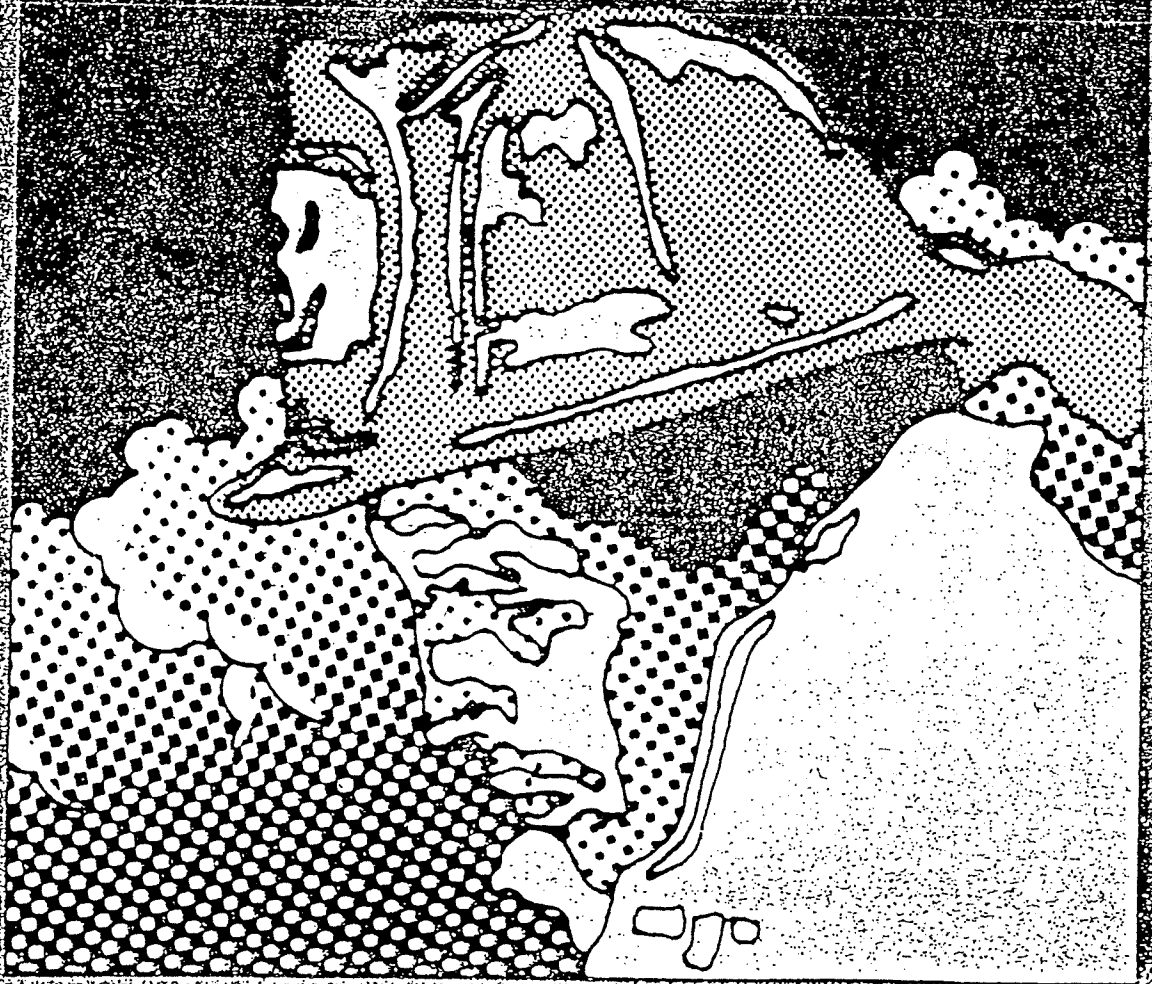
Several mortality studies have been performed on firefighters. When combining these studies, it appears that firefighters have an increased risk (or incidence) of several types of cancer, including cancer of the brain, rectum and colon, skin and leukemia.

Thank you for your consideration of House Bill 2598.

*HA
3-24-92
Attachment 3*

The Register

DEADLY SMOKE



A Special Report

Smoke-eaters are dying from cancer

"Deadly Smoke" is the result of three months of investigation by reporters Chuck Cook and Maria Cone and photographed by Rick Rickman. It was first published in December 1983 as a three-part report.

By Chuck Cook and Maria Cone
The Register

For firefighters, smoke-eating once was a badge of courage. Now it has become a death sentence.

The cancer death rate among firefighters in the United States has doubled in the past 30 years. The disease strikes their lungs, stomachs, brains and prostate glands, leaving the once-strong crippled or dead.

Lung disease strikes them more frequently than black lung strikes miners.

And heart disease disables them 55 percent more often than the people they serve.

The stark bottom line for firefighters today is that their decision to take a job protecting lives and property means that they will live an average of 10 fewer years than other Americans.

Of the 2,435 full-time firefighters in Orange County, 937 of them can expect to die from cancer — 440 more than would die if firefighters died of cancer at the same rate as the U.S. population, according to recent firefighter mortality studies in the United States and Canada.

Firefighters are accustomed to being smoked, baked and burned. They are used to filling their lungs with so much smoke they spend sleepless nights after fires vomiting black phlegm. They don't worry about burned wrists and charred earlobes where the gloves and helmets don't reach.

But they are not accustomed to watching fellow firefighters die of cancer. In the face of it, they are realizing, the badge of courage is bravado.

"When I came on, you weren't a man — you weren't a firefighter — unless you could take a lot of smoke," said county Battalion Chief Chuck Nicola, stationed in Irvine.

"Breathing apparatus wasn't worn. It was a macho thing."

Orange County fire Chief Larry Holms said firefighters can no longer afford to be macho.

"It has been tough to break from the tradition of the smoke-eater to caring for ourselves and our health. Smoke-eating is not only a thing of the past, it's the sign of a fool," he said.

The surge in firefighter deaths and disease parallels the burgeoning use of synthetic materials, especially plastics, in nearly every part of American life: throughout homes and offices, in cars, in nearly every industry.

When synthetics burn, their thick smoke fills a firefighter's face with gases that can kill instantly, burn irreparably or plant the seeds of cancer.

In addition, firefighters must deal more and more with spills of toxic chemicals.

"Two years ago you wouldn't go to a hazardous chemical spill more than once or twice a year. Now we respond to them on almost a daily basis," said Santa Ana Battalion Chief John Mahany.

Scientists and fire-safety officials say firefighters face greater exposure to toxic chemicals than any workers in the nation.

"Love Canal was — and ends," said Gordon Vickery of the Foundation for Fire Safety based in Rosslyn, Va. Love Canal's threat to the public's health supposedly is over, he said. "This goes on forever. People are dying and who knows how those exposures will affect future generations."

Orange County fire Capt. Howard Smith said, "It's only been about a year since we've said, 'Holy smoke, what are we creating?' We have to take responsibility for these chemicals and hazardous materials we are creating."

No one knows the dimensions of the threat to firefighters. About all researchers have determined is that the almost 1.5 million public and private firefighters in the United States are dying from heart and lung diseases and cancer much more frequently than they used to.

Thirty years ago, when synthetic chemicals were not widespread, firefighters had a cancer-death rate nationwide an average 2 percent higher than non-

firefighters. But by 1980, the firefighter cancer-death rate had increased to almost twice that of the general population.

The threat may be even greater, because the average firefighter is younger and stronger than ever before, part of the "super-healthy" work force.

Fewer firefighters smoke cigarettes now and as a group they are more resistant to disease. They undergo stringent physical examinations when they are hired, and most departments require them to stay in top condition.

Deaths linked to toxic fumes "are only the tip of the iceberg," said Orange County Fire Chief Holms.

"You can be assured there is a lot of cancer out there waiting to occur. There are a lot of career firemen who have been in situations in the past that we had no way of knowing the potential dangers," Holms said.

So many more firefighters will die because they are exposed far more often to cancer-causing agents, researchers say. And this increased exposure has coincided with the 350-fold increase in the production of synthetic chemicals since World War II.

"As the amount of synthetics has increased, the amount of cancer has also increased, so we have established that they are pretty well related," said Tom Smith, project manager of Firefighter Safety and Health for the Federal Emergency Management Agency in Washington.

"There is no doubt that the hazards of the job are greater than they used to be. The proliferation of synthetics has increased not only in business and industry but in typical residential environments."

Fires involving plastic contained in household items — furniture, carpeting, insulation, toys, telephones — and other synthetic chemical products, such as pesticides, gasoline and household cleaners, produce deadly gases or a complex mixture of cancer-causing substances.

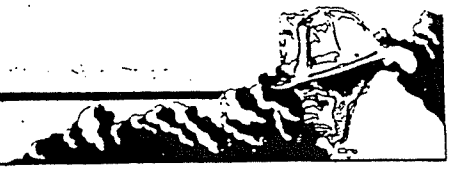
Fifty-three toxic compounds are present in smoke from burning plastics, said Dr. Selina Bendix, who heads a San Francisco environmental research firm. Forty-three are known or suspected carcinogens.

The curse of the firefighter's job is the repeated exposure to toxic and cancer-causing chemicals.

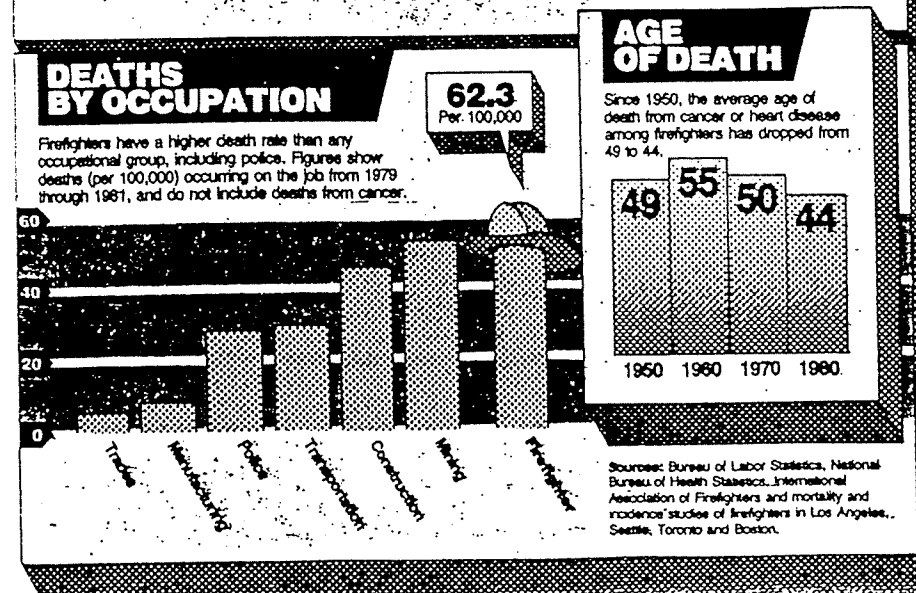
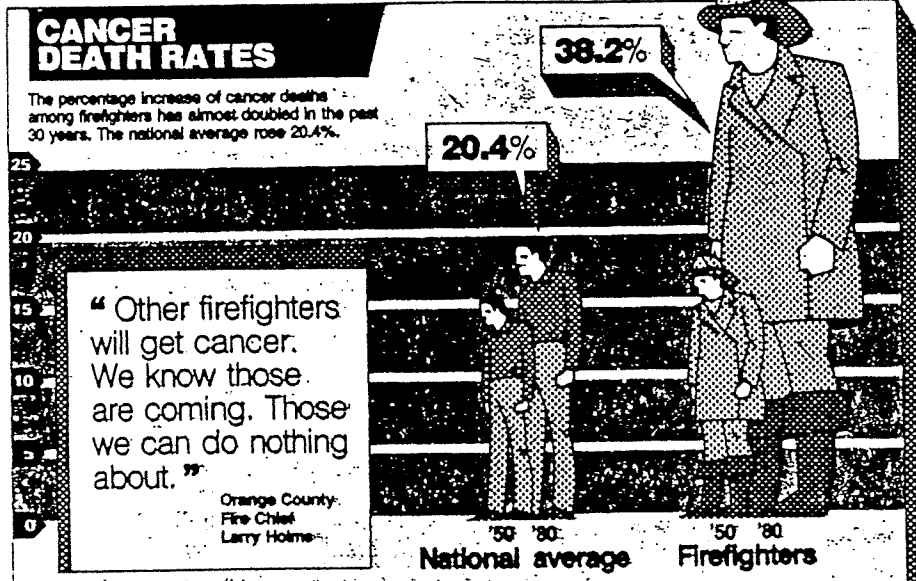
"If it was only a one-time thing, in most cases the body's normal defenses shouldn't be overwhelmed," said Dr. Linda Morse of San Francisco General Hospital, who studies firefighter health hazards.

"Firefighters may be exposed hundreds or thousands of times. The danger is much greater for firefighters who have multiple exposures," Morse said.

Plastics industry officials say they are being unfairly blamed for the soaring



When fires erupt today, heat and flame are not the only killers. A deadly, cancer causing new smoke billows from every house, factory and office blaze. It carries toxic gases from burning synthetics and plastics.



firefighter cancer-death rate. "Our competitors try to tag us as a ticking time bomb, but we are not," said John Lawrence, technical director for the Society of the Plastics Industry in New York.

