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News Digest

Date: Sept. 27 & 28, 2001

Includes: 9.10.01 - Present

THE TIMES HERALD RECORD

Free press run amok

After reading Sunday's paper, I'm appalled that this paper would allow a reporter to print an article indicating potential terrorist targets, in our own back yard. Doesn't she think that the cowardly, terrorist thugs read newspapers?

This article features a map of the NYC watershed and goes in depth about two other targets. Don't you and she know that we are at war? Oh, I know you'll hide behind the First Amendment and your right to a free press. But I see this as your reporter and your paper as collaborating with the enemy, an act of treason, during war (according to our president, we are at war).

I urge your paper and all other news media to cease this type of irresponsible reporting, now and forever. God forbid that one of these targets comes under attack in the future. If so, your paper and reporter should be held accountable as collaborators.

Dennis J. Wood
Cornwall-on-Hudson
U.S. Navy veteran

Aiding the enemy?

The editors of the TH-R were very irresponsible in printing some of the articles presented in the Sept. 23, edition. Not only did you point out several weak points in our area that would be vulnerable to terrorist attack, you even provided a map of where they are located. In time of war, isn't that considered to be giving aid to the enemy?

Did you really feel it was in the best interest of the United States to identify more targets for terrorists in this area? Didn't you think that you might be giving these people help, or possibly giving others the idea that they could wreak havoc on Orange, Rockland and Sullivan counties just by tampering with these local facilities and resources?

God forbid that anything happens following your articles - but if something does, the people of the Hudson Valley should lay the blame at your doorstep, as you pointed the way. Shame on you.

Jane B. Campbell
Chester

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Compiled by the bureau of Public and Intergovernmental Affairs • (718) 595-6600

Scientists: Water supply unlikely terrorist target

ALBANY (AP) — Slipping something into our waterways may be the least effective way to kill large numbers of people — making it an improbable target for terrorists, according to the director of a center that studies bioterrorism.

"It would require such a tremendous amount to be effective, a watershed would not be my first choice," said Greg Evans, director of the Center for the Study of Bioterrorism and Emerging Diseases at St. Louis University.

The center is funded by the federal Centers for Disease Control and Prevention.

As a precaution after the Sept. 11 terrorist attacks in New York, Virginia and Pennsylvania, the New York City Department of Environmental Protection has closed its reservoirs indefinitely to all fishing, hiking and boating and blocked access to some roads, including those at the Ashokan Reservoir.

The city has also hired more enforcement officers and increased monitoring of its 1,970 square miles of water, said Jennifer Post, spokeswoman for the state Department of Envi-

ronmental Conservation in Albany.

Most cities use chlorine to clean water before it flows through residents' sinks, which would "kill off or tremendously weaken" biological agents, Evans said.

And most chemical contaminants can be detected through sight or smell, said Riverkeeper Donna Lisenby with the Catawba River Foundation based in Charlotte, N.C.

Besides, Evans said, public systems move vast amounts of water each day. Unless a terrorist could dump large quantities at a time, the dilution would foil plans for immediate mass destruction.

Lisenby said limiting access to the public's drinking water may be the easiest and best way to guard against terrorist attacks.

Elements such as plutonium — which could go unchecked through treatment systems — would not kill people outright. But it would contaminate the water supply and make the whole system useless, leaving cities without running water.

"Those are weapons against economics," Evans said.

Daily Freeman
Sept. 27. 01

NOTEBOOKS

Farm Vendors Get a New Spot, in Brooklyn

The greenmarket outside Brooklyn's Borough Hall is open on Tuesdays and Saturdays. But yesterday, passersby saw the familiar tents of ... a greenmarket? The farmers who were there had lost their usual spot at the World Trade Center.

The Council on the Environment of New York City, which runs the city's greenmarkets, is scrambling to find new locations for 43 farmers displaced from the attack site and from markets that subsequently closed in TriBeCa, Bowling Green, and Dag Hammarskjöld Plaza. Borough Hall has added Thursdays to accommodate them.

"They just decided to get us something, somewhere to go," said Kerner Kernan, who left behind his stands, scales, money and produce when he fled the trade center on Sept. 11. The farmers at the 12 stands there that day all escaped unharmed, although some also lost their trucks.

Business in the new location has been fair, Mr. Kernan said, but "nothing like the World Trade Center," where for 18 years his family had built up a clientele. "A lot of the customers, I know," he said. "I hope most of them are all right."

TARA BAHRAMPOUR



Ruby Washington/The New York Times

Altogether, the attack displaced 43 farmers from city greenmarkets. Some have moved to Borough Hall in Brooklyn. One had been at the World Trade Center for 18 years.

NUT
9/28/01

Local Area Rallies In Support

by **Gabrielle Buel**

In small ways and large ways—even enormously—all over the local area, the American flag is waving proudly and defiantly. Fluttering from car antennas, hanging outside of homes and shops, propped in window boxes, grasped in the small hands of a child at a vigil, the symbol of patriotism is being shown as it has not been felt in decades.

Many displays are accompanied by heartfelt words, phrases and prayers. Some are a little more intense. Churches have been filled more noticeably and prayer services have been, and most likely will continue to be, held throughout the area. Evening candlelight vigils in several villages have brought out gatherings of residents to sing and to just be together.

Numerous businesses are responding to the critical needs of the victims, survivors and rescuers in New York City by putting together drives and collecting funds. The Delhi Quickway is conducting a fundraiser which will send one cent for every gallon of gasoline purchased up until midnight Sunday and will donate the proceeds to the American Red Cross. All Quickway Citgo stations are involved in this effort.

The Delhi Ames store is forwarding funds generated from the purchase of flag stickers placed on the front store window to the Salvation Army.

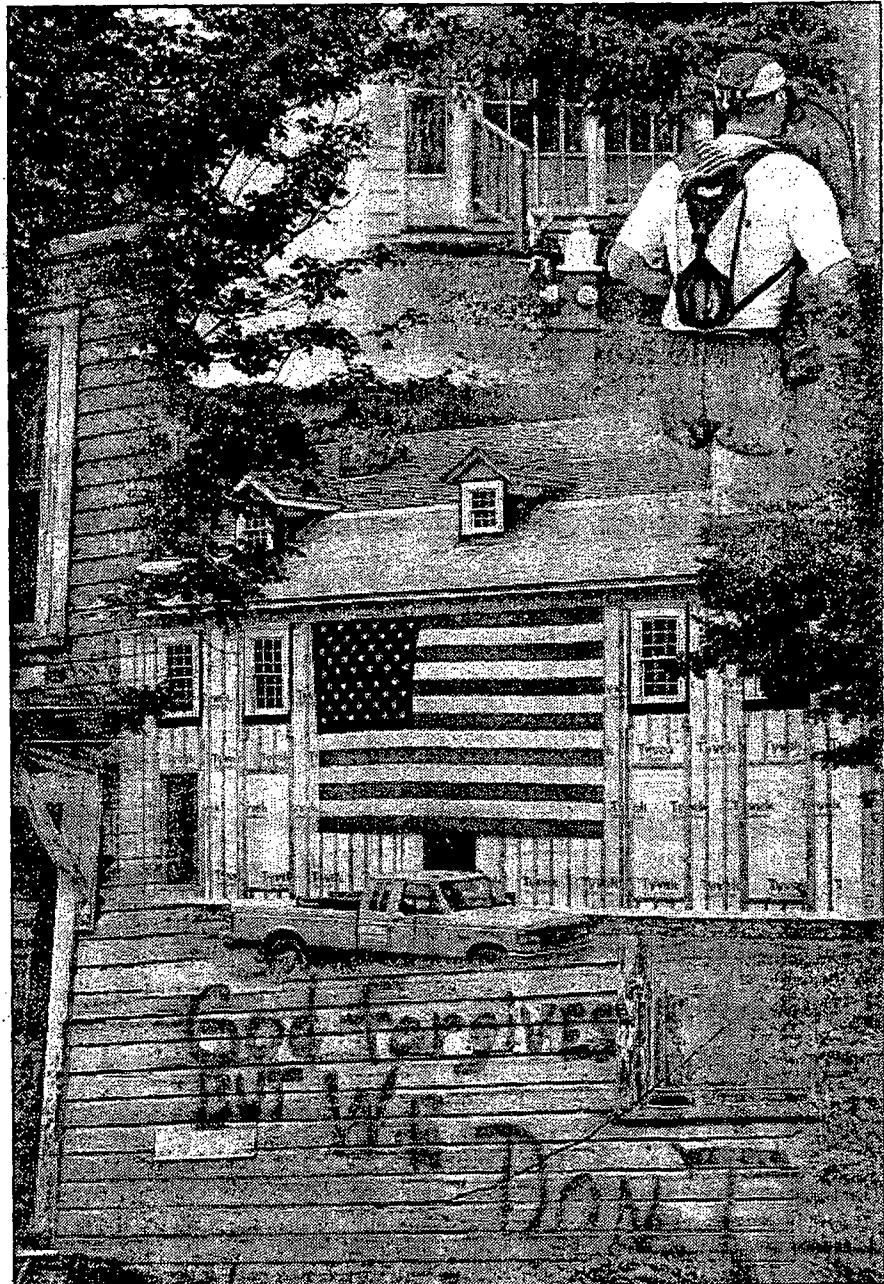
At a special meeting held Tuesday night, the membership of the Delhi Fire Department opted to donate funds recently raised through a couple of fundraisers to the New York City Fire Department's Widow's and Children's Fund. Chief Verspoor said: "We felt that we needed to do something. There are several entities that are in need now, and as firefighters, we felt it was appropriate to donate to help our brother firefighters and their families."

\$5,000 is heading to New York City from the Delhi Fire Department.

From the town of Delhi, reported town clerk Bryan Fitch, it was unanimously agreed by town board members on Thursday to send \$10,000 to the work relief effort in the city. This money comes from the town's Good Neighbor fund.

Area youth are getting involved as well. Delhi Scout Pack #33 will

have a table at this weekend's Harvest Fest at which they will be selling chances for anyone who wishes to donate towards the World Trade Center Fund. These donations will give a chance to win model trucks given by Napa and Quickway, of which there is an estimated 20 such trucks. The drawings for these trucks will be at the pack's meeting Tuesday evening at the American Legion.



photos by Gabrielle Buel

Delhi County Times 9-21-01

DC 37 Eyes Offices Asbestos Hazard At Rescue Site Feared

By WILLIAM VAN AUKEN

As rescue and recovery efforts continue at the World Trade Center disaster site and as city employees begin going back to work in lower Manhattan, union officials and health and safety advocates have expressed growing concern about possible environmental contamination from the cloud of smoke and dust that descended over the area.

The city's Health Department issued a statement last week calling the level of asbestos in the air "below the threshold of concern," and assured the public that the "risks for any short or long term adverse health effects are very low."

Workers Have Doubts

For city employees and others working near the disaster site, however, the concern is very real.

"I figure that 20 to 30 years from now, you're going to have a lot of cops and firefighters coming down with cancer from the stuff we're breathing in here," said one Police Officer guarding 40 Rector St., a city office building just blocks from the smoldering remains of the Twin Towers.

His partner, who suffers from asthma, said she has experienced increased difficulty breathing while assigned to the area and is constantly using her inhaler. When asked if they had been supplied with masks, both officers said no.

The building itself is unoc-



BILL HENNING: Asbestos not only worry.

cupied and surrounded by a chain-link fence. While workers hosed down windows and doors on the first floor, upper story windows are still coated with a layer of rain-streaked ash and dust.

Up the block, a National Guardsman said he was also worried about contamination in the air he is breathing. He was equipped with a mask, but was not using it. "I was in there for 24 hours straight using a mask," he said. "After a while, you can't take it anymore. They're uncomfortable and you can't talk."

Health and safety experts have recommended the use of respirators with rubberized masks and replaceable cartridges for those involved in work at Ground Zero. Disposable respirators

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should be replaced after each shift or whenever breathing through them becomes difficult.

In practice, however, many of the workers have gone without any protection, while others have donned only dust masks, which provide no protection from asbestos, silica and other hazardous particles.

Long-Term Damage

Prolonged exposure to asbestos particles can result in asbestosis, a scarring of the lung, which progressively restricts breathing. The dis-

ease has a latency period of between 15 and 30 years. Both lung cancer and mesothelioma, a cancer of the pleural lining exclusively related to asbestos exposure, can also result. Those who smoke and suffer asbestos exposure are particularly vulnerable to lung cancer.

In addition to seeking to protect the health of those uniformed service workers deployed on and around "the pile," public employee unions have voiced concerns about the safety of their members who are being called back to work in nearby office buildings.

District Council 37 health and safety representatives met with city and state officials Sept. 20 to discuss plans to reopen a number of office buildings that may have been affected by the disaster.

"We are extremely concerned about asbestos and other possible contaminants," said Lee Clarke, senior safety coordinator for DC 37. "We want to be very comfortable that these buildings are really ready to be reopened and that the city is not moving prematurely."

Safety Precautions

The Giuliani administration, she said, has developed a series of protocols to determine if a building is fit to be reoccupied. These include both inspection for structural stability as well as an assessment of any presence of hazardous materials as a result of the Trade Center collapse.

The protocols, she said, have been evaluated and approved by the state Public Employee Safety and Health Division.

"This is a highly, highly unusual situation," said Ms. Clarke. She added that the union would monitor which buildings were approved for reopening by the city and would send in its own inspectors immediately thereafter.