"Plastics contribute to the toxic gases in fires because they are present. There is no body of medical studies on this subject that we consider significantly valid."

Lawrence said studies done to date on firefighter disease and death are preliminary and not conclusive. "We take the position that let's not get too excited about a health study or two. Let's look it from the standpoint of maybe we have discovered something here that needs to be looked at."

He said the studies are a "valid reason for firefighters to determine if they are at a higher risk."

He said the plastics industry is sponsoring research into the problem.

Any new research will add tremendously to what is known about firefighters' health.

"We have found that studies on the long-term effects of this exposure (to toxic chemicals) are almost impossible to find," said Dr. Sharon Itaya, an occupational cancer researcher in Houston.

Each fire produces a unique and complex mixture of poisons that is difficult to study. Little is known about the poisons' long-range effects on firefighters and bystanders.

But the Consumer Product Safety Commission is beginning a priority program to study toxics produced by burning synthetics, and medical studies of firefighters are being conducted in 12 cities nationwide. These, fire-safety officials said, are only the first steps toward understanding and dealing with the problem.

Studies of firefighter deaths have been conducted in Los Angeles, Toronto, Seattle and Boston. They show that firefighter deaths from cancer have more than doubled in the past 30 years — from about 18 percent of all firefighter deaths in 1950 to more than 38 percent in 1980.

The cancers afflicting firefighters at a higher rate than the average population include intestinal, rectal, colon, lung, lymphatic, throat, leukemia, brain, pancreas and mouth — the last three rare in the general population.

In addition, heart disease among firefighters is about 55 percent greater than the average among the general population, according to several studies, including one done in Los Angeles.

Firefighters in Los Angeles have received more disability pensions for heart disease than police, although there are twice as

DEADLY SMOKE

many policemen as firefighters.

When a fire alarm is sounded — often while a firefighter is sleeping — pulse rate increases to the equivalent of an hour of aerobics wrapped into one second. While firefighters are in the heat of battle — usually carrying about 70 pounds of equipment — their hearts often work at 95 percent of maximum for extended periods.

The Los Angeles cancer study has prompted similar research across the nation, said Los Angeles Battalion Chief Johnny Sampson, former safety officer for the department.

Most firefighters take for granted that they will suffer lung problems. But they don't realize how serious the damage can be until it is too late.

"Most firemen who are injured don't make it to medical care. They cough a little at the scene and go back to work," said Dr. Guy Randazzo, a lung specialist in Orange. "But now, fire departments are becoming very, very careful."

Firefighters have long been aware they are employed in a very dangerous profession, said Santa Ana's Mahany, but the awareness of the consequences of long-term exposure to smoke and toxics is "something that is very new."

Firefighters also are realizing how poorly protected they are.

Ironically, the suits designed to shield firefighters may themselves be a source of cancer.

Early protective suits were made of asbestos, a known carcinogen. They were replaced by synthetic materials, and recent research has determined that materials in many of those newer suits contain a compound that causes cancer in animals.

In addition to contributing to the risk of cancer, today's protective suits provide only limited protection from the increasingly toxic fire environment. Some tests have shown they offer only 40 percent protection from some toxins.

Many firefighters, like Battalion Chief Ed Rolette of the Orange Fire Department, said that suits have not improved to meet the increasingly toxic fires.

"I'm using basically the same equipment I did when I started 20 years ago," Rolette said.

Despite the growing alarm about their health future, firefighters still don't talk about it much, except in the context of safety-training sessions.

Their silence is not simply dedication to their jobs. And it's not just ignorance — at least not anymore. Their silence is self-preservation.

"You don't think about those kind of things. If you do, you'll never be a success.

You'll be too paranoid to even function," said John Berger, a forestry service captain in Orange who was retired after exposure to a toxic spill.

But when Capt. Allen Hazard died in September of pancreatic and lung cancer, it shocked some of his fellow Orange County firefighters out of their silence.

"You stop and think and wonder," said Orange County firefighter Jerry Schorr. "And it makes your wife think more than you do."

Orange County fire Capt. Howard Smith, 32, who recently was taken off duty after suffering lung damage during a 1981 fire, said, "We definitely travel the ragged edge."

"I don't think any fireman is blind to what he's going into, especially after the first year."

But, Smith said, "The statistics are just horrendous. We've got the worst of everything." ■

THE THREAT OF DISEASE

Repeated exposure to toxic fires threatens firefighters. They show increased incidence of cancer and cardiovascular and lung disease.

Other studies have shown increases in kidney disease and diabetes among firefighters and a marked decrease in lung capacity. Respiratory diseases such as pneumonitis have become an occupational hazard.

| Disease | Percent incidence rate above normal |
|----------------------------|-------------------------------------|
| Lung cancer | 200+ |
| Mouth cancer | 200+ |
| Lung disease | 120-190 |
| Brain cancer | 129 |
| Prostate cancer | 117 |
| Pancreatic cancer | 140-176 |
| Bladder cancer | 143 |
| Cardiovascular disease | 155 |
| Lung impairment or disease | 300+ |

Sources: Mortality and incidence studies in Los Angeles, Toronto, Seattle and Boston; National Institute for Occupational Safety and Health; National Cancer Institute; Foundation for Fire Safety; National Bureau of Health Statistics.

Firefighters' battles with cancer

California cancer study identifies firefighters that have tended to be exposed to toxins on the job in Orange and Los Angeles counties include:

■ Battalion Chief Marshall Robert, 52, died in 1981 of lung and bladder cancer. He worked for 20 years in the Los Angeles County Fire Department.

■ Battalion Chief Fulton Fire Marshal Robert, 50, died in 1981 of lung cancer. He worked for 20 years in the Los Angeles County Fire Department.

■ Battalion Chief Alan Hazard, 52, of the Orange County Fire Department died in 1981 of pancreatic and lung cancer. Before he died, he filed a workers' compensation claim stating that his cancer was caused by repeated exposure to toxic fumes.

■ Battalion Chief James Waters, 54, of the Huntington Beach Fire Department died in November 1981 of lung cancer.

■ Battalion Chief Frank Nogas, 48, of the Buena Park Fire Department died in 1981 of brain cancer.

■ William Walker, 43, of Huntington Beach, a captain with the Los Angeles City Fire Department, died in 1980 from lung cancer. His death sparked a cancer mortality study of Los Angeles firefighters.

■ Porter Griggers, 39, of the Los Angeles County Fire Department, died in December 1980 of a rare lymphatic cancer, seven years after he was exposed to Whittier to a pesticide that is a suspected carcinogen.

■ Robert Rowland, 34, who worked with Griggers and was exposed during the same pesticide spill. One week after Griggers' discovery, Rowland was diagnosed as having the same rare lymphatic cancer. He died two months before Griggers, and a workers' compensation judge ruled in August that his death was caused by the pesticide exposure.



Firefighters Jerry Schorr, in foreground, Bob Feldtz, and Mark Danielson wear their breathing gear in the garage of Laguna Hills Fire Station 22. Since the death of a captain, firefighters give more attention to safety.

When danger is in the air

By Maria Cone
The Register

When the garage door opened, Jerry Schorr's face was lost in a fiery black burst. Behind him, Mark Danielson's body disappeared in the soot.

Seconds later, the firefighters walked through the smoke as if it were not there, pulling oxygen masks over their faces and entering the garage.

At Fire Station 22 in Laguna Hills, the days are full of instant decisions.

The smoke-filled garage in El Toro could have held any mixture of hidden enemies—from pesticides to chlorine bleach.

But whether to protect themselves from such risks is only one decision the firefighters face, and it often seems a minor one at the time. There are people to protect, nearby homes to save, ladders to climb and shaky roofs to test. And there are homeowners worried about a firefighter's boots muddying their carpets.

Danielson, Schorr and the others were not wearing their face masks when they took the quick gush of smoke head-on. They donned the masks only when they entered the garage, which had been set aflame by hastily discarded fireplace ashes.

Their lungs accepted the abuse without so much as a cough, and the men returned to the station. After all, they said, it was just a garage fire. Nothing more than a spit of smoke.

But the men, most in their late 20s, admitted they do not know the cumulative toll such smoke eating may take on their bodies. And they don't like to think about it.

"We're all going to die sometime," fire engineer Brent Major said, shrugging.

Still, despite their apparent nonchalance about their well-being while fighting fires, they are otherwise vigilant in treating their bodies with care.

Faced with dwindling lung capacity, only a few smoke cigarettes. With their own money, they hired an aerobics instructor,

who demands an hour's worth of sweat each morning they report to work. They religiously take their pulse while exercising.

And there have been a few rumblings of concern, especially after Orange County fire Capt. Allen Hazard contracted lung cancer and died in September 1983.

"The guys are a lot smarter now," said Capt. Tom Pawloski, a 10-year veteran who heads a shift at the station.

They realize that expressing concern isn't the sign of a weak firefighter but of one who wants to live a long life.

"Heroes," said one firefighter at Station 22, "are usually dead."

The Orange County Fire Department requires firefighters to wear masks, hooked up to a supply of oxygen, when they enter burning, smoke-filled buildings. But in the rush of emergencies, they sometimes don't.

They usually breathe from oxygen tanks only in extremely smoky buildings and never outdoors in the illusion of fresh air.

DEADLY SMOKE

At toxic spills, they try to take fewer risks. Still, it's a judgment call for firefighters with only a schoolbook knowledge of chemicals.

Schorr has made his share of calls at spills. Like the rest of the Orange County Fire Department, his life is logged in records that read like a chemist's nightmare.

"Material exposed to: Diazinon," one of Schorr's routine reports reads.

"Length of exposure: 40 minutes.

"Protection: Breathing apparatus on, but not in use.

"Was employee exposed? Possibly.

"Did employee receive medical aid? No."

The report records what firefighters thought was a run-of-the-mill, two-car crash. Then they saw the ruptured bottles of the toxic pesticide Diazinon.

But Schorr and the other firefighters decided the area was not contaminated enough to warrant oxygen tanks. They simply stood away from the cars, with the wind blowing toward their backs.

"You get so used to it, sometimes you get a little apathetic," said Tom Sullivan, battalion chief at the station.

Sometimes, it seems too unprofessional to pull on a mask to avoid a few puffs of smoke. But the major reason they don't wear them, they say, is inconvenience.

Breathing equipment adds about 35 pounds to the 100 to 150 pounds firefighters already carry in ladders, axes, hoses and turnout coats. They cannot talk to each other while wearing the masks, making an organized attack on a fire nearly impossible. The oxygen tanks take about a minute to put on — often a minute they cannot waste — and they last only 15 to 20 minutes.

"If you change bottles (of oxygen) every 20 minutes, the fire would be long gone," Sullivan said.

But Pawloski said if he knows a situation is hazardous, he is adamant that his men wear masks.

"If you go in and eat a lot of smoke, you're worthless as a firefighter," he said.

When the fire alarm sounded one recent morning, the men of Station 22 fell out of their jumping-and-jogging aerobics routine, slid their yellow turnout coats over their gym shorts and climbed into the fire engine.

Smoke was swirling in the air outside a door when they arrived at an apartment complex. At the first sign of smoke, their hearts were beating faster than the 160 beats per minute stirred up by the morning aerobics. A mother and her infant stood outside.

"Anybody inside?" Pawloski asked the woman. She shook her head and he led his team inside. The child had turned on the



At a house fire, firefighters steel themselves for battle, left, as they wait for the garage door to be opened.

Often, the firefighters say, they feel like canaries on a stick, thrust into situations to see whether they survive.

stove, setting plastic cookware on fire.

Outside, Capt. Mike Burnett picked up a piece of blackened plastic, an orange Tupperware bowl melted by the stove.

"A lot of plastics," Burnett said. "That's probably the most prominent carcinogen we have."

Smoke inside the house was minimal, and Pawloski and Burnett didn't order the men to use their oxygen tanks when they entered the kitchen.

"It was at that point of when to wear breathing apparatus and when not to," Pawloski said. "We have to find out what we have first."

Often, the firefighters of Station 22 say, they feel like canaries on a stick, thrust into situations to see whether they survive.

"It's like being in the Army," Sullivan said. "You go out and brave the bullets and die immediately. Here, you might die 10 years later."

The word "safety" is drummed into their heads in training sessions to the point that they joke about the word — something they say hides the fear.

"Always remember safety," one firefighter lectured his colleagues gathered in the station classroom. "Think we've talked about that enough today?"

The subject — from the threat of slow death of lung cancer to violent death by fire — is difficult to escape.

The night of the garage fire, as the men sat down to dinner, the television news flashed old footage of a Los Angeles firefighter tumbling to his death from a blazing roof.

They fell silent until the flames faded from the screen. Then they went on with dinner. ■



“A lot of plastics, that’s probably the most prominent carcinogen we have.”

Capt. Mike Burnett



Above, the door opens with a burst of smoke, and Laguna Hills firefighters Mark Danielson and Jerry Schorr head in.

DEADLY SMOKE

Fire frees an unseen killer that lurks in plastics

By Chuck Cook
The Register

In every home and office, a bomb waits to explode.