DC 37 has developed its own checklist for health and safety, and will send its safety representatives on inspections throughout the week. The union was planning on going to buildings Sept. 24 that the city has already opened, including 1 Centre St. and 66 John St.

Err on Cautious Side

"We're trying to be proactive rather than reactive," said Ms. Clarke. "We don't want to be in a situation where we find out that a building is unsafe after they've moved people in, and then have to pull them out."

The New York Committee

The Chief Newspaper
Sept 28.01
P. 10/2

for Health and Safety and the AFL-CIO New York City Central Labor Council have also reported receiving a large volume of questions from workers and their unions about safety and health hazards stemming from the disaster, particularly contaminated air.

Bill Henning, who chairs NYCOSH and is the vice president of Communications Workers of America Local 1180, said that the organization has issued a detailed fact sheet counseling workers on what must be done to avoid exposure to airborne dust and contaminants both at the rescue site and in surrounding buildings.

'Want Filters Changed'

One key recommendation is that the dust never be swept or handled when it is dry, and that vacuum cleaners be used only if they are equipped with high-efficiency filters. Otherwise, cleaning merely causes settled dust to again become airborne, posing a threat to those who breathe it.

"We're also calling for all air-conditioning filters and HVAC systems to be changed," he said. The city's unions usually meet with representatives of the Citywide Office of Safety and Health, a division of the Department of Citywide Administrative Services, on major concerns. "There are so many things going on, we have not been able to get together yet," the CWA leader said. "We are worried about asbestos and about a lot of other things."

High Asbestos Content

NYCOSH has disputed the claims by the city's Health Department and the U.S. Environmental Protection Agency that the dust and ash that has blanketed the area pose no danger. Members of the EPA's Environmental Response Team acknowledged last week that they had detected asbestos contamination levels that slightly exceeded safety standards set by the U.S. Occupational Safety and Health Administration.

"The original plans for the World Trade Center called for the use of 5,000 tons of asbestos foam insulation," said Jonathan Bennett, a spokesman for the independent health and safety organization. "They used it up to the 40th floor of the north tower and the 15th floor of the south tower, so probably at least 1,000 tons were sprayed on." In addition, he said, other asbestos would have been used in wrapping pipes all the way up to the top of the two structures.

"It doesn't burn up and it doesn't dissolve in the rain," said Mr. Bennett. He noted that the levels of asbestos in the air in the area surrounding the demolished buildings were high, adding that "there are no known safe levels of exposure to asbestos."

NYCOSH Takes Look

NYCOSH has sent its own industrial hygienists to the disaster site to evaluate conditions in the area. David Neumann, one of the hygienists, said that the organization has taken its own air samples, but is still waiting for results.

"Clearly there is asbestos in this area," he said. "The EPA and OSHA have done samples and said that they are not at levels of concern, but they haven't defined what that means. The potential for damage is probably low for most people, but the inhalation of as little as one asbestos fiber has the possibility of triggering a catastrophic illness."

Breathing what he called "nuisance dust" also has the potential of causing illness, particularly among people with pre-existing heart or lung problems.

Not Careful Enough

Mr. Neumann said that it appeared that there had been a marked increase in the use of respirators among rescue workers late last week. "Still many, many people are not using them," he added. "And many of them are using inappropriate respirators or ones that are not properly fitted. They haven't been trained to use them properly."

Concern for the health of those working at the site should be an increasing priority, he argued. "This is essential and very doable," he said. "We are, unfortunately, getting past the point where we're going to be pulling live people out of there, and there is not the need to expose people to these kind of dangers."

The NYCOSH fact sheet on health and safety concerns stemming from the World Trade Center disaster can be downloaded from the organization's Web site at www.nycosh.org.

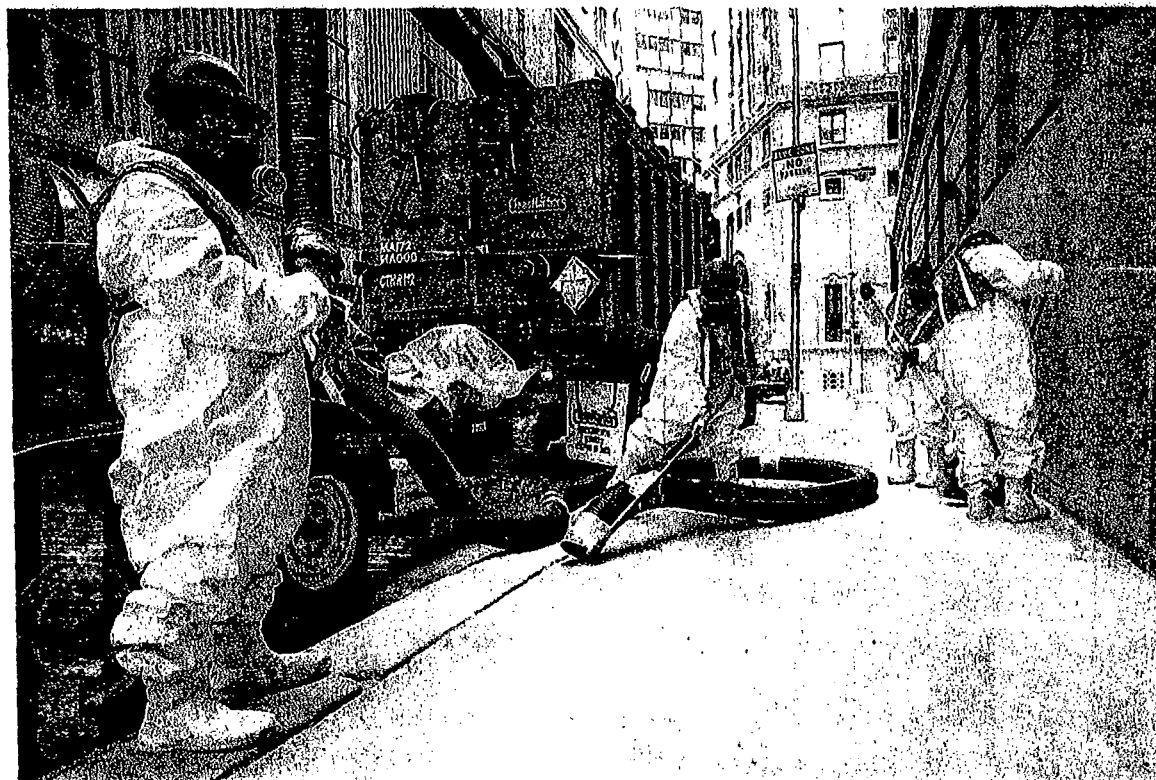


The Chief-Leader Gary Fabiano

UNHEALTHY ATMOSPHERE: Police Academy rookies stationed near Ground Zero take necessary precautions by donning masks to protect their lungs against the noxious chemicals released in the air around the World Trade Center by the plane crashes and the fires and building collapses that resulted.

Asbestos...
P. 2082

Dust Is a Problem, but the Risk Seems Small



Justin Lane for The New York Times

The workers vacuuming up dust in Lower Manhattan needed to wear protective masks and special gear.

By ANDREW C. REVKIN

As thousands of workers streamed back into Lower Manhattan yesterday for the first time since the terrorist attacks, federal officials said they faced no significant health risk.

Low levels of asbestos were detected in some dust and debris close to the wreckage of the World Trade Center, the officials said, but there was no evidence of danger, except to search crews moving the rubble.

"We haven't found anything that is alarming to us," said Mary Mears, a spokeswoman for the Environmental Protection Agency.

As an extra precaution, officials recommended that businesses in the area clean the filters on air-conditioners and use vacuum cleaners equipped with filters for fine particles — those labeled HEPA — to avoid scattering any hazardous dust.

Officials recommended similar precautions for apartment dwellers, saying they should use vacuums with particle filters, mop floors and use wet cloths to dust, and wash clothing soiled by the ash and dust separately from other laundry.

Over all, though, officials said, the only significant health risk remained near the destruction. Workers there should wear masks and protective gear and clean their

shoes before heading home, they said.

Some officials expressed frustration because many of the workers — most of them hard-bitten construction workers — were ignoring their recommendations.

"In the early hours of a rescue, the urgency of these efforts leads people to forget their own health and safety," said Dr. Neal L. Cohen, New York City's health commissioner. The city will add more safety officials to its teams this week, he said, to make sure that more searchers wear protective attire.

Tina Kreisher, a spokeswoman for the E.P.A., said that ample gear was available at the attack site but that because of the heat and stress, workers commonly refused it.

"There are small pockets of asbestos," Ms. Kreisher said. "The concern is there — not for the city, not for residents, but definitely for these workers." Many workers may be there for months, she said.

Federal officials said they would set up at the site equipment able to clean 1,500 workers twice a day.

Agency officials and independent experts tried to quell rumors about other hazards, including the possibility that the fires might have turned freon from air-conditioners into a poisonous gas called phosgene.

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DUST IS.....

The chemical reaction that generates phosgene is possible in extremely hot flames, but not in fires like those still burning, agency officials said. Any gas generated by the initial inferno has dissipated, they said.

When rescue crews prepare to enter buried pockets where survivors might be found, they generally test the air for organic compounds like freon, which can be suffocating because it is heavier than air and can build up in pockets, officials

said. Suspect air samples are sent to a mobile laboratory for analysis.

Dr. Cohen said that continual monitoring of the crash site and rubble with Geiger counters had turned up no evidence of radiation, which might be emitted, for example, from medical X-ray equipment destroyed in the attacks.

Many officials and experts added that the decomposing bodies of victims of the attacks posed no danger.

"A dead body is not going to give you a disease," said Dr. Paul Blake, the state epidemiologist for Georgia. Dr. Blake, who was chief of the enteric diseases branch at the federal Centers for Disease Control and Prevention, added, "You have a multiplication of bacteria in decomposing bodies, but they are the same bacteria we all have within us, in our bodies and on our skin."

To try to catch any surprises, the Environmental Protection Agency deployed monitoring and testing equipment around Lower Manhattan over the weekend, including a mobile laboratory used during the Persian Gulf war to check for gas or biological attacks, officials said.

There were no signs that the attackers had dispersed any toxic agents, officials said, and the laboratory was focused on identifying conventional kinds of pollution.

Many dust samples collected near the attack site last week contained 1 percent to 2 percent asbestos, agency officials said. That concentration is not high enough to create a short-term risk of lung disease, the officials said. Nonetheless, the agency sent 10 trucks into the area over the weekend equipped with filtered vacuums that suck up contaminants without spreading them.

For residents and people working nearby, the air appeared to present little risk, officials of the Occupational Safety and Health Administration said. The agency sent crews around the financial district late last week wearing small devices that sample air and found no significant signs of asbestos. Other tests



James Estrin/The New York Times

John Kessler and Julia, his 7-year-old daughter, took precautions so they could breathe easier when the air was tainted by smoke.

were done for air inside buildings in the financial district.

"Our tests show that it is safe for New Yorkers to go back to work," said a statement from John L. Henshaw, the assistant secretary of Labor for occupational health. "Keeping the streets clean and being careful not to track dust into buildings will help protect workers from remaining debris."

Over the weekend the Environmental Protection Agency parked five air sampling systems near the crash site and put another one on Canal Street to monitor any drift uptown. The systems will measure asbestos, lead, PCB's and other harmful compounds during the cleanup, agency officials said. Other samples were being taken at established pollution monitoring stations in Lower Manhattan and Brooklyn.

Dr. Philip J. Landrigan, the chairman of the department of community and preventive medicine at the

Mount Sinai School of Medicine, generally agreed with the federal officials' views, adding that rescue workers who did not wear protective gear ran the highest risk.

Dr. Landrigan, who has often worked to highlight health dangers in the environment, said the public faced little risk. "People who live in Lower Manhattan and who work there are certainly going to be exposed to dust," he said. The dust, from pulverized building materials, could cause bronchitis or asthma attacks in children or vulnerable adults, he said.

"But having said all that," he added, "I don't think we are looking at a situation that is in any way life-threatening."

Some office workers were taking no chances. One woman rode the commuter train from Westchester County yesterday morning carrying a personal air-filtering machine for her office in the city.

PHOTOGRAPH

Haunting Question: Did the Ban on Asbestos Lead to Loss of Life?

By JAMES GLANZ
and ANDREW C. REVKIN

As the World Trade Center was being built in the late 1960's and early 1970's, scientists were learning that asbestos fibers in materials commonly used to fireproof steel beams could cause cancer in workers and bystanders who were intensively exposed to the fibers, especially around mines and manufacturing plants dealing with asbestos.

Anticipating a ban, the builders stopped using the materials by the time they reached the 40th floor of the north tower, the first one to go up.

Now some engineers and scientists — including at least one whose research supported an asbestos ban in New York City — are haunted by a troubling question: were the substitute materials as effective in protecting against fire as the asbestos-containing materials they replaced?

Asbestos, a fibrous, silicate mineral, was highly prized as a fireproofing component because of its high melting point and its resistance to chemical breakdown. It also conducts little heat and its fibers create strong, supple materials.

The question haunts those engineers and scientists, but not because they think asbestos insulation might have ultimately preserved the towers' steel beams and trusses, which buckled in Tuesday's infernos, causing the towers to collapse.

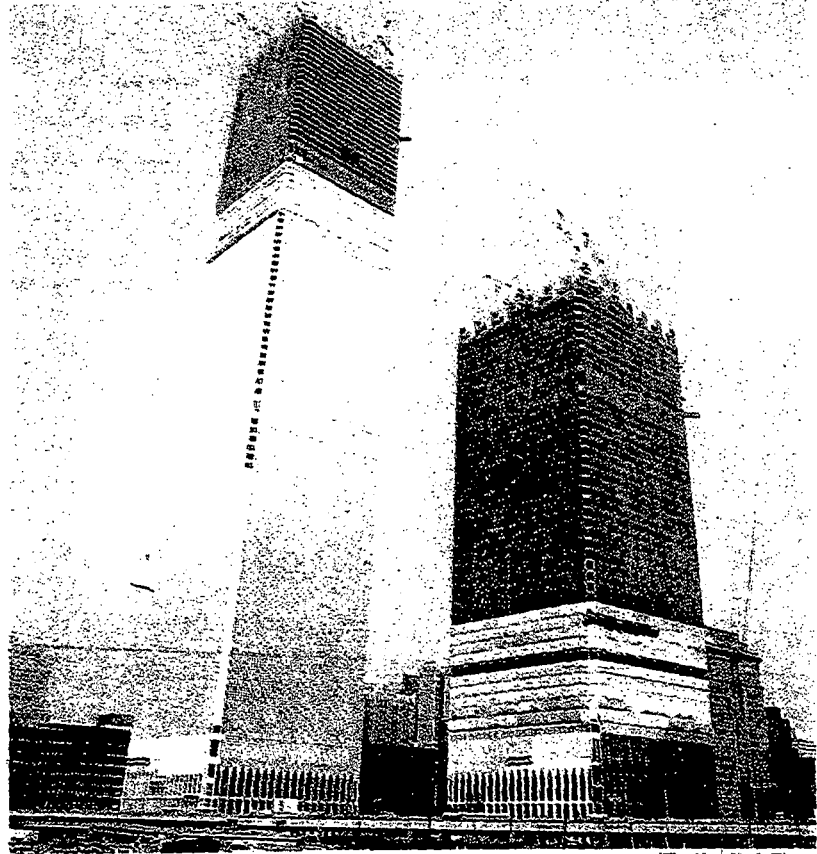
Virtually as one, experts on the development, testing and use of fireproofing materials say no standard treatment of the steel, asbestos or otherwise, could have averted the collapse of the towers in the extraordinarily hot and violent blaze.

But some wonder whether asbestos insulation might have kept the towers intact long enough for more

people to have escaped. And more important, they say the disaster at the World Trade Center exposes a gap in their knowledge about many fireproofing materials.

While those materials are routinely tested under conditions typical of ordinary fires, their effectiveness at the much higher temperatures of last week's catastrophe is generally unknown. In the new world of domestic terrorism, some authorities say ignorance is no longer acceptable.

"Tests for very violent and very large-scale fires have not been done," said Dr. Yogesh Jaluria, a



The New York Times

Early in the trade centers' construction, builders abandoned asbestos as a fireproofing material. Now some scientists wonder about the decision.

professor of mechanical and aerospace engineering at Rutgers.

Dr. Jaluria, who added that similar questions surrounded the widespread fires in Kuwait in the Persian Gulf war in 1991, said he was all but certain that asbestos would have made no difference in the attack on the towers. But he said that definitive data do not exist.

While no one believes that fireproofing or other technology is a substitute for preventing terrorism, some scientists say building designs and materials should be subjected to much more detailed analysis.

"The technology exists today to do a full-scale computer analysis of what would happen under these conditions that we saw on television," said Dr. R. Brady Williamson, an emeritus professor of engineering science at the University of California at Berkeley.

Before the trade towers are rebuilt — as some suggest they should be — such studies should be used to design buildings able to "withstand this scenario," Dr. Williamson said.

Guy F. Tozzoli, who as director of the world trade department for the Port Authority of New York and New Jersey from 1962 until 1987 was a prime mover of the twin towers project, said they were designed to

survive being struck by a Boeing 707, the largest jet of the day. The studies envisioned a low-speed impact by a plane lost in fog, he said.

And, initially at least, each tower did survive the high-speed impact of a larger jet, a Boeing 767.

When it came to fireproofing, the Port Authority at first turned to a mixture containing about 20 percent asbestos that was sprayed onto steel

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taunting.....

materials are tested.

The fireproofing material was manufactured by United States Mineral Products of Stanhope, N.J., under the trade name Blaze-Shield, said James Verhalen, who was then president of the company and is now its chairman. About 65 percent was "mineral wool" — essentially rock that was melted and spun into fibers — bound together by cementlike components.

But as the steel skeleton of the towers began to rise, cancer studies by Dr. Irving J. Selikoff, then director of the environmental sciences laboratory at the Mount Sinai School of Medicine, were signaling the beginning of the end for asbestos.

Tests that showed asbestos from construction sites was being blown into the air sealed its fate. In 1969, Mr. Tozzoli said, the Port Authority decided to switch to a substitute fireproofing not containing asbestos; the city banned the substance in construction in 1971. The project again turned to United States Mineral, which had developed a new product — also called Blaze-Shield — with the asbestos removed. In addition, more than half of the original, asbestos-containing material was later replaced, said Allen Morrison, a spokesman for the Port Authority.

Mr. Verhalen said the new product essentially contained more mineral wool and binders, but no asbestos.

"The fire tests at Underwriters Laboratories produced the same fire resistance as the asbestos-containing products," Mr. Verhalen said. Port Authority had the same results. "We tested the hell out of it," said Mr. Tozzoli, who saw the second jet collision from the toll plaza on the New Jersey side of the Holland Tunnel. The lack of asbestos fireproofing, he said, "had nothing to do with the collapse of the building."

But partly because the substitute

materials have been tested largely at temperatures characteristic of ordinary office fires — involving paper and furniture — and not in such a cataclysm, others have their doubts.

"In retrospect, considering the recent events at the World Trade Center, I wonder if the performance characteristics of the replacement material were as good," said Dr. Arthur Langer, director of the environmental sciences laboratory at Brooklyn College.

Dr. Langer, whose measurements of asbestos in the air were important in Dr. Selikoff's work but who has since received financing from the asbestos industry for his own research, concedes that the answer may never be known. Although he still believes that the decision to change the materials was "a good one based on concerns over public health," Dr. Langer says the question of effectiveness against fire still haunts him.

Whatever their stance on that question, others suggest that the disaster may change the way building materials are chosen in the future.

The fire-protecting performance of asbestos compared with that of other materials is "a legitimate question," said Dr. Philip J. Landrigan, who succeeded Dr. Selikoff at Mount Sinai. (Dr. Selikoff died in 1992.) But Dr. Landrigan, a medical doctor whose formal title is chairman of the department of community and preventive medicine, said he was satisfied with research showing that the replacements were as good as those containing asbestos. And he said Dr. Selikoff's work had suggested that hundreds of thousands of people had died of cancer because of exposure to asbestos.

"The toll from asbestos has been truly massive," Dr. Landrigan said. "The difference, of course, is that it occurred one at a time."

beams, where it dried and formed an insulating layer intended to keep the temperature of the steel from rising above 1,100 degrees Fahrenheit.

"Steel loses about 50 percent of its strength at that temperature," and can begin to buckle under the load of a building, said Robert Berhinig, a section head in fire-resistive construction at Underwriters Laboratories in Northbrook, Ill., where such

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N and R service months from normal

It could take months before N and R subway service — a key link to Brooklyn, Manhattan and Queens now being partially served by other lines — is restored, transit officials said yesterday.

"My first priority is getting the N and R back," Metropolitan Transportation Authority Chairman Peter Kalikow said after an MTA meeting. "I'd like to see it open for travel in six months."

There has been some relatively minor ceiling damage to the N and R tunnels between Rector and Cortlandt Sts. south of the World Trade Center, officials said.

Workers are bolstering the tunnel ceiling with

wood beams to prevent the recovery effort from causing further damage. But the MTA does not want to send in large crews yet.

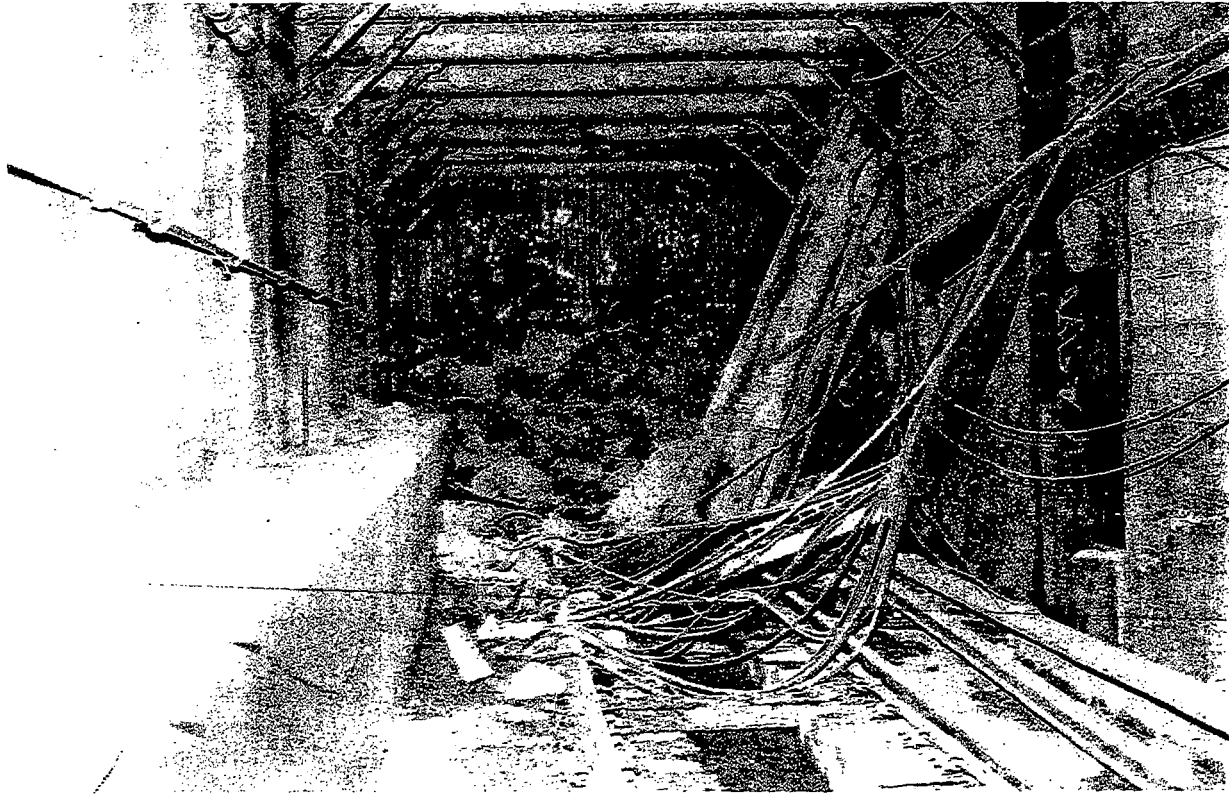
The Transit Authority has begun distributing new maps omitting several stations that were closed after the Trade Center blast, such as the lower portion of the 1 and 9 line.

"Having stared at that section map so many times and seen the southern leg to South Ferry gone, and the N and R loop from City Hall through Whitehall station gone, it's disconcerting," said TA spokesman Al O'Leary.

Pete Donohue

Daily News
9.26.01

Subway at Trade Center to Take Years to Rebuild



New York City Transit

I-beams and rubble cover the tracks of the 1 and 9 line in Lower Manhattan. A mile of tunnel needs rebuilding.

By RANDY KENNEDY

New York City Transit officials have determined that damage to the No. 1 and 9 subway tunnels and stations in Lower Manhattan is so extensive that the line will need to be completely rebuilt for more than a mile.

The work on the line from just south of Chambers Street all the way to the end, at the South Ferry station, could take more than two years, transit officials said this week, adding that they could not speculate beyond that. They also declined to estimate the cost because they did not want city, state and federal officials to hold them to an amount that could turn out to be insufficient. Transit officials say they expect money to rebuild the subway to come from the \$20 billion in federal aid

that has been pledged to the city in the wake of the attack on the World Trade Center.

The only guide to what the project might cost comes from rough estimates for the long-planned Second Avenue subway, which planners think would cost about \$1 billion a mile. But that is for building a new line from scratch and carving its tunnels deep beneath the streets. A rebuilt section of the 1 and 9 line would most likely follow the tunnel cavity that already exists and would cost less.

About 575 feet of the line is totally

collapsed, in two separate locations, but subway engineers who have explored the tunnels say that hundreds more feet are structurally unsound, with thick I-beams bent like paper clips and ceilings sagging under the weight of millions of tons of debris from the World Trade Center on the street above.

In several places, individual beams from the trade center weighing tons punched through the street, through about seven feet of earth and through the concrete-and-brick tunnel ceiling, and then kept on going into the tunnel floor, where they remain lodged like spears.

"There is so much damage that it does not make any sense to rebuild it in sections," said Mysore L. Nagar-

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NYT
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Continued From Page A1

aja, the chief engineer for New York City Transit. "There is really no way to do it that way."

Besides the damage to the 1 and 9 line, a corridor and equipment room near a wall of the Cortlandt Street station on the N and R line was punctured by a large section of the facade from 2 World Trade Center.