It waits in telephones and carpets, toys and beds, stereos and wallpaper. When these or any household items made of synthetic materials, especially plastics, catch fire, the bomb explodes in the form of poisonous gas.

"I think we are dealing with the greatest environmental problem in this country," Sen. Art Torres, D-Los Angeles, said. "Right in our own urban homes and back yards, we have a toxic time bomb."

For a growing number of unfortunate firefighters, the bomb has gone off.

In 30 years, the number of firefighters dying from cancer has almost doubled. Their lungs and hearts are being crippled at an increasing rate.

In the same period, synthetic chemicals and their toxic combustion products have become a major ingredient in fires.

The new gases in fires "are more lethal and potent than gases we have been dealing with for years," said Dr. Charles Parker, a burn specialist at the University of Texas Southwestern Medical School in Dallas.

Tom Casey, spokesman for the Foundation for Fire Safety, said that until 15 or 20 years ago, "You could go into most fires without a mask with no problems."

"But that is not the case now. (The) smoke we are dealing with today is more dense and more toxic. We must identify those toxics and determine how effective our equipment is in protecting our firefighters," Casey said.

The post-World War II plastics age has forced new words into the firefighters' lexicon: polyvinyl chloride, polystyrene and polyurethane.

Consider, for example, polyvinyl chloride — or PVC, as it is usually called. This material, introduced extensively in the late

DANGERS IN THE HOUSE

There are several commonly used products that produce probable cancer-causing elements when burned.

| Substance | Common uses | Cancer-causing elements | Types of cancer |
|----------------------------------|-----------------------------------------------------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------------------------------------|
| Plastics | Each household has an average of 50 pounds of plastics with uses ranging from a telephone to garbage bags | Vinyl chloride, benzene, urethane, and acrylonitrile | Leukemia, liver, brain, lung, nervous system, respiratory system, and colon |
| Petroleum products | Motor fuel and cleaning solvents | Benzene and polycyclic hydrocarbons | Leukemia, bone, liver, pancreas, lung and respiratory system |
| Ceaceote | Wood preservative and pitch for roofing | Benzopyrene and polycyclic hydrocarbons | Skin, forearms, lungs, mouth, reproductive system and respiratory system |
| Polychlorinated biphenyls (PCBs) | Oil in electrical equipment, especially transformers | Dioxin, PCBs | Liver, pancreas |
| Pesticides | Agricultural and home-lawn and gardens | Too numerous to list | Nervous system, liver, leukemia, bone, colon, reproductive and respiratory systems |
| Asbestos | Insulation, pipe wrap, and fireproofing | Asbestos | Liver, nose and respiratory system |

Sources: National Institute for Occupational Safety and Health, International Association of Firefighters and Dr. Rolf Hartung, University of Michigan.

1960s, is found in nearly every home, office, factory and car in the nation. It is used in plumbing, furniture, telephones, televisions and wastebaskets. When it burns — as it does in most fires — it produces deadly chemical byproducts that include chlorine, hydrogen chloride and phosgene gas, which was used in World War I as a chemical warfare weapon.

Perhaps the clearest and most widely known illustration of the killing power of synthetic chemicals in the environment was the MGM Grand Hotel disaster in Las Vegas.

In November, 1980, fire roared through the MGM at 18 feet a second, killing 85 people in a matter of minutes. But flames touched only nine of them.

When it was over, the bodies of the other 76 lay in seemingly sterile rooms, untouched by fire. Medical tests on the unburned bodies showed most were killed by toxic emissions in the smoke, said Gordon Vickery of the Foundation for Fire Safety, which studied the disaster.

Nearly 12,000 people die in fires each year in the United States. Most die from smoke or toxic gases well before the flames reach them, and half are killed by gases from smoldering synthetic furniture, said Susan Womble, researcher for the Consumer Product Safety Commission.

The problem has become a preoccupation with some firefighters.

"We foresee it as a very serious problem incurred on a daily basis," said Ed Rolette, a battalion chief for the city of Orange. "We are encountering new synthetic materials daily, and they all seem to produce toxic materials when they burn."

And the problems seem to worsen weekly, according to Battalion Chief Jan Hagan of the Anaheim Fire Department.

"As time goes on, there are new chemicals developed each day in this

country and we have yet to find out what the consequences of them are."

Gases produced by a fire can kill even before the smoke begins to thicken.

In the MGM fire, Vickery said, "It was colorless and odorless up there."

"You would find the bodies lying there in what appeared to be a sterile atmosphere. It just didn't look like there was anything there that would have killed them."

The blaze spurred studies across the country ranging from how to treat burn victims to analyzing "what they're breathing when they die," Nevada Fire Marshal Tom Huddleston said.

"We had always assumed that the irrational behavior shown by most fire victims was a result of panic," Huddleston said. "In the MGM, we found out a lot of the victims were not necessarily panicking, but were suffering from thinking disorders because of the toxic gases they inhaled."

Toxic chemicals continue to do their damage even after the flames are extinguished, when firefighters remove their bulky, heavy and hot breathing gear, Huntington Beach Fire Chief Ray Picard said.

"In the overhaul process there are toxic vapors," Picard said. "It may appear to be a clean environment, but tests have shown it is among the most dangerous."

In addition, deaths and damage can be caused by chemical reactions of combined gases.

"You get two kinds of gases, and one plus one equals 16," said Parker, of the University of Texas Southwestern Medical School.

The danger to the public is not only in fires, but from hazardous materials as well.

More than 50 people, including firefighters, police officers and teachers and students at Richland School, were exposed to an irritating chemical cloud in



Orange in 1979. The cloud, which came from the Fiberite Corp., resulted from a small fire and chemical reaction inside the plant, Orange Police Sgt. Mannie Ortega said.

He said the fire occurred before school had begun or the injury toll could have been much higher.

Forty-four people have filed suit against Fiberite, Ortega said. Attorneys for all parties in the lawsuit met with a judge recently and agreed that the case would go to trial March 19.

In a unique move, the City Attorney's Office has intervened and is asking that Fiberite reimburse the city for lost time and medical bills for policemen who were overcome by the cloud.

Officials from the plastics industry say they are the scapegoat for those searching for an explanation for the increase in cancer deaths and other disease among firefighters. They argue that plastics and synthetics only add to a problem that always existed. Even natural products such as wood, leather and wool can produce toxic byproducts in a fire, they say.

And, although they acknowledge that burning plastics emit toxic materials, they say most fire deaths are still caused by carbon monoxide — a byproduct of every fire.

No one knows how many victims toxic gases have claimed, immediately or later from cancer or other disease. But the list of fires in which toxic gases are the implicated killers grows:

■ In a 1977 Cincinnati fire, polyvinyl chloride fumes were identified as the primary cause of death of 161 people at the Beverly Hills Supper Club.

A report on that fire published in the Journal of Combustion Toxicology said the victims died "without any direct involvement with the flames and long before the carbon monoxide had reached a (fatal) concentration."

All 52 women who escaped the fire later suffered uterine dysfunctions, three resulting in hysterectomies. Two had miscarriages in the five years after the fire, according to the report. Because cancer can take up to 40 years to appear, no one has determined the long-term effects on the survivors.

■ Toxic fumes from synthetic material also were listed as the cause of most of the 23 deaths in a fire on an Air Canada plane that made a forced landing in Cincinnati on June 2.

■ Gases were the primary killers of 17 people who died earlier this year in hotel fires in Houston and Fort Worth, Texas. In Biloxi, Mississippi, fumes from burning synthetics were identified as the cause of

Nearly 12,000 people die in fires each year in the United States. Most die from smoke or toxic gases well before the flames reach them, and half are killed by gases from smoldering synthetic furniture. The problem has become a preoccupation with some firefighters.

death of 29 inmates in a 1982 jail fire.

The MGM Grand fire and others in multistory buildings across the nation have prompted concern in California. Legislation had been introduced in the state Assembly requiring that materials in high-rise buildings be proven fire safe before they are marketed.

"Firefighters and citizens who occupy high-rise buildings are subject to an unseen danger by materials used not only inside, but between the walls," said Assemblyman Gray Davis, D-Beverly Hills, who introduced the bill.

"This toxic threat should not be permitted. This stuff poses a dire threat to life and limb," Davis said.

Synthetics that are more flame resistant can be developed, fire-officials say.

Capt. Mark Reinhold of the Orange County Fire Department says the public and firefighters cannot wait.

"A lot of things that we are exposed to, we don't even know what the effects will be 20 years down the road," Reinhold said. "And when there is a combination of substances, we don't know what they can do." ■

Borrowed time: firefighter now has cancer battle

Doctors blame the effects of inhaling toxic fumes on his Westminster job

By Chuck Cook
The Register



Robert Alfonso

Westminster fire marshal Robert Alfonso tugged nervously at his thick black mustache as he tried to explain the trade-offs he had made.

Like his colleagues, Alfonso spent his life trading the risk of exposure to poisonous fumes for the chance to save property — or lives.

Sometime during his 19 years as a firefighter, the 40-year-old Alfonso said, he made too many trade-offs. The result has been a two-year battle with cancer.

Doctors told Alfonso his cancer was caused by the cumulative effects of inhaling toxic fumes. Alfonso figured he had about seven months to live. That was 16 months ago.

"You know," he said, choking momentarily on his emotions. "It's a sad situation. I can't blame the job per se for my situation. I just got into something. I don't know what it is."

Alfonso became a fireman when he was 21. In time, he became captain and then battalion chief.

His peers knew him as an aggressive but careful firefighter. Still, he was exposed dozens of times to toxic fumes in fires ranging in types from automobiles to chemical companies. And he was exposed to hazardous chemicals when he went to clean up spills.

"In his firefighting duties he was exposed to a lot of smoke over the years," said Leonard Marks, Westminster fire chief. "He was exposed like everyone else in firefighting."

Alfonso lives near the ocean in Huntington Beach. To keep in shape for his job, he jogged up to six miles every other

DEADLY SMOKE

In November 1981, after running on the beach, he gasped for air, wheezed and then coughed up bloody mucous. He thought it was only bronchitis but decided to see a doctor.

Dr. G.P. Bonin at Western Medical Center told him he had lung cancer.

"It's a hairy, startling and mind-boggling thing when you hear the doctor say, 'There it is,'" Alfonso said. "I don't know, but I guess being afraid of the unknown is a natural fear."

Doctors removed the cancerous lobe from Alfonso's right lung, and he returned to his job as battalion chief. He started jogging again. He was on the mend.

In July 1982, Alfonso noticed a small lump on his right shoulder. He thought it was a cyst, but it became painful.

A biopsy found it was cancerous: "It was the same cell structure as in the lung," Alfonso said.

Doctors began radiation treatment and later put an iridium implant in his shoulder. The implant appeared to arrest the tumor.

Alfonso had been studying cancer and realized that the average life span for a person with the same type of cancer for the second time is 29 weeks.

"After I came home from the hospital the second time there were five days of being in misery," Alfonso said. "I was despondent, my wife was despondent. We couldn't look at each other without being near emotional collapse. Neither one knew what to say to each other."

"When you have that, you don't care to go to bed or get up," Alfonso said. "You don't want to face things. My wife was going through the same thing."

"It was scary the first time, and it brought me to my knees the second time," Alfonso said.

Alfonso became a born-again Christian. Now, he said, "It's in his hands."

On Sept. 2, he was reassigned from battalion chief to fire marshal. He filed a workers' compensation claim, saying his cancer was caused by exposure to toxic materials in fires and hazardous material spills.

"At each fire, there's a lot of toxic stuff in there," Alfonso said. "Like just a lousy garage fire, you will see black billowing smoke."

Firefighters "compromise their health" to save lives and property, Alfonso said. "Those are the trade-offs that are made. It's wrong but that is what is occurring."

His battles with cancer have made Alfonso keenly aware of the dangers of toxic smoke in fires, a danger firefighters too often ignore, he said.

"It's not typical for a firefighter to put on a breathing apparatus for a dumpster fire or a car fire," Alfonso said. "But after



Buena Park Battalion Chief Bill Edmundson takes a breath test administered by Brian Dimick.

being through what I've been through, you look at every fire as dangerous or one that has potential to be bad stuff."

Laws could require all firefighters to wear breathing packs, Alfonso said. But he recalled one fire that took 13 hours to beat down. That fire would have required 117 bottles of oxygen for each three-person team, he said.

Alfonso's cancer has worried his colleagues. Even though firefighters avoid discussing the dangers of their jobs, Chief Marks said, "There has been a lot of fire station discussion. There is a subtle but constant fear of those things. There are a lot of things that firefighters don't like to talk about. And one of those facts that we face is the rising rate of cancer."

Alfonso lives one day at a time, in pain. He said he can do almost anything any

other 40-year-old man can do.

"He seems healthy today," Marks said. "But he must feel like he is walking on pins and needles every day."

Alfonso said he hopes someone will find a solution, if not for himself, for his colleagues.

"Nothing is going to be done until someone passes legislation with some teeth," Alfonso said. "And usually it takes a major disaster to cause something like that. One death or five really doesn't mean that much."