Engineers — who have shored up that station with thick wooden pillars — said they were testing the walls and ceilings with motion detectors called inclinometers to determine whether the huge breach had left the walls and ceilings structurally unsound. But even if they are sound, the engineers said, subway service will probably not resume through those tunnels for about six months.

The loss of the 1, 9, N and R will be a blow to the west side of Lower Manhattan as it tries to rebuild and assure residents and workers that they will not be isolated. But transit officials, who were unable yesterday to provide ridership numbers for the affected stations, note that there are subway lines nearby that can pick up the slack.

Because Lower Manhattan was the population center when the first subway lines were built, a tangle of lines converge in a relatively small area — including the 4 and 5 at Wall Street, which is only a thousand feet from the Rector Street station on the 1 and 9. The Bowling Green station on the 4 and 5 is also a little more than a thousand feet from the 1 and 9 South Ferry station. And there is the C and E station at the World Trade Center, which was only slightly damaged and could reopen as soon as streets above it are repaired and reopened.

Rebuilding about 6,200 feet of the 1 and 9 line, including the Cortlandt, Rector and South Ferry stations, would be a huge and time-consuming job under even the best of circumstances. But in interviews, subway engineers described tremendous obstacles before rebuilding plans can even be drawn up.

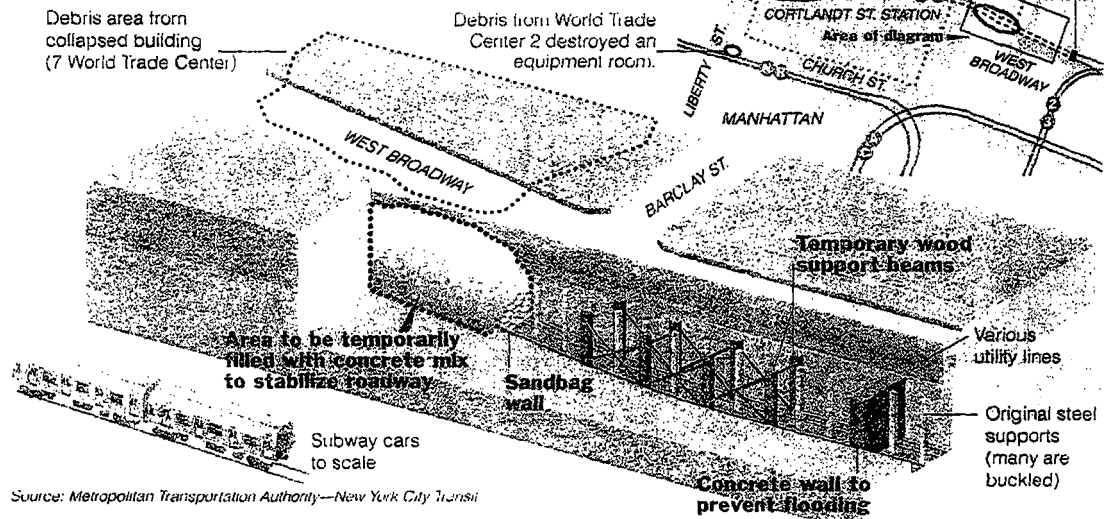
For example, where the line runs beneath West Broadway, adjacent to the rubble from the collapse of 7 World Trade Center, many steel support beams in the tunnels have fallen, leaving sections of the road and sidewalks above with little underpinning except hope.

To shore up the street so recovery equipment can use it, transit officials have agreed to pump about 220 feet of the tunnel full of concrete — enough concrete to cover an entire football field a foot deep. Months later, when the debris is cleared, transit workers will then have to carve away all that new concrete to rebuild the line.

They will also have to demolish two steel-and-concrete plugs, three feet thick, that were built Wednesday in the 1 and 9 tunnels near Chambers

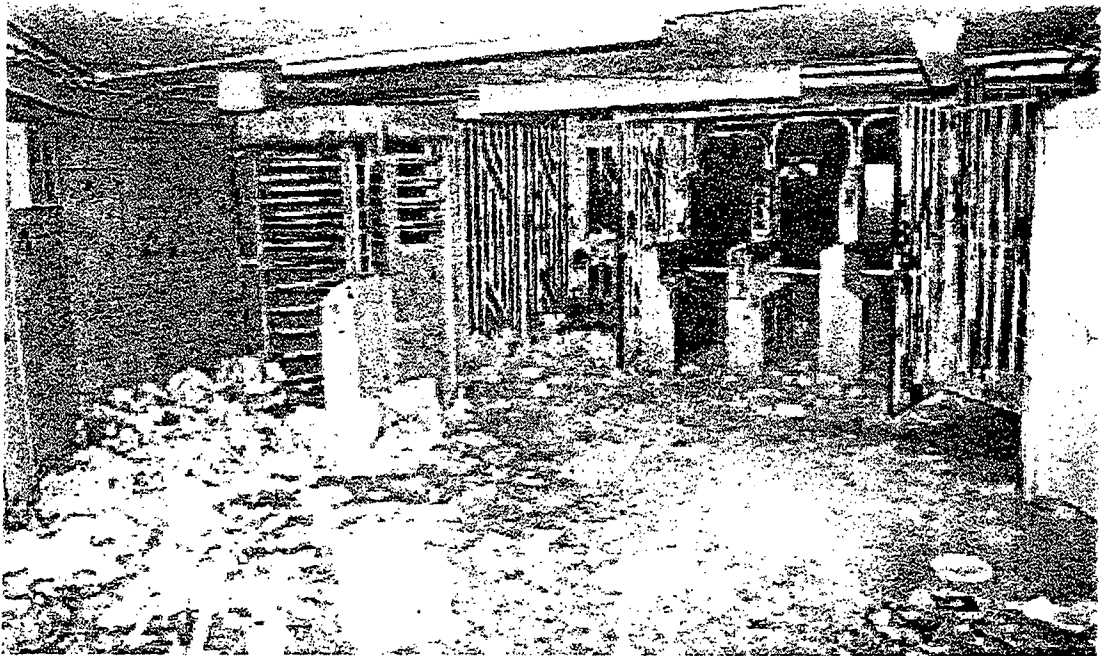
Assessing the Subway Damage

Beneath the World Trade Center rubble, New York City Transit has sealed off 1,800 feet of the damaged 1 and 9 subway line between two concrete walls. The methods for stabilizing the road overlying a damaged section are shown below.



Source: Metropolitan Transportation Authority—New York City Transit

The New York Times



The Vesey Street entrance to the Cortlandt Street station remains largely intact, but other parts of the station and some tunnels that serve the 1 and 9 lines were heavily damaged. Rebuilding could take years.

Street and Cedar Street, to prevent water from flowing into the rest of the subway if catastrophic flooding occurs.

The plugs were installed because the 1 and 9 tunnels run right up against the western wall of what is called the bathtub, the waterproof barrier that rings the World Trade Center basement to keep Hudson

River water out and that is now threatened.

Considering the devastation near the trade center, and the fact that the tunnels were only five feet below the road surface in some places, complete tunnel collapses were not as extensive as some engineers had feared.

This is partly because the tunnels,

opened in 1918, were — like most of the rest of the subway — built with steel arches called bents, spaced five feet apart along the length of the tunnels. The tunnels are relatively shallow and were built using the cut-and-cover method, in which trenches were dug in soft soil and then framed with steel arches. The arches were surrounded by brick and concrete on

Subway...

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Subway...

P. 30 of 3

all sides, and then this tunnel "box" was covered over with earth, some utility lines, sidewalks and streets.

But each arch acts something like an independent structure, and there are so many of them that tunnels remain intact even if many arches are destroyed.

John Ferrelli, the chief of infrastructure for the subways, said he saw the destruction from the deadly derailment of a No. 4 train at Union Square station in 1991, which knocked out supports from 28 arches but caused the ceiling to sag hardly at all.

Mr. Ferrelli, who walked through the damaged stations and tunnels on the 1 and 9 line last Friday, said so much of the line collapsed because the top of the 2 World Trade tower fell more to the side than the other tower. The debris crashed directly above the tunnel that ran along the northeast corner of the building, crushing a section about 375 feet long.

"We basically had dozens of floors of a huge building falling from 600 feet right on top of our roof," Mr. Ferrelli said. "It was like a pile driver."

Inside the Cortlandt Street 1 and 9 station, he said, even where the platform areas remain standing, inch-thick I-beams fitted with inch-thick support plates are now wavy instead of straight.

"To have the column buckle and the plate to twist like a Pringles chip, that takes a tremendous amount of force," he said. He described walking toward the south end of the Cortlandt Street station and noticing that the ceiling sloped closer to his head as he walked. "It was a strange feeling," he said.

The other area of total collapse is a stretch of about 200 feet north of the Cortlandt Street station, where the tunnel ran alongside the eastern side of 7 World Trade Center, the 48-story building that fell after the two trade center towers did. This is the portion that will have to be stuffed with concrete to secure the street above until debris is cleared and subway work can begin.

The subway engineers, who have never confronted a job even a small fraction as complicated as the one that lies ahead, said they had no idea when they would be able to dig down and assess the full extent of the damage in the collapsed sections. They have even less of an idea when the reconstruction work can begin.

The thing they do know, they said, is that the subway in that area could have survived the catastrophe only if decisions had been made 90 years ago to build it very deep below the city, the way that much of the London Underground was built.

Mr. Nagaraja, the chief engineer, said, "I don't think we could ever design the subway to withstand something like this."

A NATION CHALLENGED

Engineers Tackle Havoc Underground

By DENNIS OVERBYE

On Friday afternoon in Midtown Manhattan, George J. Tamaro, professional engineer, was holding court among conference tables stacked with blueprints dense with threadlike lines. He was trying to resurrect what had suddenly become a ghost world.

As a staff engineer for the Port Authority in 1967, Mr. Tamaro helped build the World Trade Center's basement, a 16-acre, 70-foot-deep hole in the ground that until last Tuesday housed seven levels of shopping, parking and, at the very bottom, the PATH train station. Now he and others are concerned that debris from the collapse of the twin towers might be the only thing supporting the walls of that giant hole against the pressure of muck and water and dirt on the outside.

Attempts to dig out the basement without proper precautions, they fear, could cause the walls to shift or rupture, leading to flooding and the destabilization of nearby buildings.

Mr. Tamaro said he had urged Fire Department officials not to proceed with removing wreckage from the basement until engineers had figured out how to do it safely. "The walls require lateral support," he said. "You've got the Hudson River across the street."

At the behest of the city's Department of Design and Construction, Mr. Tamaro, an expert on foundations who is now a partner at Mueser Rutledge Consulting Engineers, has turned his office into a "below-grade command center" to provide rescue workers and engineers with accurate information on the locations of the myriad walls, passages, floors, and water, sewer, electrical, telephone, gas, subway and train lines under the ruined plaza.

He and his colleagues are working closely, he said, with the Fire Department, the Port Authority and the Transit Authority, as well as with engineers from the Thornton-Tomasetti Group, who are advising the city on the condition of structures affected by the catastrophe.

Mr. Tamaro was involved in building the foundations of all the buildings at the trade center and the World Financial Center, across the street. "I'm carrying around a mental picture, but there's no piece of paper that has the whole project," he said. "That's what we're putting together."

He added, "It's a complicated site."

Mr. Tamaro said it would be some time before anybody could get a complete assessment of just how bad conditions were underground. Two emergency hatches on West Street that go down to the PATH tubes, which

loop through the site, are covered with rubble and possibly obliterated. But there are hints of the havoc the engineers expect to find.

Water, probably from fire hoses, rain and broken water pipes, is flowing through the PATH tubes to New Jersey. There are 6 or 7 inches of water in the Exchange Place station in Jersey City, which is just across the river and 20 feet lower than the trade center station,

said Daniel Hahn, a former Port Authority engineer who works at Mueser Rutledge. He said the Port Authority was planning to cork the tunnels at Exchange Place with a pair of giant concrete plugs.

The plugs are necessary, Mr. Tamaro said, because if the trade center basement were to flood, water could wind through the PATH tubes back across the river to 34th Street and then go into the subway. "That's not going to happen," he said flatly.

Parts of two New York City subway lines, the 1 and the 9, have collapsed from the north end of the complex — where columns and beams from 7 World Trade Center have punctured the street and entered the subway — to Liberty Street at the south end, according to David Cacoilo, a Mueser Rutledge engineer who explored the tunnels on Sunday. He added that the Cortland Street station of the N and R lines, a block east on Church Street, was in good shape, and trains could be running through it (although not stopping) relatively soon. As if to emphasize the haphazard nature of the catastrophe, Mr. Cacoilo and his colleagues were able to enter the concourse of 5 World Trade Center and found that the floor and part of the superstructure on its northeast corner had not yet collapsed.

Yesterday Mr. Tamaro said engineers were now planning to seal off the 1 and 9 line with a bulkhead at the south end of the trade center and sandbags to the north to contain water and any debris generated by the recovery and demolition efforts. They are also considering various strategies to shore up the streets over the subway tunnels so they can safely support the heavy equipment needed for the demolition of the trade center buildings.

NYTimes

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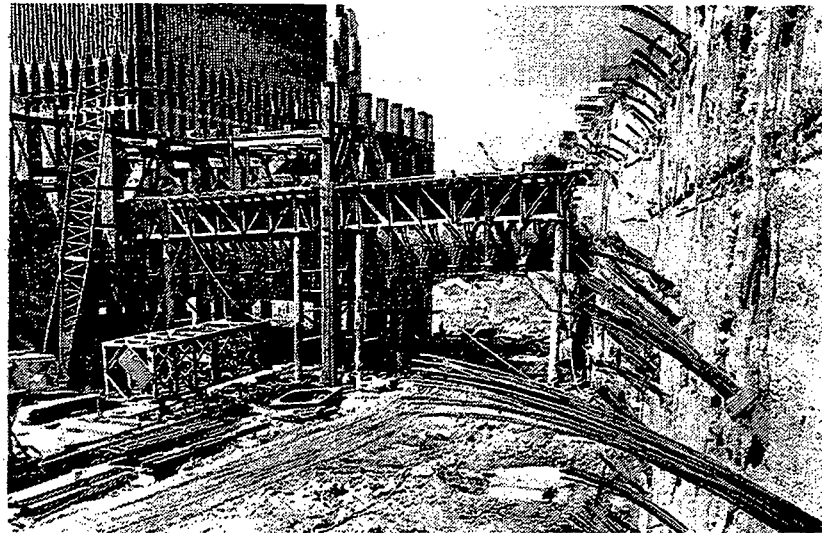
Water is an old problem for the trade center. The Hudson River used to flow where it was built.

When Europeans first laid eyes on what would be New York, the eastern shore of the Hudson River ran along what is now Greenwich Street, a block east of where the trade center towers would rise. It was here that the Dutch explorer Adriaen Block sank his ship, *Tijger*, in 1613, after it had burned. Part of that ship was found during digging for the IRT subway line in 1916, and Mr. Tamaro said engineers had hoped to find the rest of it during the excavation for the trade center towers.

What they dug up instead, he said, was garbage, animal carcasses, leather shoes, bottles, cannonballs, oyster shells, timber and other debris that had been dumped on the shore and used to extend the shoreline west over 300 years, to the other side of what is now West Street. Below that was river bottom, and below that was glacial till — gravel scooped up and left by the glaciers that once covered New York — and hardpan clay. About 75 feet below the ground was mica-schist, the bedrock that defines all Manhattan geology and high-rise real estate.

According to Dr. Christopher J. Schuberth, a professor at Armstrong Atlantic State University in Savannah, Ga., who is the author of a book on New York geology, mica schist is a hard, unyielding rock, 700 million or 800 million years old, left over from an ancient mountain range. The glaciers "tore the daylight out of the rock," scooping it out in some spots and dumping gravel in others, he said. The schist is closest to the surface in Midtown and at the southern end of the island, making it easier to build skyscrapers there, and deeper in other places, like Greenwich Village.

The present concern over the state of the basement arises from the way Port Authority engineers got down to that bedrock for the foundations of the two 110-story towers, the Marriott Hotel and 6 World Trade Center. To hold the river muck at bay and prevent collapses of the unstable ground during excavation, the engineers first dug a 3-foot-wide trench 70 feet deep — all the way down to



The New York Times

The World Trade Center excavation in 1969, with its waterproof "bathtub" at right. In the center are the original PATH tracks.

bedrock — around the entire 16-acre construction site. As each 22-foot-long section was being dug, it was filled with slurry, a mixture of clay and liquid that can withstand the pressure of soil trying to close the trench. Then a cage of reinforced steel was dropped into the slurry and concrete pumped into the trench from the bottom, pushing the slurry out the top, where it was captured and used in the next section.

It took a year, from March 1967 to

What lies beneath the ruined plaza? Facts are elusive.

March 1968, to complete what Mr. Tamaro calls the bathtub, a waterproof wall more than 3,000 feet long encircling the oblong excavation site.

To support this wall while the basement was being dug, bundles of long steel rods known as tiebacks were drilled at a downward angle through the wall and anchored in the surrounding bedrock. As the bathtub deepened, tiebacks sprouted from its walls like wild carrot tops, pre-stretched so they would exert an outward pull on the wall.

The excavation proceeded around and even under two PATH train tunnels that crossed the bathtub on the way to a station on Church Street.

"You could see the tubes hanging in the air," said Thomas J. Glennon, a plumbing inspector at the site. That station was subsequently demolished to become part of the site for 4 and 5 World Trade Center, and the tracks were rerouted to a new terminal in the bottom of the basement. The excavated dirt, about 1.2 million cubic yards, was dumped in the river across the street to create land for part of Battery Park City.

Once the basement structure was done, Mr. Tamaro said, the tiebacks were cut and their openings welded over with steel plate — partly because the basement floors were there to support the walls, partly to avoid having a permanent part of the structure encroach on other people's property, and partly because they serve as conduits for river water. "Each one leaks water. They leak forever, and it smells like hell," Mr. Tamaro said.

But without the floors in place to provide lateral support, there is a risk that the bathtub's walls could collapse inward if the wreckage inside it is not removed carefully. "You can't just go digging next to those walls," Mr. Tamaro warned. He said new anchors might have to be installed as the debris was excavated. "We have to stage our way down," he said, excavating a level, putting in a row of anchors and then digging some more, not unlike the process they went through 33 years ago to excavate the bathtub in the first place.

It will be harder this time around,

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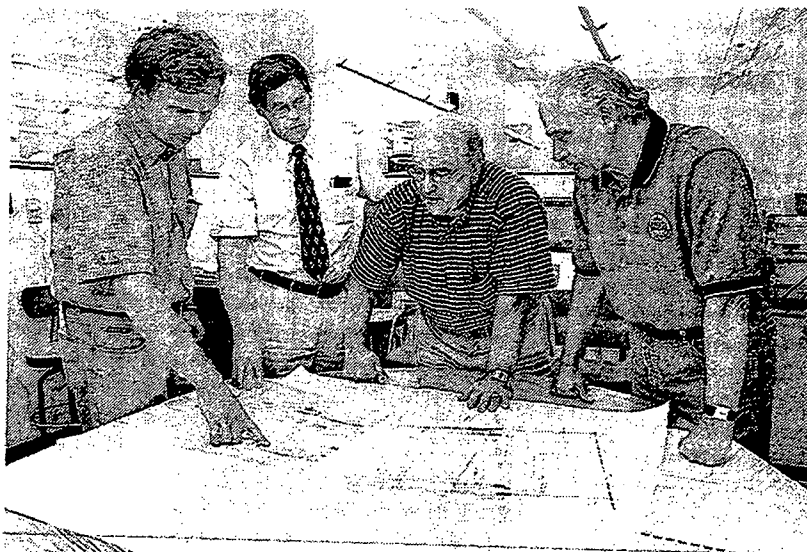
engineers.....

he said. The drilling machine for the anchors, for example, will have to do its work hanging down over the lip of the hole rather than crawling along on solid footing on the bottom of the excavation. Mr. Tamaro thinks it may be possible to dig deeper in the center of the basement than along the wall, as long as there is sufficient debris piled up along the wall. But how much deeper will depend on the nature of the debris.

He declined to make a precise estimate of how long this process might take, except to say that it could be months, depending on how much of the original structure is still intact.

The condition of the bathtub wall is also unknown, according to Mr. Tamaro. Despite some reports that rescue workers have reported seeing leaks on the walls, he thinks there is unlikely to be much water in the basement; if there were, he says, much more water would be rushing over to New Jersey.

Martha Huguet, a spokeswoman at Mueser Rutledge, said the firm had not received any reports of leaks. Nor has the Port Authority, according to a press spokesman there. Dr. Jeremy Isenberg of Weidlinger Asso-



Frances Roberts for The New York Times

George J. Tamaro, second from right, an expert on World Trade Center foundations, with colleagues at Mueser Rutledge Consulting Engineers: from left, Andrew Pontecorvo, Alfred H. Brand and Theodore Popoff.

ciates, an engineering company that worked on the trade center complex, said a leak would not necessarily trigger a catastrophic flood, but would create a problem of slow erosion that would complicate the clean-up and excavation.

The bathtub wall is sturdy, Mr.

Tamaro said. A bomb blast in 1993 took out two of the floors but the wall still held. The wall has good deal of flexibility, he said, like a diaphragm.

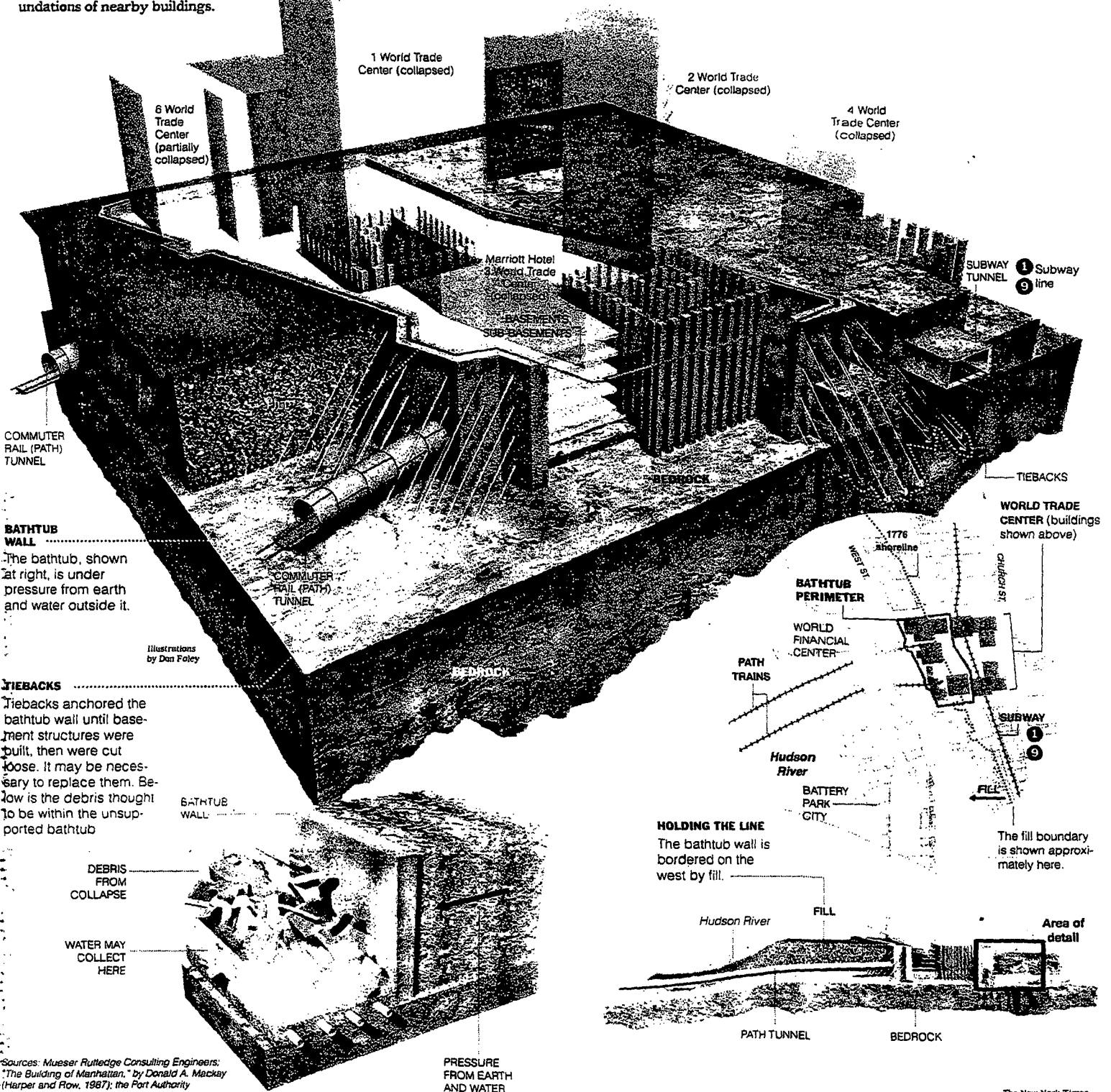
The truth is, though, "we have no sense of the condition of the wall around the perimeter," Mr. Tamaro said.

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Engineers.....

Emptying a Hazardous 'Bathtub'

When the World Trade Center was built, engineers sank a wall of steel mesh and concrete into the ground so the excavation could be done safely. The structures built inside the wall — what the engineers call the bathtub — in place. Now engineers wonder how to clear the debris without risking the stability of the bathtub and the foundations of nearby buildings.



The New York Times

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E NEW YORK TIMES **METRO** FRIDAY, SEPTEMBER 28, 2001**CHANGED LIVES****In a Shattered City, the Construction Leader Is King**

By CHARLIE LeDUFF

EDWARD J. MALLOY may be the most powerful man in New York City you've never heard of.

As president of the Building and Construction Trades Council of Greater New York, Mr. Malloy commands a sizeable army of more than 225,000 unionized construction workers, truck drivers and laborers.

Take, for instance, the recovery and cleanup of the World Trade Center. The work is expected to continue for the better part of a year. It is important to know that not a piece of steel or ruckload of cement will move in this city without Mr. Malloy's say.

When the twin symbols of power and permanence crumbled on Sept. 11, things changed for Mr. Malloy, 66, a former steamfitter who as a young man helped build the trade center.

"I've never seen cement turn to dust," he said. "That really affects you."

Mr. Malloy is a composed man who was dressed for an interview yesterday in slacks, a turtleneck pullover and loafers, looking more like a professor than a plumber. His office is in the fifth-floor of the Masonic Hall on 23rd Street near the Avenue of the Americas.

His phone rings incessantly these days. There are meetings with contractors, developers and politicians. There are 3,000 union members working on the World Trade Center job alone. According to the city's Office of Management and Budget, the operation is costing approximately \$100 million a week.