He knows he is on borrowed time. "I don't want to retire on medical disability. I just want to walk out on my own and not have any sickness, disease or injury. I want to just put in my 30 years and know that I have done a good job." ■



Hazmat

They are the space-age firefighters, wearing high-technology suits similar to those worn by the astronauts who first stepped on the moon. Their 10-member squad, the Orange County Fire Department's Hazardous Materials Team, was created in July 1983 to handle the unknown: toxic spills. Known as the Hazmat team, they are called to clean up materials ranging from insecticides in overturned trucks to vats boiling over in a factory. The members, all volunteers, underwent 200 hours of training in two months, ranging from basic chemistry to tactics on sealing toxic leaks.

DEADLY SMOKE



Three safety-garbed members of the Orange County Fire Department's hazardous materials team — Hazmat — at the scene of a muriatic acid and chlorine spill last fall.

Before synthetics and toxic ingredients became an everyday part of industry, firefighters only had to worry about the hazards of smoke inhalation and burns.

Today, when they approach a spilled

chemical, they have no idea what they are up against. Firefighters encounter acid clouds so harsh they dissolve masks and melt leather shoes.

Hazmat

A quick whiff of the wrong fume and it can infiltrate their bodies and cause cancer.

"We know we deal with possible carcinogens, and we know what they may do," said Capt. Keith Davis of the Hazmat team.

"But our main problem comes when you mix two or more chemicals," he said. "No one knows what you have. Sometimes even chemists can't tell us."

Fire departments across the nation are

joining the hi-tech age with Hazmat teams.

The teams wear more protective gear than the ordinary firefighter, but the equipment they wear is too bulky and costly to use fighting fires every day.

Called moon suits, the more advanced outfits that seal from head to toe cost \$1,400 each and weigh 15 pounds, plus about \$1,000 and 35 pounds for the breathing apparatus. For minor toxic incidents, the firefighters wear disposable \$35 jumpsuits made of synthetic, paper-thin material.

But technology hasn't kept pace with firefighters' needs. They still determine the risks of a hazardous spill the old-fashioned way—by searching through a library of chemistry books.

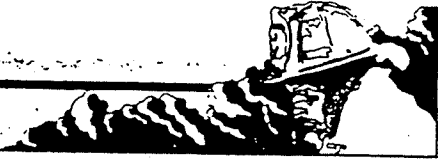
The teams are designed to handle unknowns, but they are aware of firefighters' high cancer rate and they won't take risks knowingly.

"Things have changed," Davis said. "Now if we have any doubts about what we are dealing with, we won't expose ourselves." ■



Two Hazmat team members wait for

3-13
28-2



“You’re surrounded by potential explosive products and you look back and the doors are 50 feet away. That’s when you get nervous.”

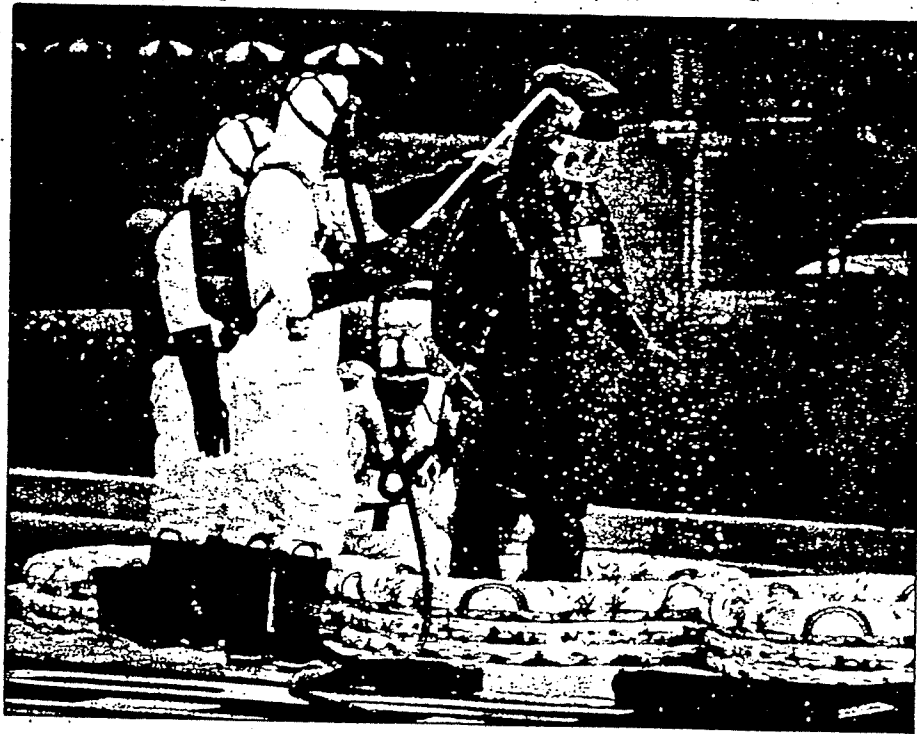
Captain Mike Rohde, OC Fire Department
Hazardous Materials Unit



Lou Blankenship and Scott McDairmant spread soda ash on an acid spill.



Blankenship gets into his protective gear.



After the cleanup, Blankenship is decontaminated in a rubber wading pool.

3-14
28-6

A crucial part of their lives is extinguished

A career cut short and an uncertain future

By Meris Cone
The Register

"Fire is the worst possible thief. It'll take everything — 20 years of photo albums and the carpet — and leave you standing in an empty house. And if you go one step further, it'll take you."

Howard Smith's thief crept out of the smoke and robbed him of his future and his strong lungs.

But it didn't break his spirit. After two years, Smith still thinks of his fellow firefighters as the last American heroes. He remembers the triumphant times when he beat the thief — fending it off with only a fire nozzle and an ax in his hands.

Bob Greenwell also faced the thief of fire — and lost. At the time, he believed it was a job someone had to do. Now, 11 years after his body was broken, Greenwell wishes it had been someone else.

Howard Smith was the youngest and one of the most promising captains in the Orange County Fire Department when he was hired seven years ago.

When he wasn't choking on smoke, the 32-year-old captain was lecturing about the evils of what he called the "worst possible thief." Then he became its victim — he was forced off duty in December 1983 when doctors warned that his lungs cannot handle anymore battle scars.

Most sane people run out of fires; firefighters run in. It is simply their job. Looking back now, Smith wouldn't change anything; he wouldn't have taken a three-piece suit and a desk job just to have a healthy pair of lungs.

Like a robbery victim in shock, Smith cannot remember the near-fatal brush fire behind the El Toro Marine base two years ago. He had slept only two hours and his lungs were clogged with smoke from a dump fire he had fought until 4 a.m. At noon that day, the alarm at Station 26 in Irvine sounded again.

Ron Sanchez, one of five firefighters on Smith's shift, remembers the fire well.

"It was Halloween day," Sanchez said. "We pulled up to this fire, and it was a rather small one at the time. I went across a ravine to get some more flares."

"When I was coming back, something seemed really eerie. Winds started kicking up. Something just didn't feel right. I looked up to see this big column of dense smoke. A chunk of tumbleweed flew up in the air 150 feet and burst into flames."

"Howard and I started running and I turned around to say 'Whew! We barely made it.' He was on the ground in a fetal position with his hands over his face."

The flames hadn't touched him, but Smith was overcome by superheated carbon monoxide that chased much of the oxygen out of his bloodstream. He was wearing only a bandana over his face — standard gear in wildfires.

Doctors told him later that he had breathed in more than enough carbon monoxide to kill him. Lesions on his lungs were so severe they were reminiscent of mustard gas burns in World War II. His senses of taste and smell have disappeared.

Outwardly, most of the wounds have healed. But he has lost 40 percent of his lung capacity, and doctors say emphysema is likely to consume him.

"I turned myself into a 20-year smoker in 20 seconds," Smith said.

"The frightening thing is," said paramedic Rick Van Auken, Smith's best friend and a co-worker, "Howard could become one of those guys we see every day. A few months ago before he was taken off duty, we handled a call where we saw a woman who walked around with one of those oxygen hoses up her nose. I saw the apprehension in Howard's eyes when he looked at her."

Smith's wife, Stacey, a nurse who specializes in respiratory disorders, also knows what the future could hold for her husband's lungs. She treated him at Western Medical Center when he was

injured, and she married him eight months later.

"Sometimes I wish I didn't know," she said. "I've seen patients gasping for breath. That would be a terrible way to live."

Able-bodied and 6-foot-2, Smith once prided himself on his health. The other firefighters used to tease him about his vegetarian food in the station's refrigerator.

"Yeah," he used to tell them before the accident. "You guys just wait and see who's healthier than who."

Now, he can no longer taste the food he eats and his doctors advise him to give up two of his remaining loves — skiing and surfing. His fellow firefighters tiptoe around the subject of his health.

"I am a constant reminder of what can happen to them," Smith said. "Everyone is just standing back now and waiting to see what's happening to me."

Against his doctor's advice, Smith returned to work four months after the fire. The next day, his lungs balked. He collapsed from his first whiff of a house fire already extinguished. Once again, Sanchez was there to pick him up.

A few months later, he returned to work again.

"Then his bubble popped," Sanchez said. The department's insurance program finally caught up with him and took him off duty. The next step is forced retirement.

"I was trying to sneak back to work," Smith said. "I have to be blatantly hit in the head. If the doctors say 'Howard — I think you shouldn't work,' I take that to mean I should make up my own mind."

Even on Smith's last day at work, a car fire filled the air with acidic black smoke — one last dose of poison attacking his battle-scarred lungs. Worried someone was inside the burning car, he didn't take time to put on his face mask.

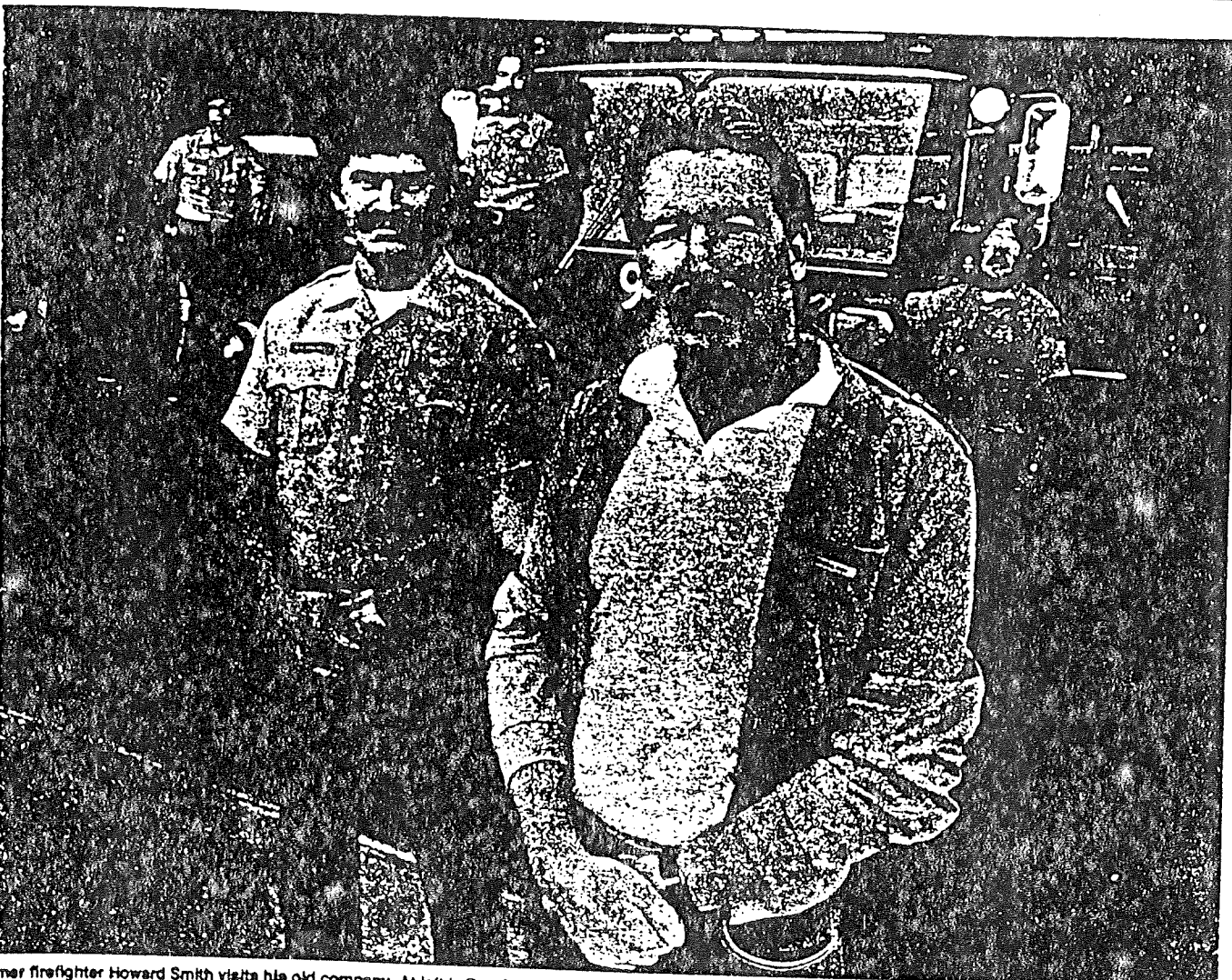
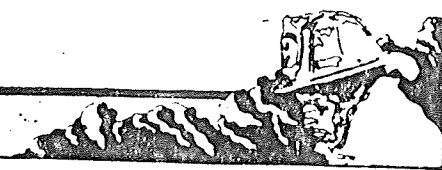
"Now I don't know what I'm going to do," he said. "I probably knew all along I would face this, but I convinced myself it wasn't going to happen. I never really thought I'd lose my job."