But, contrary to current opinion, the work at ground zero has not translated into full employment for tradespeople in the New York region, Mr. Malloy said. Most construction jobs in Manhattan involving cement have ground to a halt, and 2,000 workers are temporarily idle.

The reason, Mr. Malloy explained, is the traffic checkpoints set up on the perimeter of the city.

"Cement has a life of 90 minutes, and the checkpoints are causing two- and three-hour delays," Mr. Malloy said. "That makes the cement old and useless. I'm trying to work that out with the proper authorities."

Projects like the AOL Time Warner building at Columbus Circle and the resurfacing of the West Side Highway are limping along because they cannot get cement. The job of Eddie Malloy is to get those trucks moving.

He was raised in the Murray Hill section of

Manhattan. His rise to power was a steady one. He followed his father into the steamfitters' Local 638 in 1960. He became active in union politics, went to night school during the 1970's and earned two bachelor's degrees from Cornell University concentrating in labor studies. He became president of the steamfitters' union in 1983, a post he held until 1992, before becoming president of the Building and Construction Trades Council.

Mr. Malloy, however, is not without his detractors. He has been criticized in the media for his lack of oversight at the National Museum of Catholic Art and History, a charity whose board he serves as chairman. The Archdiocese of New York has asked the organization to remove Catholic from its name.

After 10 years of fund-raising, the charity has yet to build the museum in East Harlem. Moreover, its books were audited last year by the Internal Revenue Service. This proved difficult because many of those records were destroyed in an office fire the year before.

MR. MALLOY has also been pilloried for his chummy relationship with Donald Trump, a major employer of members of the union. Mr. Trump has been the beneficiary of Mr. Malloy's influence. When asked if he has pulled strings to secure union loans for some of Mr. Trump's building projects — pension funds, he pointed out, are beyond his direct control — Mr. Malloy stated flatly, "Sure. I'm trying to get my people work. That's business, and it's legal."

Across the street from his office, a new complex is going up, built with union hands. Tractor-trailers roll down 23rd Street, trucks driven by union hands. All over the city these days, there are Eddie Malloy's people.

But Mr. Malloy, an old hand himself, tries carefully not to call them his people.

"This is a union," Mr. Malloy said. "There is no 'I' in 'we.'"

City orders car pools to beat gridlock nightmare



TRAFFIC CRISIS Mayor Giuliani at press conference yesterday describes new traffic restrictions requiring at least two people in every passenger vehicle entering Manhattan below 62nd St. The rules will go into effect today at most crossings.

By **LISA L. COLANGELO** and **PETE DONOHUE**
DAILY NEWS STAFF WRITERS

Car pooling will be mandatory at five bridge and tunnel crossings into Manhattan this morning as part of a sweeping plan intended to ease horrendous gridlock.

The ban against single-occupancy vehicles, announced yesterday by Mayor Giuliani, will be imposed from 6 a.m. to noon at the Manhattan-bound Queensboro, Williamsburg, Brooklyn and Manhattan bridges and the Queens-Midtown Tunnel. The

prohibition will begin tomorrow at the Lincoln Tunnel.

Some drivers, such as those driving government or commercial vehicles or cabs, will be exempt from the restrictions, as will cars with only one occupant already in Manhattan.

Daily News
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City.....

Police will staff checkpoints to enforce the tough regulations, the mayor said.

"You are going to have to turn back if you are in a single-passenger vehicle," Giuliani said. "You have to have another person in your car — you can't come in by yourself. It's in response to the terrible traffic conditions we have coming over the bridges."

"Let's try it for a couple of days," the mayor said. "We'll all work together. If it has a big impact on traffic, then we'll continue it. If it doesn't have the impact we think it will, and it's just inconveniencing people, then we won't."

Today's traffic already was expected to be lighter because of the Jewish holiday of Yom Kippur.

Traffic has ground to a halt in the aftermath of the World Trade Center attack, with delays at their worst on Tuesday. The recovery efforts in lower Manhattan, as well as security checkpoints, limited access below Canal St. and partial closures of river crossings and roadways have generated the traffic headaches.

"With so many closures, construction and security checkpoints in place, [car pooling] will ease gridlock, reduce traffic volume into the city and promote utilization of mass transit," Transportation Commissioner Iris Weinshall said.

"I have to urge everyone as strongly as I can to take public transportation," the mayor said. "You're going to get into Manhattan much easier and going to get out of Manhattan a lot easier."

Most subway service outside the immediate World Trade Center area has been restored; officials yesterday reopened another station: the Chambers St. stop of the Nos. 1 and 2 trains.

The car-pooling requirement was praised by several former city transportation commissioners and mass transit advocates.

"There are many thousands of people who put American flags on their cars to express their concern about the city and the nation," Straphangers Campaign staff attorney Gene Russianoff said.

"Now these drivers can do their part by putting passengers in their vehicles and reducing horrendous congestion. We need to get the city moving again and this car-pool requirement is a smart way to do it."

But with mandatory car pools looming, New Yorkers scrambled to make plans.

Esha Stewart, 26, of Brooklyn, a Verizon customer-service representative, said she is scared to take the subway, fearing another terrorist attack.

"I'm looking for co-workers to car pool with me tomorrow," she said. "If not, I will take the subway, but I really don't want to."

Mandatory car pooling on some highways — requiring three passengers per vehicle — was ordered by Mayor Ed Koch during the 1980 transit strike, greatly improving the flow of traffic, said former deputy transportation commissioner Sam Schwartz, who writes the Daily News' Gridlock Sam column.

"It was very successful," Schwartz said. "It reduced traffic volume tremendously."

He predicted commuters will gather today at the foot of crossings looking for rides. "Hitchhiking will become the norm in New York City," he said.

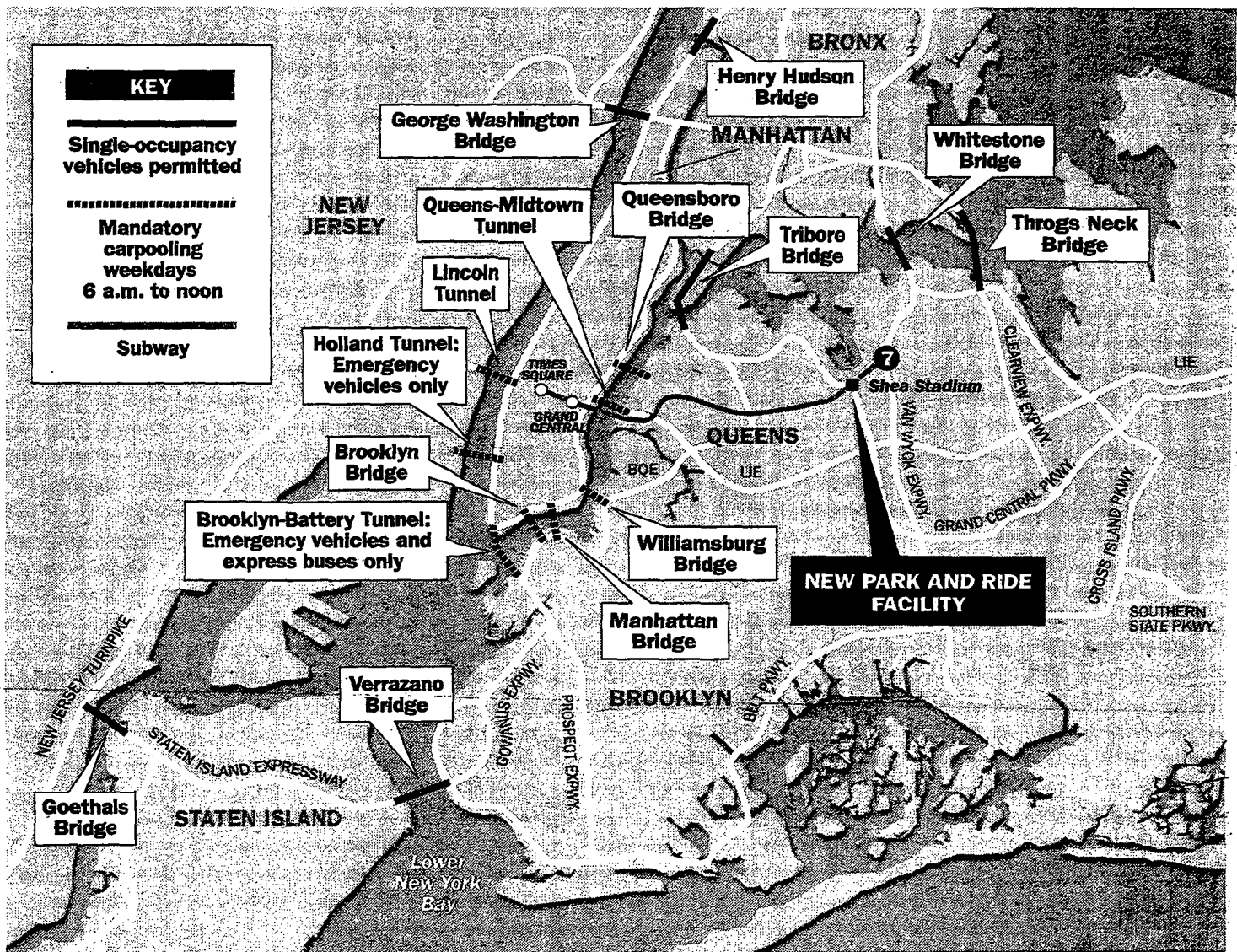
Greg Butler, a 49-year-old telephone company worker from Flatbush, Brooklyn, drove to his Manhattan office yesterday near the Brooklyn Bridge.

His commute used to take 30 minutes. Tuesday's trek required two-and-a-half hours and an hour yesterday.

"Tuesday, I lost my mind, and today I feel like I got it back," he said. "The traffic was a lot better."

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THE TRANSPORTATION SITUATION



MANDATORY CAR POOLS 6 A.M. - NOON, MANHATTAN-BOUND

Crossings covered under the mandate and their respective checkpoints:

- **Brooklyn Bridge** Bridge approach
- **Manhattan Bridge** Bridge approach
- **Williamsburg Bridge** Bridge approach
- **Queensboro Bridge** Bridge approach
- **Queens-Midtown Tunnel** Long Island Expressway tunnel approach, Greenpoint Ave., Van Dam St.
- **Lincoln Tunnel**
(Car pool restrictions begin tomorrow)
Pleasant Ave. in Weehawken.

EXEMPTIONS

- Official government and commercial vehicles
- Cars carrying police officers, firefighters, emergency workers and medical personnel
- Cars with parking permits for the disabled
- Medallion taxis and livery cabs
- Journalists with NYP license plates
- Motorcycles

PARK AND RIDE

In addition to previously established facilities, 4,000 cars can use Shea Stadium free today and tomorrow. At Shea, organize a car pool, or connect with the No. 7 train or the Long Island Rail Road.

CAR POOL INFO

For info on car pool partners, check www.CommuterLink.com or call (866) NY-COMMUTE.

FERRIES

STATEN ISLAND FERRY

Service to Whitehall Terminal every 20 minutes from 6a.m. to 9a.m. and from 3:30p.m. to 7:30p.m. Service to St. George Terminal every 20 minutes from 6:30 a.m. to 9:30 a.m. and 4 p.m. to 8 p.m. For additional service at other times, call (718) 815-BOAT.

SPECIAL BROOKLYN SERVICE

From the Brooklyn Army Terminal in Sunset Park, Pier 4 at 58th St. and First Ave., to Whitehall Terminal in Manhattan. Boats run every half-hour from 6a.m. to 10a.m., and at 10a.m. In the evening, ferries return from

3:30p.m. to 7:30p.m. every half-hour; 500 parking spots available.

PRIVATE FERRIES

- From E. 90th St. Pier, stopping at E. 34th St. ferry landing, to Pier 17 at the South Street Seaport
- New Jersey service from Hoboken, Harborside, Colgate, Liberty Harbor Marina and Weehawken to Pier 11, near Wall St. and the South Street Seaport, instead of World Financial Center pier
- New Jersey service also running to Pier 78 at W.38th St., from Atlantic Highlands to Pier 11 and E. 34th St.
- From Glen Cove, L.I., to Pier 11
- For NJTransit, Academy and Suburban bus passengers from Liberty State Park to Pier 16 at the South Street Seaport.

FOR THE LATEST

Check restrictions on vehicle entry to Manhattan on the transportation link of the city's Web site: www.nyc.gov

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New city carpooling rules

Bridges first on list; tunnels also eyed

By PETE DONOHUE
DAILY NEWS STAFF WRITER

Because of nightmarish traffic, the city will mandate carpooling for passenger cars entering Manhattan on four bridges, Mayor Giuliani said last night.

The new prohibitions on cars with only a driver are set to begin tomorrow and would be in effect between 6 a.m. and noon at the Queensboro, Williamsburg, Manhattan and Brooklyn bridges, officials said.

Officials also are considering extending the prohibition to the Queens-Midtown and Lincoln tunnels. Restrictions on the city's other crossings have not yet been decided.

Cars with just one occupant would not get a ticket but would be turned away from the crossing. Officials have not yet detailed how traffic would be redirected or decided whether the regulations would be in effect five days a week or seven.

"For a lot of reasons — construction, security — things are slower," Giuliani said. "We're going to put into a requirement that, when you come into Manhattan, you have to have two or more people in the car."

Citywide traffic yesterday was "horrible," the mayor said. And noting that the subway system is operating at 85% capacity, he again urged commuters to use mass transit.

Gridlock at its worst

"Today is the worst traffic day ever since the World Trade Center catastrophe, and one of the worst days since Henry Ford invented the car," said Tom Cocola, a spokesman for the city Transportation Department. "Virtually every artery was clogged, everywhere you went."

"The mayor and the Department of Transportation have to do this," added Kristen Fountain, a spokeswoman for the Tri-State Transportation Campaign.

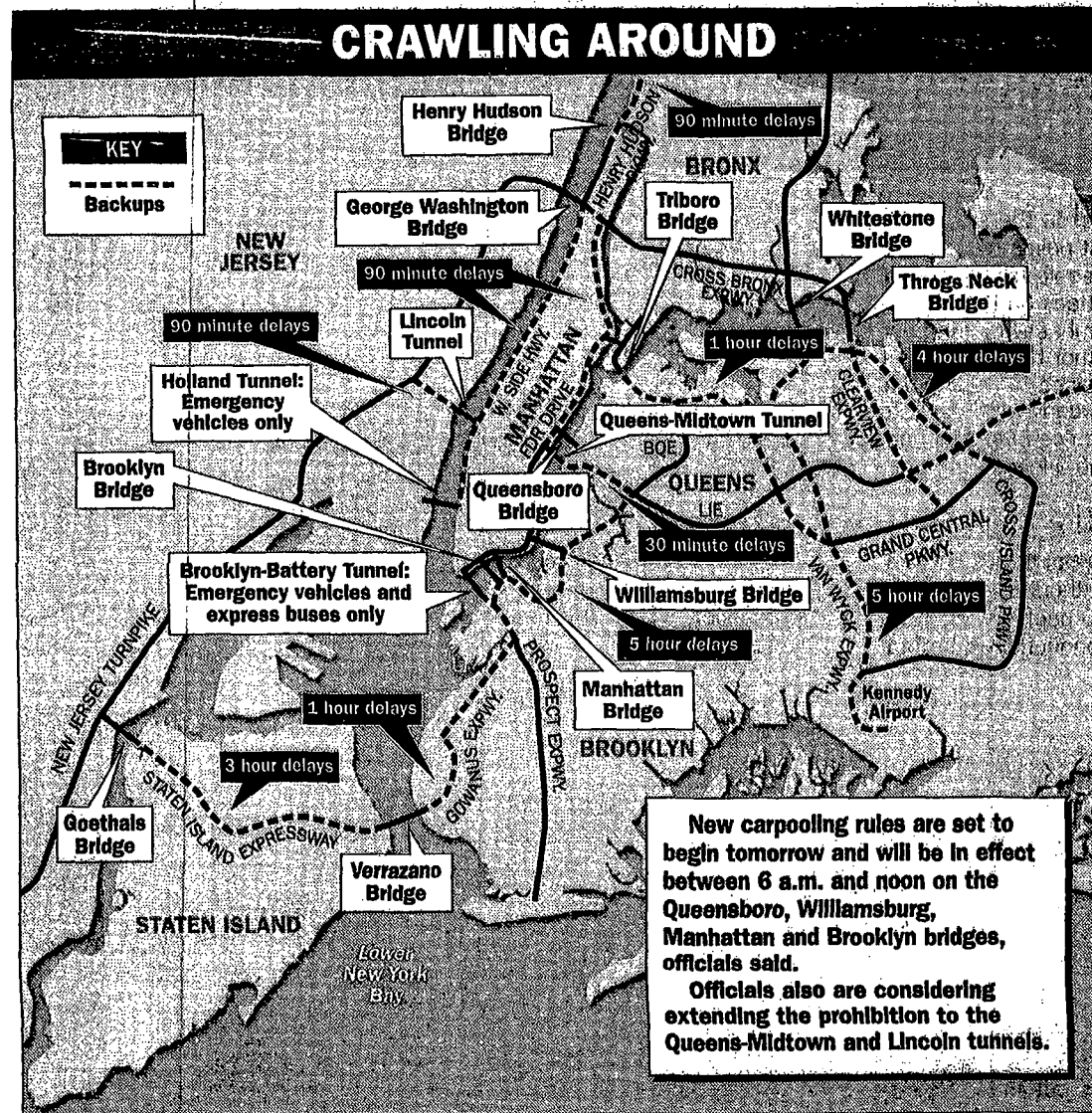
"It's the only way to keep cars

moving within Manhattan. The source of gridlock is limited capacity in Manhattan. We need to limit the number of cars coming in."

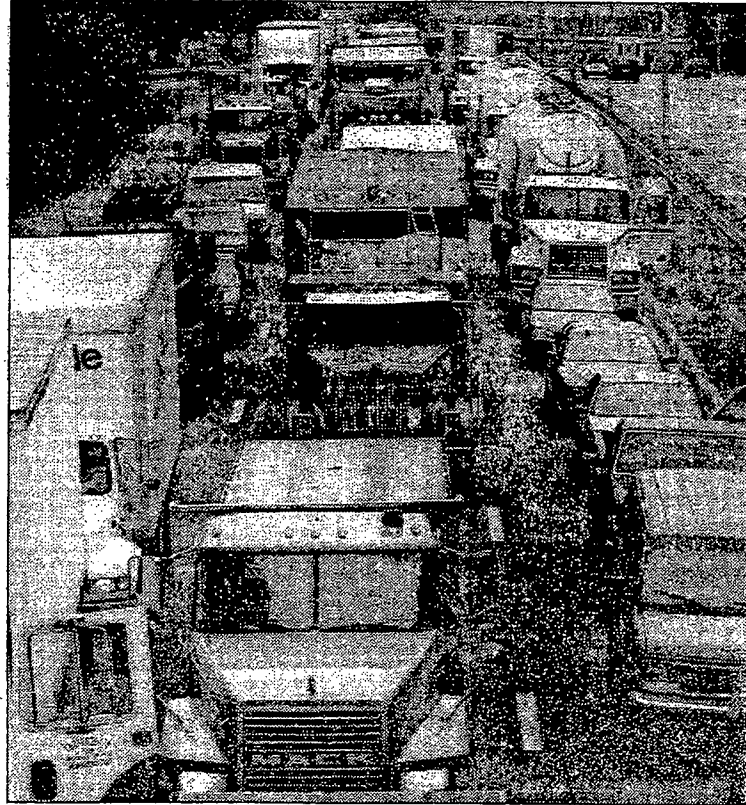
Drivers surveyed by the Daily News last night were less than thrilled — and one was already plotting to beat the ban.

Frustration building

Michael Sherry, 31, of Kew Gardens, Queens, said he must use a car for his job as a clothing distributor and does not know anyone with whom he could share a ride.



New City



BILL TURNBULL DAILY NEWS

STALLED Bridges and expressways were snarled for hours yesterday as police responded to hazardous materials threat.

"Why should I have to bring other people to work?" he said. "I am just going to buy a dummy and put it in the backseat, and no one is going to notice I have it in the backseat."

Barbara Rooney, 36, a shoe store worker from Clifton, N.J., said she wasn't against the idea — just the plan to begin the restrictions tomorrow.

"Thursday is two days away," she said. "It's not much time. How do they expect people to make plans?"

Matt Pinnock, a 30-year-old banker, sometimes shares a ride with a friend from New Jersey through the Lincoln Tunnel.

But because he travels out of town a lot, his friend will soon have trouble getting into work alone.

"Maybe Giuliani can find us another buddy," Pinnock said.

Heightened security checks of trucks, buses, vans, cabs and cars at area bridges and tunnels have led to horrendous delays — more than seven hours in some of the worst cases yesterday — for drivers.

Even drivers of emergency vehicles at the Queens-Midtown Tunnel were being asked for identification. And the colossal jams delayed last night's ceremonies at Yankee Stadium honoring the rescue workers for several minutes as organizers waited for fans to arrive.

The increased searches came as law enforcement authorities received word that a tractor-trailer loaded with explosives was headed to the city, sources said.

Jonathan Kaplan, executive producer of broadcast service Shadow Traffic, said of the back-ups: "This is as bad as it gets. This is the worst seen in a long time."

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Defending Skyscrapers Against Terror

By KENNETH CHANG

No one designs a skyscraper to withstand the direct hit of a fully fueled 767, and construction engineers agree that such an attack would have doomed almost any high-rise.

Each World Trade Center tower absorbed the impact of a jet with a shudder, as each was designed to do, and stood. Inside, though, 2,000-degree infernos started burning, fed by thousands of gallons of jet fuel.

It then became a question of time. Would the fuel burn up first or would the steel columns weaken and buckle under the heat?

For the people on floors above the crash site, there was another critical factor: an ordinary fire would take two or three hours to burn through the gypsum wallboard around the stairwells — but projectiles of plane wreckage almost certainly pierced through, letting in the fire and smoke. That trapped people on the upper floors.

The south tower collapsed 56 minutes after impact. The north tower lasted an hour and 40 minutes.

Someone probably could build a fortress skyscraper. "Given enough money, we can design anything," said Dr. Charles H. Thornton, chairman of the Thornton-Tomasetti Group Inc. of New York City, the structural engineering firm that worked on the 1,483-foot-tall Petronas Towers in Kuala Lumpur, Malaysia.

But no one would pay to build one, and no one would want to work there. Such a building would probably have the aesthetic appeal of a containment vessel of a nuclear power plant, which is designed to survive the crash of a falling 747.

In the decades since the World Trade Center was built, however, new materials and building techniques — some used on the more recent super skyscrapers like the Petronas Towers — may have given people more time to escape.

The key would have been slowing the fires. The sprinkler systems offered little help.

Even if the pipes survived the impact, the sprinklers of a typical skyscraper put out a few hundred gallons of water a minute for half an hour, Dr. Thornton said, and water would have been useless against a fuel fire in any case. (Water and

oil don't mix; droplets of water sink into the fuel, turn into hot steam and explode, and the fuel continues burning.)

By contrast, an anti-fire system at an aircraft hangar can unleash a deluge of 120,000 gallons a minute of water and foam — which sticks to burning fuel — for two hours straight, Dr. Thornton said.

Since extinguishing the fire is impossible, "You have to build a more rugged building," said Dr. R. Brady Williamson, an emeritus professor of civil engineering at the University of California at Berkeley.

The main ingredients of any skyscraper are steel and concrete. Both are strong, but in different ways. Concrete bears more weight; steel can bend without breaking. The World Trade Center's supporting col-

umns were made of steel, and the intense heat would have caused the girders to expand, distorting their shape and sapping their strength, leading to the collapse.

"It's better to build in reinforced concrete," said Dr. Mir M. Ali, a

professor of architecture at the University of Illinois. "If there is an impact, crash or explosion, it can absorb the energy better. That makes the building less vulnerable."

But reinforced concrete — concrete with steel bars inside — is heavier. When construction began on the World Trade Center in the late 1960's, concrete was not a viable option because it would have required huge, unwieldy pillars to support the towers' weight. But high-strength concrete developed in recent years has made it more practical.

"The trend is toward more concrete," Dr. Mir said. "The technology has substantially improved. An all-concrete structure would have lasted longer."

Each of the two Petronas Towers has an outer ring of 16 7-foot-wide columns made of concrete and at the center of each tower is a 75-foot by 75-foot concrete core — almost a building within a building — that houses the stairwells and elevator shafts.

Concrete — a mix of cement, sand and gravel — is not impervious to heat. The cement expands at a differ-

ent rate than the sand and gravel, causing cracks. Under intense heat, some types of concrete can flake apart at about three-quarters of an inch an hour, eventually exposing the steel inside.

"It ultimately would lose its strength," Dr. Thornton said.

The concrete core of the Petronas Towers may have remained intact under a similar crash and provided a better escape route than the gypsum-walled stairwells of the World Trade Center.

"In our buildings, most of the stairways are in the core, which is a very safe haven," Dr. Thornton said. The cores of the Petronas Towers are also pressurized to keep smoke and fire out of the stairwells.

In addition to building more fire-resistant structures, another protection against crashing airplanes would be to keep the jet fuel from entering the interior of the building.

At the University of California at Berkeley, Dr. Abolhassan Astaneh-Asl, a professor of structural engineering, has been developing a new construction technique — bolting half-inch steel plates to six-inch concrete walls — to create buildings that

Defending.....

can better survive earthquakes. "The concrete wall prevents the steel from buckling," Dr. Astaneh-Asl said. "The steel prevents the concrete from cracking and shattering. When you marry them, they become very good."

In tests, a half-scale, three-story building proved capable of surviving four magnitude-9 earthquakes. While

'Given enough money, we can design anything.'

the wreckage of the 767's flew into the interior of the World Trade Center, the extra mass of concrete and steel walls would have absorbed much of the planes' momentum.

"Most of the fracturing of the plane will take place outside of the building, not inside," Dr. Astaneh-Asl said. That is the same fundamental physics that make the S.U.V. the

lesser damaged in a collision with a motorcycle.

Much of the fuel would have then splashed against the outside of the building instead of igniting inside, Dr. Astaneh-Asl said.

The World Trade Center attack may lead developers to regard a terrorist attack as a risk to be planned for instead of an unthinkable one-time tragedy.

"The perception of the terrorist threat is where earthquake hazards were in the mid- to late 1960's," said Dr. Jeremy Isenberg, president and chief at Weidlinger Associates, a consulting firm that once helped design resilient military bases and missile silos, and now offers its expertise for federal and commercial buildings. "It took a series of three or four damaging earthquakes to drive home to owners of buildings that they had financial assets at risk."