When Smith tells his shift about all the movies he has seen and the ski boots he is breaking in, they look at him with envy. Retirement doesn't sound so bad, they think. But they quickly change their minds.

Firefighters such as Smith are cut off from the best-loved part of their lives.

Losing healthy lungs to a firefighting job "is like the woman you love putting a knife in your back," said Chuck Nicola, his battalion chief.

"When Howard first told me he was going to be retired, I felt almost the same



Former firefighter Howard Smith visits his old company. At left is Ron Sanchez. In back are, from left, Steve Isava, Rick Van Auken and Mike Roberts.

...y as if somebody had told me he had
...d," he said.
The Fire Department may offer Smith a
...sk job, but he balks at that. No other job
...peals to a man who earned about \$50,000
...year for 10 years doing what he loved.
...Smith and his wife will miss the salary
...t keeps them in a stylish Huntington
...ach apartment, but he will miss the
...tus and responsibility more.
"I don't care what he does, as long as
...s happy," Stacey Smith said. "Even if
...goes back to firefighting. I knew deep
...wn that he shouldn't go back. But I
...ldn't ask him not to do it, wjth his love
...it."
The Smiths' marriage was like a fairy
...e romance — a firefighter falls in love
...h his nurse, marries her and lives
...pily ever after. Now, they wonder
...ether their marriage can withstand the
...tle of nerves.
We sat down and I said to her, "This is
...type of thing that breaks up

marriages," Smith said. "We'll just have
to see what happens."
The couple had hoped to start a family
next year, but now they will wait until
Smith gets settled doing something — he
has no idea what.
"I feel like I should be looking through
want ads," he said. "I don't know what my
options are. I've never been retired
before."
Stacey Smith remembers how satisfied
her husband looked after battles with fires.
Now, he is beset by almost constant
headaches and the stress is starting to show
in both of them.
"She married a fireman," said Smith's
co-worker Van Auken, who was best man at
Smith's wedding, "and now he's no longer a
fireman."
Smith refuses to put his career in past
tense just yet, although he is uncertain
whether to tell people "I am a firefighter"
or "I was a firefighter."

"It's like I'm running toward a road and
I reached a cliff," Smith said.
"Fortunately, I stopped in time. But I can't
see anything positive right now. For the
first time in my life, I can say I'm not
happy.
"That's not to say there's no chance I'll
come back. I just don't want to give up."

Bob Greenwell surrendered to the thief a
long time ago.
His shoulder bones show through his
shirt. At 53, he wears a brace to steady a
shaking hand. His neck is numb after
multiple lung surgeries, and he almost died
of pneumonia in early 1983. More than
anything else, he worries about the toxins
that may still be in his body.
"I've had everything but an autopsy," he
said.
Greenwell had 21 years invested in the
Fullerton Fire Department when he was

DEADLY SMOKE



Below, Bob Greenwell, a former battalion chief for Fullerton Fire Department, retired after developing lung cancer. Above, Howard Smith was the youngest captain in the Orange County Fire Department before he breathed superheated carbon monoxide and lost 40 percent of his lung capacity.

retired suddenly five years ago. At a warehouse fire in the fall of 1972, he served as battalion chief directing a two-hour attack. After the fire, he was relaxing in the station kitchen, trying to ease his churning stomach with milk, when he noticed a white powder on his blue uniform.

The powder was lead, stored in paper sacks in the warehouse. Physicians later told him his bloodstream contained 2½ times the amount of lead considered safe.

Firefighters worried about burns, but not the dangers of chemicals and cancer back then. Soon, his hands were so weak that he couldn't turn a door knob. Within days, he was in a wheelchair. After seven months of tough therapy, he was nearly recovered and back to work in 1973.

Three years later, doctors found a malignant lung cancer. He was retired from the department the next year, and his doctor deemed the cancer job-related.

"I'm convinced the cancer's from my 21-year career — as many times as I came out of buildings coughing and gagging without enough air," Greenwell said.

His cancer is in remission, but he will never be able to return to work. He lives alone; his wife left him during his cancer treatments in 1976.

Firefighting is just a memory, but Greenwell fears venturing a look into the future. His Fullerton apartment is brimming with firehouse memorabilia, including an old fire nozzle, hats and a plaque commemorating him as Fireman of the Year, 1970.

"I think of these as mementos of good times," he said. "I don't live in the past, but doggone it, the fire department was a big part of my life. It always will be."

"Now I'm a somewhat reclusive, used battalion chief."

Greenwell smiled; he tries to keep his sense of humor. But with the holidays sneaking up on him, he is reminded of a 3-year-old girl who died in his arms one Christmas Eve. Another lost battle.

He thinks about what he would tell his three grown sons if they came to him and said they wanted to be firefighters. He would advise them to take the chance if they must — but, unlike their father, go in with their eyes wide open.

As far as his own regrets, he wonders whether the pride of youth was worth the cost. For him, the thief showed no mercy.

"I don't regret it," he said, "but I wish the ending had been a little different. I still admire the fire service. I'm proud to have been part of it."

"But when I look at the limits I have, both physically and financially, it wasn't worth it."

"I never thought I'd hear myself say that." ■



Widows win new rights for stricken firefighters

By Chuck Cook and Maria Cone
The Register

Porter Griggers and Richard Rowland worked together, contracted cancer together and died together.

When Griggers and Rowland learned they simultaneously had developed a lymphatic cancer so rare that only 1,680 people contract it each year in the United States, they knew it was more than a coincidence. From their hospital beds, they reviewed fire records.

Then it dawned on them. As Los Angeles County firefighters, both had worked together seven years earlier, mopping up a toxic spill of a soil fumigant in Whittier.

Griggers, 39, and Rowland, 34, died of lymphatic cancer within three months of each other in 1980.

County officials, however, weren't convinced their deaths were caused by the pill. They denied the widows, Guyla Rowland and Linda Griggers, workers' compensation.

But the women continued the battle. Finally, in August, they won a major victory when a workers' compensation judge ruled Rowland's cancer was caused by exposure to the fumigant.

Their case became the principal argument by fire safety officials for stronger legislation. In August 1982, the California Legislature became the first in the nation to pass a bill recognizing cancer as a job-related hazard for firefighters.

Under that law, effective Jan. 1, 1983, any firefighter's cancer is assumed to be job-related if he can prove exposure to at least one of a long list of carcinogens. This bill will allow firefighters to collect compensation for medical bills and time lost from work.

Opponents of the bill, led by the County Supervisors' Association of California and the League of California Cities, argued it would cost \$3 million a year through state workers' compensation and public employee retirement claims.

But its supporters, including fire management and union organizations, argued benefits to widows and survivors already amounted to that annual figure and the bill would result in a shift of benefits from the survivors to the firefighters.

The bill, authored by Assemblyman Art Torres, D-Los Angeles, has become a model for the nation, said Rich Duffy,

occupational health specialist for the International Association of Firefighters. Illinois already has passed a similar law.

With the new legislation, firefighters or their widows may not have to fight long battles to collect benefits.

Lobbyists who fought for the legislation cited the case of Capt. William Walker of Huntington Beach.

Walker, an 18-year veteran of the Los Angeles City Fire Department, died at age 49 three years ago after cancer spread through his lungs, liver and spleen.

Union officials brought in Dr. Selina Bendix, a San Francisco consultant who had studied fire deaths. Bendix convinced the Los Angeles pension board that Walker had died from exposure to seven carcinogens after fighting a blaze at a San Pedro pier several years earlier. The major killer was creosote, used to preserve the wooden docks.

Although Walker had smoked for 20 years, his medical history was good and there was no cancer in his family. The pension board ruled his lung cancer was job-related.

"He was a pretty tough guy. He never even had the flu. I think he called in sick once in all those years," said Los Angeles fire Capt. Jack Quinlan, a co-worker and friend of Walker's.

Because of the board's ruling, Walker's widow, Julia, was able to collect 50 percent of his salary as pension — 10 percent more than she would have received.

The case has drawn national publicity and is expected to start a flood of similar rulings.

"The first time I heard it on the radio, I had to chuckle. I wondered if Bill realized what kind of can of worms he was opening up," Julia Walker said. "I think he would be pleased inasmuch as something was done about it."

The ruling makes the lives of firefighters stricken with cancer easier, said Harry Steimer, director of the California State Fireman's Association.

"When a firefighter comes down with cancer, usually he has to go to court to prove it is job-related," Steimer said. "That may take up to three or four years. Oftentimes they can no longer work and there is no means of income. They often won't live to see these cases through; and their families can become destitute."



Linda Griggers Page, whose husband died of a rare cancer.

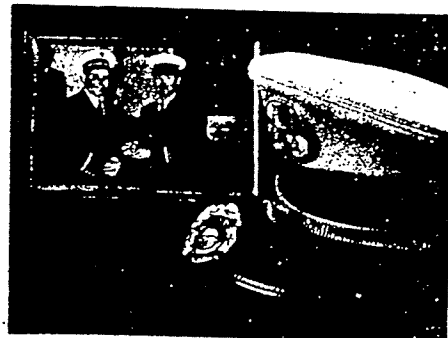
The lobbyists and expert witnesses who argued for the legislation were paid in part from the Frank Negast Memorial fund. Negast, a Buena Park fire battalion chief, died of brain cancer in 1980. A workers' compensation judge later ruled that his cancer was job-related.

Negast's widow, Pat, said the \$1,700 in the fund could not have been used for a better cause, "because others won't have to go through what we are."

That sentiment is echoed by Guyla Clayton, Rowland's widow, who has remarried. Griggers' widow also has remarried.

"Richard felt like even if we didn't win his case, we could raise the level of awareness among firefighters and that others may not have to go through all that he did to prove it," Clayton said.

"We felt like we won a victory when the Legislature adopted the bill. For that, I am really thankful." ■



Porter Griggers' hat and captain's badge rest in Linda Griggers Page's home by a picture of him receiving the badge.

Protection: How much is enough?

By Chuck Cook
The Register

Allen Hazard and Larry Holms were good friends and veteran firefighters.

Hazard was dying of cancer, and Holms, Orange County fire chief, regularly visited him at his home in San Juan Capistrano.

They talked about the old days in the fire service, when they fought roaring infernos with only wet bandanas over their faces. Friends would have to drive them home because their eyes would be swollen shut.

Hazard, 52, wondered aloud when the seed of cancer was planted in his body. Was it the blaze at the chemical plant, the one at a paint factory, or one of the many brush fires? Or was it simply the result of 30 years of firefighting?

His deathbed questions are echoed increasingly by firefighters who wonder whether their equipment is protecting them from the poisons they routinely face.

The answer is that it is not. Today's equipment, while offering better protection than the wet bandana, still fails to fend off all the toxic fumes that increasingly threaten firefighters' lives.

The masks and suits also are too bulky to be practical, and too expensive for fire departments to keep their crews in state-of-the-art equipment. And, until recently, the suits contained cancer-causing asbestos.

Most of the new equipment was designed for other purposes and adapted by firefighters who were desperate for better protection. Some manufacturers and government agencies have worked to improve the self-contained air mask, turnout coats and helmets. But these steps usually proceeded independently and resulted in an ensemble of heavy, unmatched parts.

In full battle dress — heavy cotton suits, leather boots, gloves, 35-pound oxygen tanks and face masks — a firefighter is carrying more than 60 pounds of clothing.

In brush fires, firefighters who must remain mobile for hours usually fall back on their standby: a bandana over the nose and mouth.

Most fire departments require firefighters to don masks and tanks before

they enter burning buildings. But the tanks, intended to last 30 minutes, usually empty after about 15 minutes as firefighters breathe hard.

And when they change air packs, they breathe toxic smoke.

It happened during the Nov. 29 blaze at Pacific Telephone Co. in downtown Los Angeles, when firefighters wearing protective equipment were injured by toxic smoke and acids.

Fire Inspector Ed Reed said as many as "50 to 60 of our firefighters sustained minor injuries because of battery acids in the atmosphere." Fire officials said the toxic vapor came from burning polyvinyl chloride insulating material on cables.

In a recent survey by the National Fire Protection Association, 70 percent of fire chiefs nationwide expressed the need for better protective equipment.

"We are dealing with these fires with basically the same equipment as when I joined the fire service 20 years ago," said Battalion Chief Ed Rolette of the Orange Fire Department.

Battalion Chief Jan Hagan of Anaheim said regardless of how much protective equipment firefighters have, "it is almost impossible not to be exposed."

"We know as firefighters that we are going to take a beating in a fire regardless of what kind of protective equipment we have."

Development of better equipment has been slow because needs are so specialized.

"We're faced with an unfortunate economic situation," said Linda Morse, a doctor at San Francisco General Hospital and a member of San Francisco's Hazardous Materials Response Team.

"There are only about 200,000 firefighters nationwide, and most companies do not view it as a productive research and development area."

Still, she said, "If we put someone on the moon we should be able to develop better firefighter equipment."

NASA and the National Fire Prevention Control Administration have awarded a \$480,000 contract to the Grumman Corp. of New York to study improvements. The

result has been the development of an experimental lightweight, one-piece jumpsuit designed to seal the areas around the wrist and top of the boots, keeping deadly smoke out.

In the new ensemble, the traditional firefighter's helmet has been replaced by one similar to those worn by pilots. The breathing system is compact, but it still lasts only 30 minutes.

While these experimental suits are in the test stage, other improvements are being made. New masks that seal more tightly than the traditional ones also are on the market, but they do not offer total protection from toxins.

Some fire departments, including Anaheim and Santa Ana, recently began using state-of-the-art one-hour breathing packs. But they are even heavier than the traditional packs.

Orange County's fire department is arranging to buy lighter tanks made of aluminum that subtract about 10 pounds from the weight on firefighters' backs.

The other problem is cost. The price tag for a complete outfit, including boots, suits and tanks, is about \$3,000, Orange County Fire Chief Larry Holms said. That alone prevents most budget-strapped departments from upgrading their equipment, he said.

One of the most elaborate suits available, which supposedly protects firefighters from toxic exposure, costs \$1,500 — and it is too hot, burdensome and impractical to use in most emergencies. It takes about 10 minutes to don, using two people, and is worn only by special hazardous-materials teams.

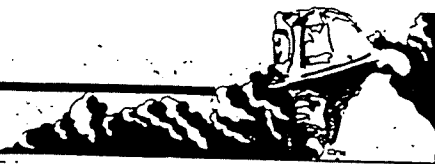
Ironically, some firefighters are wearing or using equipment made of cancer-causing materials.

A single asbestos fiber can lead to cancer, but for years, firefighters wore gear made from that fire retardant. Some clothes and blankets firefighters use still contain asbestos, especially in small departments and volunteer units, said Selina Bendix, an industry researcher in San Francisco.

Former Fullerton Battalion Chief Bob Greenwell, who has lung cancer, remembers the asbestos gloves.

"There's so many things in firefighting we took for granted. We carried asbestos gloves, and it was my job to check them out. I'd shake them and shake them and put all those fibers in the air."

The suits that replaced the asbestos ones contained MOCA, a synthetic that has caused liver and lung cancer in rats. MOCA was found in the insulation in firefighter boots, helmets and flotation devices, said Rich Duffy of the International Association of Firefighters.



ked out in protective gear are firefighters Jerry Schorr, Gary Fallan, Brent Major, Bob Feldtz and Mark Danielson of Orange County Fire Station 22 in Laguna Hills.

Firefighters' thick, yellow coats, which are not fireproof, do not protect from heat burns. Often the heat is so intense that their polyester uniforms underneath the coats melt to their skin.

"If carcinogens can be assimilated through the skin, then we're really in trouble," said Capt. Cecil Reos of the Los Angeles Fire Department.

Public health officials say better equipment would reduce the cancer rate among firefighters, which is twice that of the general public.

But for many firefighters the improved protective equipment comes too late. Richard, who died in September 1983, spent much of his last five years battling fires at industries near John Wayne Airport. In the hospital, he theorized that if good protective

equipment had been available, he would be healthy.

Before his death, he filed documents claiming his cancer was caused by exposure to toxic fumes he inhaled while performing his job.

Julia Walker, widow of Los Angeles fire Capt. William Walker, who died of cancer three years ago, said: "In the long run, it would be less expensive to put money into the equipment. Then there would be less young widows and illnesses and disability pensions.

"If they had better equipment, maybe Bill would still be a firefighter. I know he would want to be. He was going to give the department 12 more years."

Regardless of how much protective equipment firefighters have, "it is almost impossible not to be exposed."

Battalion Chief Jan Hagan of Anaheim

Dealing with dangers faced by firefighters

Research into the risks gaining a new priority

By Maria Cone and Chuck Cook
The Register

When the yellow smoke cleared and the chemicals were mopped up, Capt. John Berger looked down at his gloves. The brown pigskin had turned a vibrant purple. That was the first sign something was amiss.

Almost five years later, Berger still is trying to prove that Thiokol-Dynachem Corp. of Tustin is responsible for destroying his health and his career.

Firefighters have nowhere to turn for protection. The courts, the government and research scientists have offered little help.

Court precedent limits the rights of most firefighters to sue for damages. Scientists are uncertain what toxic fumes do to the body, but they know the fumes can lead to cancer.

And unlike most workers, firefighters cannot be assured of a safe work place by government standards.

But progress is being made, firefighters say.

Now that the sharp increase in firefighter cancer deaths and illness has appeared, fire departments and government agencies have begun to step up the research into why firefighters are dying and how to prevent it.

Fire officials in Orange County and elsewhere are setting up units of specially trained firefighters to deal with toxic chemicals.

California occupational safety officials have begun programs to keep track of how often firefighters are exposed to toxics.

And cities, such as Irvine, are passing ordinances requiring companies to disclose to fire departments what toxic chemicals are in their facilities. Berger's toxic-chemical injury spurred a landmark decision from the California Supreme Court, which ruled that a company can be sued by a firefighter if the firm fails to warn about dangerous chemicals inside.

"Before this, you could be as malicious as you want to a fireman and they couldn't sue you," said Frank McAlpine, one of Berger's attorneys.

Employed by the state's forestry division in Orange County for 10 years, Berger was inside the Tustin plant, known as Dynachem Corp., only 11 minutes in January 1979. He said he entered the fume-filled room where a vat boiled over only after he asked a man who identified himself as the company's plant manager if the chemical was safe.

"I asked what was inside and they said it's a bunch of 'poly-this' and 'poly-that.' I said, 'Hold it, boys, talk English.' That's when they said it's a mild irritant, no problem," he said.

A chemist handed him a bucket of pellets to neutralize the chemical, Berger said. He dumped it in the vat, mopped up the spill and walked outside, yanking off his face mask to report to his battalion chief before washing off.

His physicians say the few minutes he spent without his mask — breathing fumes clinging to his uniform — were enough to destroy his immune system. His uniform was so badly contaminated it was buried in a toxic-waste site.

Within a few days, Berger was sneezing uncontrollably. Blood often poured from his nose. His air passages were blocked, he had constant headaches, and he slept two hours a night at best. That lasted almost two years.

The yellow chemical boiling over in the vat reportedly was hexanediol diacrylate, used in photo-processing systems and production of computer equipment.

Dynachem officials have denied telling Berger the chemical was safe.

"As far as we know, no one ever told him what he said they told him," said Melvin Lipson, vice president of the firm. "That is an improper claim."

Lipson declined comment on use of the chemical or the cause of the boil-over, saying the case is too close to trial.

"I don't know what they were doing in there," Berger said. "It doesn't make any difference to me if they were making a chocolate cake. My injuries are the same."

Today, the 32-year-old ex-firefighter is better, but he is allergic to dozens of things,

including smoke and vegetation — an irony for a man who specialized in fighting wildfires. Daily medication eases the symptoms, but he probably never will return to his job, his physicians said.

"He was very healthy before the fire," said Dr. Dorothy Calabrese, a clinical ecologist treating Berger. "I don't think anybody knows what happened to him. We don't know a whole lot about these things."

Berger wants at least \$1 million in damages from the company. An Orange County jury is expected to hear the case in March.

Berger's colleagues throughout the state are watching the case. It and other firefighter injuries prompted the Orange County Fire Department to establish a special team to handle hazardous materials.

Each of the 10 members of the Irvine-based response team has had more than 200 hours of special training. They are called upon in situations once handled by regular firefighters with minimal knowledge of toxic chemicals.

In 1982, county firefighters responded to 56 hazardous materials incidents, ranging from natural gas leaks to chemical company fires. By early December 1983, they had handled 107 — 73 of them since the special unit was formed July 1.

The Huntington Beach Fire Department is forming the county's second special team, expected to be in full operation early this year.

Firefighters no longer rush into situations without weighing the danger to their health. In the heat of a fire or faced with a spill, firefighters must decide first whether saving property is worth contracting cancer.

"There's a certain amount of excitement to it, but once you get into it, it's no longer just fun," said Orange County Battalion Chief Chuck Nicola. "It's serious. We get hurt. Our friends get hurt. So then we become more cautious."

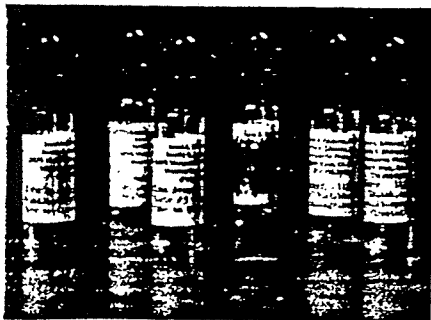
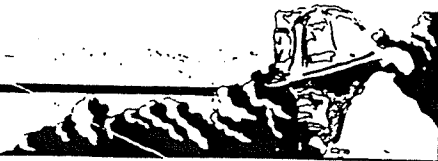
"Now, there are standards of risk," he said. "If life is involved, we take more risk. But where do you draw the line? Do we go inside to save property? We're taking a risk with our lives."

Learning more about the risk is the Consumer Product Safety Commission's priority project for 1984.

Susan Womble, who heads the project, said it will concentrate on analyzing the synthetic chemicals in household furnishings, which, she said, are responsible for half of the fire deaths reported each year.

Because each fire produces a unique combination of toxic materials, researchers cannot duplicate them in laboratories.

"Fires never do what you expect them



The medications Berger must take daily.

“I don't know what they were doing in there, It doesn't make any difference to me if they were making a chocolate cake. My injuries are the same.”

Capt. John Berger



Former firefighter John Berger: '... They said it's a mild irritant, no problem.'

DEADLY SMOKE

to," Womble said. "Unfortunately, it's not a nice, clean science that can easily be studied."

In private industry, companies must comply with safety regulations of the Occupational Safety and Health Administration. For those whose work place is raging fire, there are no regulations.

"Compared with steelworkers, coal miners and others in private sector industries, little concern is given by government to the dangers faced by firefighters," said Frances Ogasawara, a program director for the American Lung Association.

However, 24 states, including California, have established minimal safety standards for firefighters' equipment. And the California Occupational Safety and Health Administration began requiring departments to keep a record each time a firefighter is exposed to hazardous materials.

Cal-OSHA also designed a device that collects and filters toxins from the air. Selected firefighting units in Riverside, Los Angeles and San Francisco are wearing the devices, which Cal-OSHA officials hope will give them a clearer picture of the toxins found at fires.

Information that could save lives also could come from those who have died.

For years, whenever someone died in a fire but was not burned, medical examiners attributed death to "smoke inhalation." Now, fire safety officials are pushing for more detailed autopsies of fire victims.

"Medical examiners historically have never paid attention to firefighter deaths and to fire deaths," said Gordon Vickery of the Foundation for Fire Safety.

"We met with medical examiners in Washington two years ago, and they decided they were doing a terrible job in determining why people die in fires," Vickery said. "They agreed to begin to try and identify some of the specific gases that are killing people in fires."

The U.S. Department of Labor, the Environmental Protection Agency and independent researchers such as Dr. Rolf Hartung of the University of Michigan, are studying the effects of burning synthetics.

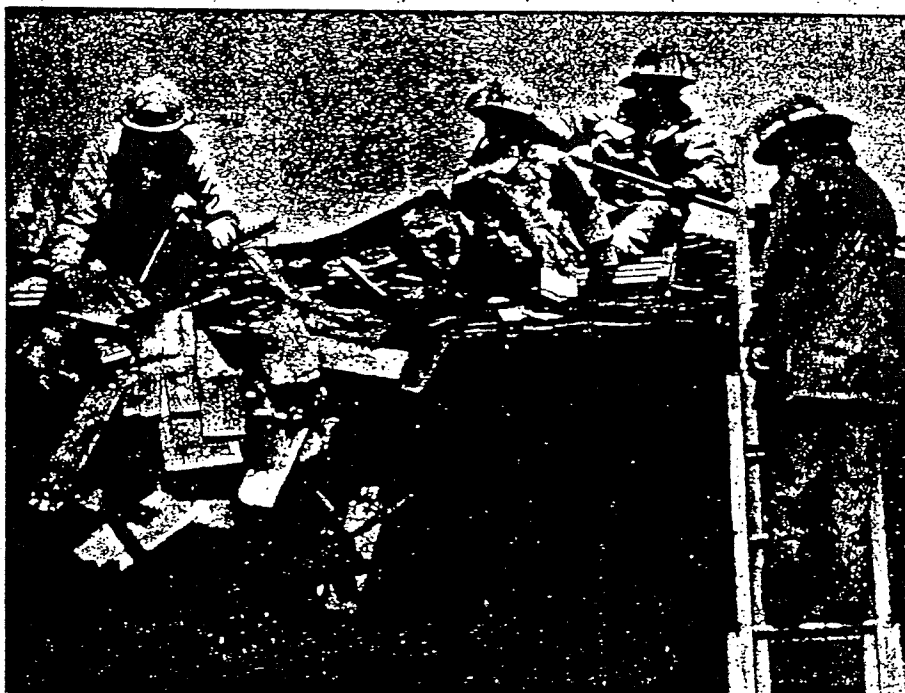
Hartung, who uses animals in his studies, said when some plastics burn, their residue "deposits easily on almost any kind of surface and is trapped in the upper respiratory tract."

Fire departments in at least 11 major U.S. cities, including Los Angeles and San Francisco, are conducting firefighter mortality studies, said Rich Duffy of the International Association of Firefighters.

The Los Angeles study, a follow-up to a

“You climb to the top in your career and then you fall down. The only thing I ever wanted to do was be a fireman. Now here I am retired in the big world. What do I do now?”

Capt. John Berger



San Francisco firefighters work to make sure a roof fire is completely extinguished.

study last year that showed the firefighter death rate had doubled between 1950 and 1980, will try to pinpoint causes.

The San Francisco study focuses on 200 firefighters who were overcome by gases from burning pingpong balls during a 1956 blaze in a sporting goods warehouse. They suffered a higher rate of cancer than the general public, but researchers still are trying to determine how the rate compares with that among other firefighters.

Although Orange County fire departments have done no such studies, some have begun requiring firefighters to undergo periodic medical checkups, including a breathing test that measures lung capacity.

Other fire departments will not hire smokers because of their additional health risks. The percentage of firefighters who smoke is at an all-time low of 17 percent in California, said Dr. Selina Bendix of San Francisco.

Fire departments also are pressing for ordinances forcing businesses and

industries to disclose potentially hazardous materials stored in each building.

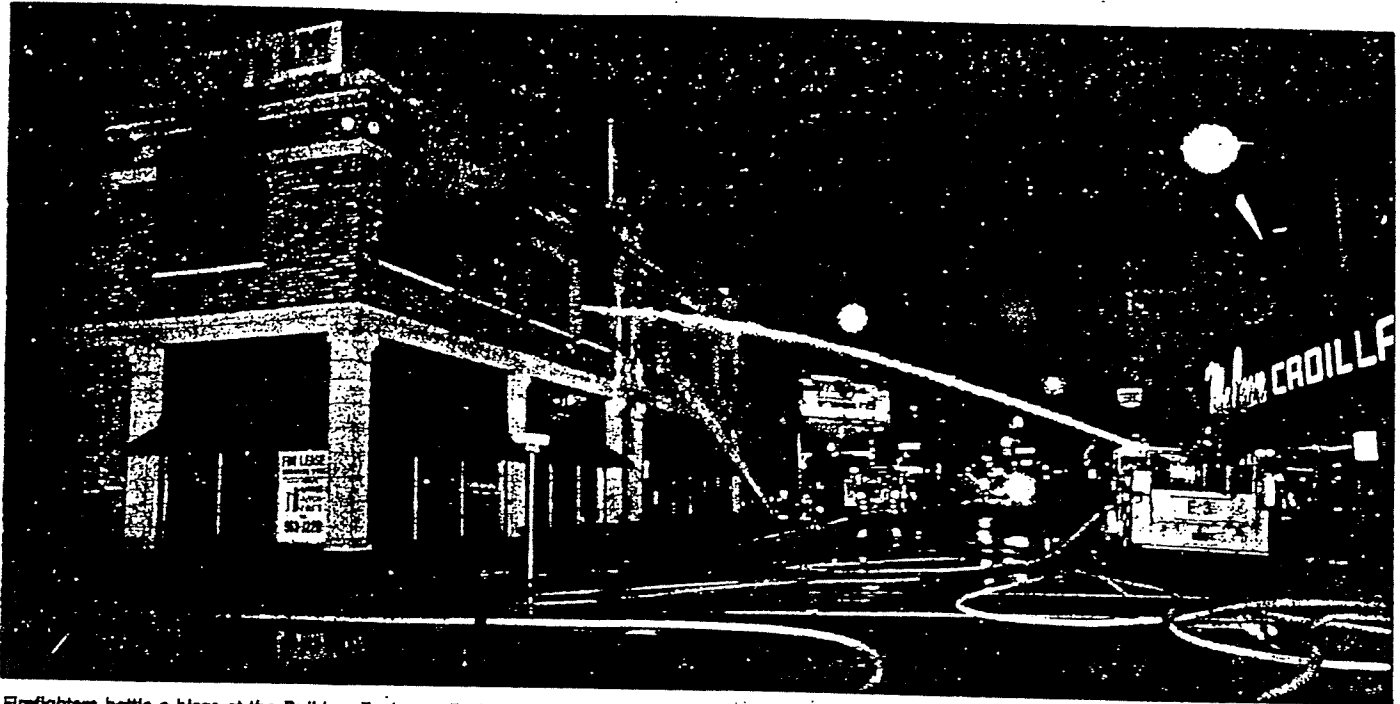
Irvine recently became the first city in Orange County to pass such a disclosure law. It requires companies that handle any of about 800 dangerous chemicals to report the quantity and qualities of the hazardous chemicals to the city within 60 days.

Orange County supervisors delayed a similar ordinance while they seek state legislation to protect the information from getting into the hands of competing businesses.

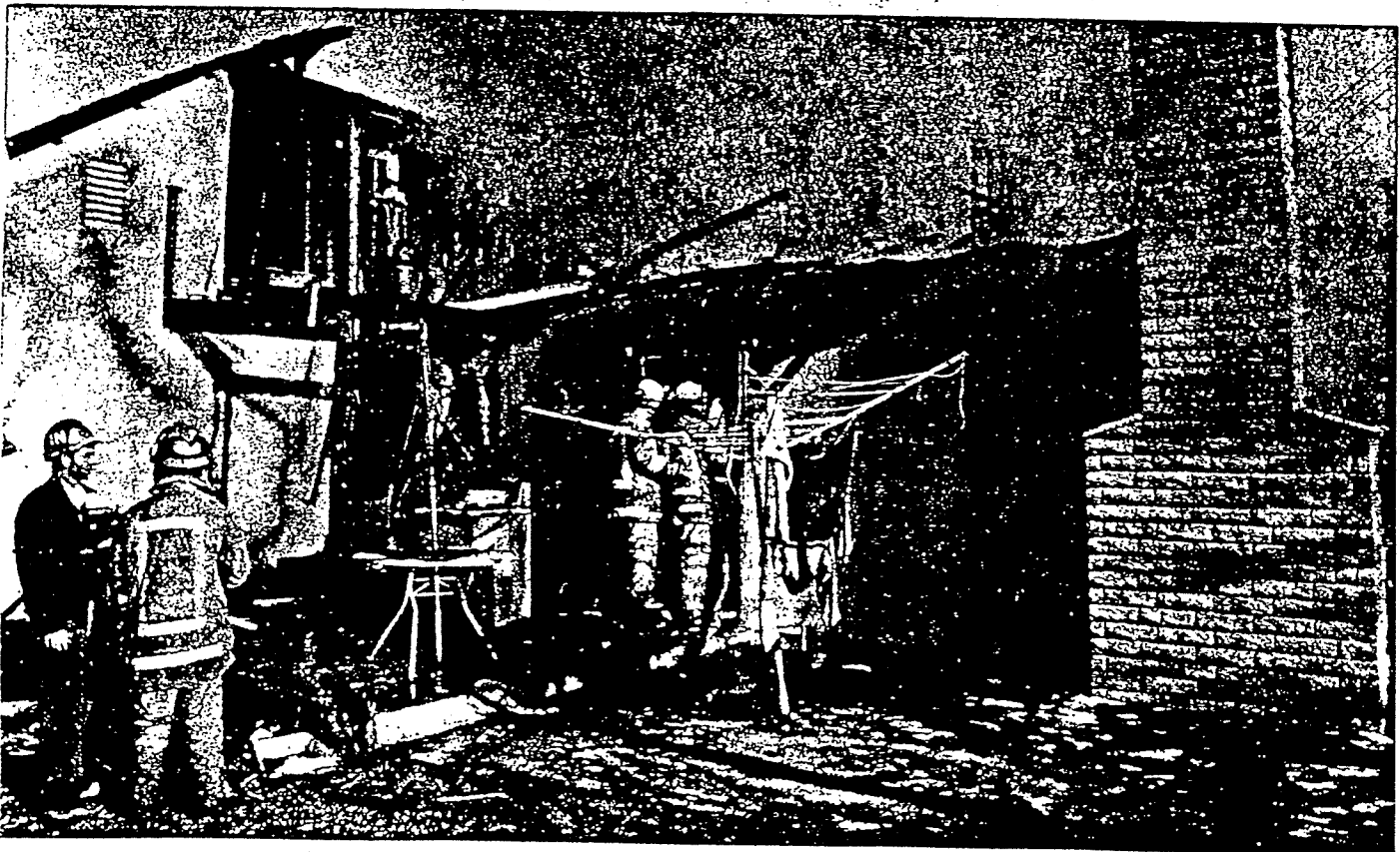
While the actions across the nation are a step in the right direction, too many careers and lives have been destroyed in the meantime — with more to come, fire and health officials warn.

"You climb to the top in your career and then you fall down," said Berger, now unemployed.

"The only thing I ever wanted to do was be a fireman. Now here I am retired in the big world. What do I do now?" ■



Firefighters battle a blaze at the Builders Exchange Building in downtown Santa Ana.



Charred rubble was all that remained of this Yorba Linda home after fire ravaged the two-story structure.



The Reporters

Chuck Cook, 39, is a general assignment reporter for The Register. A native Texan, he attended the University of Toledo and Texas A&I University. Before joining the Register, he was a reporter for the Dallas Morning News and a city editor for the Port Arthur News. Prior to that, he owned and published three weekly newspapers. He is a two-time winner of the National Investigative Reporters and Editors award and a three-time winner of the national Scripps-Howard Edward Meeman environmental and conservation writing award, among other honors.

Maria Cone, 26, is a general assignment reporter for The Register. Before coming to the paper, she was a special projects reporter for TODAY in Cocoa, Fla. She has covered stories as diverse as riots in Miami, the first launch of the space shuttle and the recovery of earthquake-ravaged Coalinga, and is a winner of the Scripps-Howard Edward Meeman environmental and conservation writing award. A graduate of University of Wisconsin, she originally is from Waukegan, Ill.



The Photographer

Rick Rickman, 32, joined The Register from the Des Moines Register in Iowa. There he was Iowa Photographer of the Year for three consecutive years. He was also the National Press Photographers' Regional Photographer of the Year in 1978. Rickman received his bachelor's degree in 1975 from New Mexico State University. He is originally from Los Alamos, N.M.

The Project

"Deadly Smoke" is the result of three months of investigation by reporters Chuck Cook and Maria Cone and was first published in December 1983 in The Register as a three-part report. The project won first place in the Scripps-Howard Meeman Awards contest, which recognizes newspapers that "have helped educate the public to a better understanding and support of conservation."

We hope our efforts help in a better understanding of a problem facing firefighters and those they serve.

The Editors

Marcy Springer, 34, is an assistant metro editor for The Register. Before joining the paper, she was an assistant city editor at The Daily Breeze in Torrance.

A graduate of the University of California at Berkeley, she also received a master's degree from Northwestern University's Medill School of Journalism.

Tom Porter, 30, is graphics editor for The Register. Porter joined the newspaper from The Charleston Gazette in West Virginia. A graduate of Southern Illinois University, he also holds a master's of journalism degree from Ohio University. Porter has also worked as a photographer for the Southern Illinoisian in Carbondale, Ill.

IAFF DEPARTMENT OF OCCUPATIONAL HEALTH AND SAFETY

SUMMARY OF THE VIEWS ON OCCUPATIONAL CANCER
IN FIRE FIGHTERS

Thank you for requesting information on Occupational Cancer in Fire Fighters. This document will serve to summarize and interpret the contents of the informational packet enclosed, as well as briefly state the views of the IAFF Department of Occupational Health and Safety on this matter.

I. Summary of Cancer in Fire Fighters

(1) It has been documented in scientific studies that fire fighters are exposed to thousands of different chemical agents during the course of their duties. Many **industrial hygiene** studies performed in fire fighters have actually measured exposures at real and simulated fires.

(2) Some of these chemicals are known to be carcinogens (cancer-causing agents). Most of the studies that have suggested that certain chemicals can cause cancer have been performed in animals, but some human epidemiologic studies do exist.

(3) Some of the chemicals to which fire fighters are exposed have been documented in epidemiologic studies to increase the risk of cancer in working populations (such as workers manufacturing or applying the agent). These include **vinyl chloride, asbestos, benzene, and polycyclic aromatic hydrocarbons (tars)**. These have been shown to cause liver cancer, lung and lung lining cancer, leukemia, and skin and lung cancer, respectively. These studies have not been performed in fire fighters, however.

(4) Several **mortality studies** have been performed in fire fighters (some of the reports are enclosed in this packet). When combining these studies, it appears that fire fighters have an increased risk (or incidence) of several types of cancer, including cancer of the **brain, rectum and colon, skin, and leukemia**. Other cancers, such as bladder cancer, have been found to be elevated in some studies but there is a lack of consistency in the findings.

The position of the IAFF Department of Occupational Health and Safety is that there is an increased incidence of some specific cancers in fire fighters.

(5) The information in the preceding paragraph may seem alarming but should be tempered with some additional knowledge. First, brain cancer and leukemia are uncommon cancers and an increased incidence of an uncommon cancer still results in relatively few cases of cancer. Secondly, rectum and colon cancer and skin cancer can be **cured** if detected and treated **early**. Finally, fire fighting will not cause any of these cancers if certain precautions to prevent exposures on the job are taken (for example, conscientious use of SCBA). Job-related cancers, like all occupational diseases, can be **prevented**.

(6) An interesting type of cancer that is surprisingly missing from the above list is **lung cancer**. A logical question is: Why don't fire fighters, who are exposed to chemicals in fire smoke identical to the lung-cancer-causing chemicals in cigarette smoke (called polycyclic aromatic hydrocarbons, or PAHs), have an increased incidence of lung cancer? This is a difficult question to answer. Fire fighter mortality studies have not found a convincing increased risk of lung cancer. This may be due to problems with the design or conduct of the studies.

(7) The issue of increased cancer in fire fighters is not without controversy, however. Some scientists feel the data are not clear; this is because of lack of consistency in the studies in their conclusions and the use of different methods and definitions. There are many epidemiologic reasons for this lack of agreement, so the IAFF Department of Occupational Health and Safety concludes that the **body of the evidence** weighs in favor of an increased incidence of certain cancers in fire fighters.

II. Definitions of Some Common Terms in Cancer Epidemiologic Research

(1) **Healthy worker effect:** In mortality studies, the incidence rate of a certain cause of death is **compared** to the incidence rate in some general population (usually the entire U.S. population). As fire fighters are healthier as a whole than the U.S. population, with certainly much less heart and lung disease (as these conditions would preclude the person from becoming a fire fighter), when rates of death from some cause in fire fighters are compared to the general rates fire fighters look to have a much decreased risk of the cause of death. This apparent decreased risk may not have been found if the fire fighters had been compared to a working population with similar health requirements (such as police). The decrease is thus an **epidemiologic artifact** that has been called the healthy worker effect.

(2) **Incidence rate:** This is the number of cases of disease in a population divided by the number of persons in the population at risk for the disease in a specified period of time (usually a year). The passage of time is an important requirement here.

(3) **Mortality study:** In fire fighter mortality studies, the causes of death are counted up for the fire fighters (the **observed** number of deaths) then compared to the **expected** number of deaths in the fire fighters if they had the **same rate of death** as some comparison population (usually the general U.S. population). These studies are performed in **cohorts** of fire fighters, some defined population of fire fighters with the criteria for study specified in advance (such as a minimum number of years employed, a certain city, etc.).

(4) **PMR (proportionate mortality ratio):** This is one common measure of the effect of fire fighting (or other jobs or exposures) on the incidence of disease in a fire fighter mortality study. The PMR looks at all the deaths in the population of fire fighters and calculates the **percent** (or **proportion**) of deaths due to a specific cause (for example, 35% of deaths were due to heart disease). This percent is then divided by the percent of deaths due to a specific cause in a comparison population. **This ratio is the PMR.** It is usually then multiplied by 100 so that PMRs above 100 mean "increased risk" (for example, a PMR of 270 is interpreted to mean that fire fighters had 2.7 times the risk of a certain cause of death). In general, the PMR is not thought to be as good an estimate of the risk of death due to a job or exposure as the SMR. PMRs are subject to many potential problems which often make them less valid epidemiologic tools.

(5) **Polycyclic aromatic hydrocarbons (PAHs):** Polycyclic means "many rings" (the molecular structure is in a ring or circle shape); aromatic means "similar to **benzene** in molecular structure"; and hydrocarbons means that the molecule consists of the atoms hydrogen and carbon. These chemicals, also known as tars, are known human carcinogens.

(6) **Risk:** Risk is expressed as a number between 0 and 1 (and if multiplied by 100 gives "**percent**"). It is most relevant for fire fighters in the context of cancer when expressed as the lifetime risk of developing a certain kind of cancer (for example, over the lifetime of a typical fire fighter, there is a 14% risk or **chance** of cancer "X"). The risk of a certain cancer in fire fighters can be divided by the risk of the same cancer in a comparison population to give a ratio of risks. If this is above 1, then there is an increased risk of this cancer in fire fighters.

(7) **SMR (standardized mortality ratio):** When the **observed** number of deaths from a mortality study (see above) is divided by the **expected** number of deaths based on the death rates in a comparison population, this ratio is called an SMR. The term "**standardized**" usually means that the effects of age (because cancer is known to increase with age, if one population is older than the other it would have an increased number of cancer deaths for this reason) have been removed by adjusting or standardizing the ages of the two populations (the two populations are the fire fighters and the comparison population).

III. Contents of Packet

Scientific Articles

Note: These articles may be difficult for lay people to read and understand completely.

- 1) Bureau of Health Statistics, Research and Evaluation, Massachusetts Department of Public Health. Cancer Incidence Among Massachusetts Firefighters 1982-1986. March 1990.

This study examined cancer incidence in fire fighters, compared to the police and the State as a whole. It found significant excess of melanoma, bladder cancer, and non-Hodgkin's lymphoma. Fire fighters were also found to have excess pancreatic cancer and leukemia when compared to the police. The findings of this study are consistent with other studies of fire fighter cancer incidence and adds weight to the existing body of evidence that fire fighters are at increased risk of developing occupationally induce cancers.

- 2) Heyer N. Cohort Mortality study of Seattle Fire Fighters, 1945-1983. February 1988.

Particularly noteworthy is the summary of fire fighter cancer mortality studies on pages 16-19 and the results compared to other studies on pages 41-44.

- 3) Vena JE, Fiedler RC. Mortality of a municipal-worker cohort: IV. Fire Fighters. Am J Industrial Medicine 1987; 11: 671-684.

This is one of the better studies in the field. It is somewhat difficult to read, but armed with the knowledge that an SMR above 100 means "increased risk" of that cancer, the abstract (before the introduction on the first page) is useful to read.

- 4) Rosenstock L, Demers P, Heyer N, Barnhart S. Northwest fire fighter mortality, 1945-1983. September 1987.

This document has a summary on page 1 and an excellent review of the topic of cancer in fire fighters on pages 4-9.

- 5) Feuer E, Rosenman K. Mortality in police and fire fighters in New Jersey. Am J Industrial Medicine 1986; 9: 517-527.

This is a study that measured "PMRs" which are generally thought to be less scientifically useful than SMRs. Its strength is that it compared fire fighter mortality to police mortality, a better comparison (these two groups are more similar except for their exposures) than fire fighters with

the general population. This addresses the issue of the "healthy worker effect."

6) Lewis SS, Bierman HR, Faith MR. Cancer mortality among Los Angeles City Fire Fighters. February 1983.

This is a reasonably easy to read and contains good discussions of problems interpreting these types of studies (pages 6-7) and mortality patterns (pages 8-9).

IAFF Pamphlets

1) Occupational Cancer and the Fire Fighter. Department of Occupational Health and Safety, IAFF, 1982.

This is a useful summary of the most important issues in easily understood terms. It is strongest from the perspective of exposures.

Articles from the Lay Press

1) "Deadly Smoke", by Chuck Cook and Marla Cone. The Register, Santa Anna, CA, December 1983.

This is an emotional account of illness in fire fighters.

2) "Careers in Ashes", by Paul Rubin. New Times, Phoenix, AZ, August 1988.

Another emotional account of cancer in fire fighters which includes discussions of many important topics in the area.

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Testimony
of
Speaker Pro Tem Bill Reardon

HB 2970
House Appropriations Committee
March 24, 1992

Thank you, Mr. Chairman and members of the committee. I appreciate your attention to HB 2970 which addresses the issue of the waiting period for KPERS disability benefits. This issue was brought to my attention by Mr. Charles Rentfro, of Kansas City, Kansas, who has experienced the negative impact of the current law.

Mr. Rentfro came to me requesting legislation to correct what I agree is an injustice in the law. To his credit, Mr. Rentfro did not ask for this change for his own personal benefit, but rather for other future KPERS disability beneficiaries.

To me, this is a simple matter of justice. This amendment is necessary to assure that disabled persons are not penalized for attempting, in good faith, to return to work after being disabled from an injury or sickness.

Under current law, there is a 180 day waiting period before an individual is entitled to long-term disability benefits. The problem arises when a person who has been off on disability for a period short of 180 days returns to work. If it becomes apparent that the person is unable to continue working and is sent home, the 180 day waiting period starts over. Thus you could have an individual, who is disabled as a result of sickness or injury, who has been off of work for 179 days. He truly believes that he

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Attachment 4

is capable of returning to work and attempts to do just that. However it quickly becomes apparent to everyone that the worker is still suffering from the disability and is unable to perform his duties. The worker is sent home the same day that he had returned to work. Under current law, the worker, who would have been entitled to long-term disability benefits had he chosen not to try to return to work, will now have to wait an additional 180 days before receiving benefits which would have been rightfully his.

The Social Security Administration follows a similar plan as I am proposing. Under Social Security regulations, the waiting period for long-term disability is approximately 180 days depending on what day of the month the disability starts. If a worker returns to work but is later unable to continue due to the earlier disability, they are not penalized for the period they are unable to work. The Social Security Administration is concerned only with the "date of onset" of the disability. The waiting period does not start over unless it is a different disability that causes the loss of work.

Under the proposed amendment, the waiting period for long-term benefits would not start over until six months have passed from the time the individual returned to work. After six months, the disability would be deemed the result of a new sickness or injury and the waiting period would start all over again.

The amendment is necessary to protect an individual who, in good faith tries to do the right thing. We should not penalize the individuals that are trying to return to the work force.

I respectfully ask you to pass HB 2970 favorably out of your committee.



The Security Benefit
Group of Companies

Security Benefit Life Insurance Company
Security Benefit Group, Inc.
Security Distributors, Inc.
Security Management Company

700 Harrison St.
Topeka, Kansas 66636-0001
(913) 295-3000

March 24, 1992

Subj: House Bill No. 2970

Dear Chairman and Committee Members:

Security Benefit Life Insurance Company is a 100 year old Kansas company. It is the 28th largest mutual life insurance company in the country. Its downstream holding company, Security Benefit Group, Inc., has nearly 4 billion dollars in assets under management. Security Benefit Life is a third party administrator for the Kansas Public Employees Retirement System (KPERS). SBL administers KPERS' disability plan. SBL opposes House Bill No. 2970 which would eliminate the requirement of continuous total disability during the 180 day elimination period.

The elimination period is a standard provision in any long-term disability plan. It is the period of total continuous disability that must elapse during any disability before benefits commence.

There are at least three justification for an elimination period. First, most people have sick leave plans or some financial resources to call upon in case of short periods of illness or disability and do not need immediate coverage. Second, the sooner benefits are provided, the greater the cost of the coverage. Lastly, the elimination period is needed to avoid the expense of claims administration with respect to the short claims which fall entirely within the elimination period.

The elimination period is included in a policy for the purpose of relieving the employer or administrator of the expense of having to consider and investigate numerous premature claims. Since a certain amount of expense must be incurred in the processing of any claim, it would be more costly to evaluate several short periods of disability that eventually total 180 days than it would be to evaluate one continuous total period of disability.

The length of the elimination period is tied to the length of the maximum indemnity period. Ordinarily, short elimination periods go with short indemnity periods. Long elimination periods go with longer indemnity periods. Elimination periods of 180 days are common in long-term disability plans that provide 5 year or to age 65 indemnity periods. Even Social Security has a waiting period of five consecutive months. (42 U.S.C. Sec. 423)

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Elimination periods in long-term disability policies are intended to compliment, but never duplicate, short-term benefits provided by an employer's wage continuation or sick leave plan. In our current "fringe benefit conscious" society, most employers provide continuation of salary for short periods of disability. More and more companies are offering elimination periods of 180 days and 365 days as a reflection of the continued extension of short-term disability benefits under employer salary continuation programs.

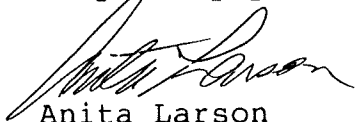
If this proposal is approved, the 180 day elimination period could be accumulated over an indefinite period of time as long as each period of disability is due to the same or related cause and as long as the member did not return to work for more than a 6 month period. Every time a state employee was off work, it would be a potential disability claim.

In order to document the period of disability, a member would have to file a disability claim even if it were only for 1 day. This would require registering many unnecessary claims and a tremendous amount of extra handling for people who might not ever be off the full 180 day period. It would also require the employers and/or KPERS to keep records of these short periods of disability. If it is decided that employees do not have to submit claims for each time they were off and the 180 day elimination period extended over a number of years, it would be very time consuming and in some instances impossible, to provide evidence that total disability had existed or even be able to obtain medical documentation of such total disability.

This process would prove more costly, not only for KPERS but also for each individual employee because employees are required to pay for any expenses associate with completion of the claim forms. In any situation where the elimination period is accumulated over an indefinite period of time, without a periods of continuous total disability of 180 days, the claim processing would be more difficult, more time consuming, and more costly.

Thank you for your time and consideration. If you have any questions, I would be happy to discuss them with you.

Very truly yours,



Anita Larson
Assistant Counsel
Security Benefit Life Ins. Co.