Developers may now request that more resilience be built into new buildings and into old ones being remodeled, Dr. Isenberg said.

While perhaps not much can protect against kamikaze jetliners, other simple steps may help protect against lesser attacks. Large, heavy

concrete flower pots, like those placed around the World Trade Center after the 1993 bombing, keep a car bomb a safe distance from the structural columns. Concrete walls around loading docks and mail rooms can be thickened to protect against bomb blasts. Jackets of graphite fibers wrapped around columns make them less likely to collapse. Protective glaze can be added to windows to make them less likely to shatter.

In planning for new buildings, structural designers are now more likely to add more redundancy where the collapse of one column does not lead to the collapse of the entire building, as occurred in the 1995 bombing of the Alfred P. Murrah Federal Building in Oklahoma City.

Dr. Thornton said that in one sense, taller buildings are safer than midrise buildings; taller buildings are less likely to topple because their builders generally provided more redundancy into the structures. The design of skyscrapers 50 stories or more, has been "generally very robust," said Dr. Thornton. "For 40 or less, it's not."

But the taller buildings make a more tempting target for terrorists.

An Alert on Hazardous Waste

By Tom Brune

WASHINGTON BUREAU

Washington — The specter of a potential terrorist attack using a truck carrying hazardous waste was raised in Senate testimony by Attorney General John Ashcroft yesterday, a day after he told the House he had requested crop dusters to be grounded.

As federal agents continue to search for as many as 400 people to question about the Sept. 11 attacks, officials remain concerned that other attacks are possible.

"Today I can report to you that our investigation has uncovered several individuals, including individuals who may have links to the hijackers, who fraudulently have obtained or attempted to obtain hazardous-material transportation licenses," he said.

"Given the current threat environment, the FBI

Ashcroft says terror may travel on a truck

has advised all law enforcement agencies to remain alert to these threats," Ashcroft said.

"And I urge Americans to notify immediately the FBI of any suspicious circumstances that may come to your attention regarding hazardous materials, crop-dusting aircraft or any possible terrorist threat," he added.

Later yesterday, a senior Justice Department official said that approximately 20 people have been charged with fraud in obtaining commercial hazardous-materials driver's licenses in the past two weeks.

Some of those charged have been arrested, but others have not, said the official, who declined to divulge further details. The official also refused to link the charges to the terrorism investigation. Justice Department and FBI officials refused to disclose the names of those charged.

At least two people who have been detained, and identified by officials or news reports, also had commercial driver's licenses that allowed them to transport hazardous materials. So far, neither of them has been accused of fraud in obtaining the license.

Last Wednesday in a Chicago suburb, authorities arrested Nabil Al-Marabh, 34, a former Boston cab driver linked to a man on trial in Jordan on terrorism charges. Al-Marabh was arrested on a warrant in an apparently unrelated assault in Boston.

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HN Hiert.....

On Sept. 11, 2000, the state of Michigan issued Al-Marabh a commercial license to operate motor vehicles and an "endorsement" to transport hazardous materials, said Elizabeth Boyd, spokeswoman for the Michigan secretary of state.

Meanwhile, Karim Koubriti, 23, who was taken into custody Sept. 17, had been issued a commercial license and hazardous-materials endorsement in August after attending the U.S. Truck Driver Training School in Detroit this summer, the school's president, Joseph LaBarge, told The Associated Press. A school official confirmed the account.

Also taken into custody was another student, Ahmed Hannan, 33, who failed the driver's test, LaBarge said.

On Sept. 14, three days after the attack, Transportation Secretary Norman Mineta notified trucking trade

groups that state and local officials would place hazardous-materials carriers "under close observation," according to the American Trucking Association.

"There is certainly a danger or risk of a truck loaded with hazardous material being capable of doing serious damage," said Lamont Byrd, director of health and safety for the Teamsters.

Drivers transporting hazardous materials must have both a commercial driver's license and a hazardous-materials "endorsement," Byrd said. The commercial license may take someone six to eight weeks of training, but the endorsement requires simply a four-hour course and a "general knowledge" test at a state driver's license facility.

Since the terrorist attacks on Sept. 11, federal investigators have swept up 352 people and arrested or detained them, and are seeking nearly 400 others to question about any information they might have about the hijacking plot.

Yesterday, the FBI released Al-Badr Al-Hazmi,

34, a Saudi national and Texas doctor who was arrested and has been held in New York as a material witness in the Sept. 11 attacks. Al-Hazmi, radiology resident at University of Texas Health Science Center in San Antonio, may have been a victim of a stolen identity, an official told USA Today.

Meanwhile, two nuclear industry watchdog groups, the Nuclear Control Institute and the Committee to Bridge the Gap, charged that nuclear plants are vulnerable to a terrorist strike, unable to withstand a hit from a plane.

But officials from an industry group, the Nuclear Energy Institute, said those charges were "made for headlines" and that nuclear plants, unlikely to be targets, are some of the most secure facilities in the country. Since Sept. 11, the 103 nuclear power plants across the nation have implemented several temporary security measures.

Timothy M. Phillips and Ellen S. of the Washington bureau contributed to this story.

**Using landfill for WTC debris
exposes Islanders to unhealthy air**

I am a resident of New Springville and I am alarmed and outraged at hearing the mayor announce in his news conference that the debris from the World Trade Center is being dumped in the Fresh Kills landfill.

Regardless of the sorrowful circumstances which occurred [Sept. 11] (my wife and I were unfortunate to be too close to the action, but very fortunate to escape without physical injury), I find it appalling that, after reporting that the debris is laden with asbestos, that it was being dumped *uncontrolled* in the Fresh Kills landfill. TV shots show the trucks leaving the disaster area without any covering over the dumpsters. This same debris will be dumped *uncontrolled* into the Fresh Kills and into *our air*.

We fought through the terror of yesterday's disaster, having to combat smoke, debris and unsafe conditions. I do not wish to die a slow death from air contamination. The mayor nonchalantly made the statement, which I am sure was not heard by many residents of Staten Island. Calls to the borough president, Department of Sanitation and to the *mayor* went unanswered or were answered with the 'I don't know' reply.

This has got to be stopped.

RICH and CAMILLE WYGAND
(via e-mail)
New Springville

SI Advance
9.23.01

90,000 tons and counting

■ **Officials wrestling with the task of handling waste the landfill has never seen**

By **DIANA YATES**
and **HEIDI SINGER**
ADVANCE STAFF WRITERS

The pile of rubble brought to Staten Island from the World Trade Center disaster site is growing, as Sanitation officials, waste industry specialists and public health experts grapple with the problem of disposing of it all.

The challenge is formidable: The thousands of tons of charred debris going to the now-closed Fresh Kills landfill include building materials, chemicals, automotive parts and even human remains.

Sanitation officials cannot yet say how the material will be handled because the former dump is the scene of a massive criminal investigation.

"Our department is saying it's confidential and they're not giving out any information," said Sanitation spokesman Michael Dendekker.

But city police detectives and other investigators have already begun the grim task of categorizing the wreckage. And although

some Staten Islanders are concerned about the potential hazards of living near this debris, federal, state and city officials say that there is no evidence of any threat to the environment or to public health.

As much as 3 million tons of rubble, ash and other materials will eventually be brought to Section 1/9, the southernmost mound of garbage at Fresh Kills, near Arden Avenue and the West Shore Expressway in Arden Heights. Already, 90,937 tons have been taken to the dump, according to the Federal Emergency Management Agency.

This material will not come into contact with the trash already buried there, however. After the dump was closed in March, thousands of tons of soil were layered over the last loads of residential waste.

Most of the rubble from the disaster scene is transported to Fresh Kills by truck or barge, a process some in the waste industry say could take several months.

Not everything that is brought to the dump will be buried there, however. On a tour of the facility last week, William Allee, the Police Department's chief of detectives, said anything that might be used as evidence is catalogued and handed over to the FBI. Body parts that are found are refrigerated.



ADVANCE PHOTO ■ IRVING SILVERSTEIN

Workers sift through debris at the Fresh Kills landfill in their search for clues.

90,000.....



ADVANCE PHOTOS ■ IRVING SILVERSTEIN

Workers stand next to cars crushed during the terrorist attacks on the World Trade Center.

erated and sent to the medical examiner's office in Manhattan for testing. Personal effects are preserved and will eventually be returned to family members of the dead. Other materials, such as the large metal girders, will be carted off and recycled, he said.

John Skinner, executive director of the Solid Waste Association of North America, said the effort at Fresh Kills resembles the cleanup after an earthquake, with a couple of notable differences.

The key distinction is that every bit of rubble from lower Manhattan must be scoured for evidence, a painstaking process that could significantly delay its disposal.

And most demolitions of large buildings do not involve high-intensity fires, said Skinner. The extremely hot fires in the World Trade Center towers probably de-

stroyed the integrity of a lot of materials, so less of it can be salvaged. For example, some metals may have fused together, making it much harder to recycle them, he said.

Finally, the huge amount of material that must be dealt with — along with the fact that it can't be disposed of right away — makes the task even more difficult.

According to the Port Authority of New York and New Jersey, the two towers of the World Trade Center alone included 200,000 tons of steel, 425,000 cubic yards of concrete and 600,000 square feet of glass. They held 12 million square feet of office space. There was room for 2,000 cars in an underground parking facility. Each tower held 99 elevators.

Add to this the contents of the offices and stores and the other affected buildings, and the scope of

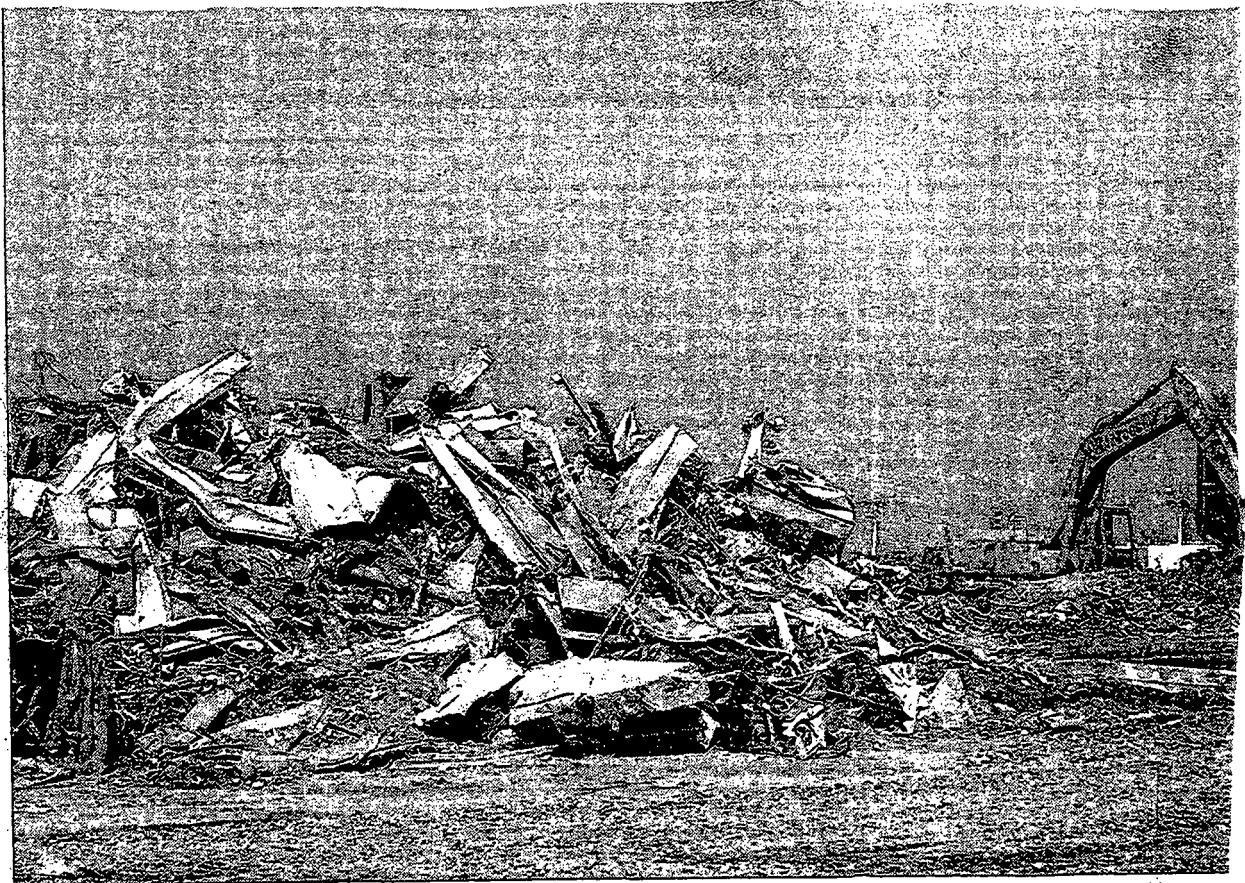
the problem becomes more evident.

Environmental monitoring at the site has found no increase in pollutant levels above federal clean air and clean water standards. Asbestos readings have been extremely low, officials and health experts say, and are not expected to cause lung disease or other serious health problems.

There were no X-ray centers, medical facilities or medical supply companies in the World Trade Center, said city Health Department spokeswoman Sandra Mullin, so "we have not seen any radi-

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40,000....



Piles of debris transported from the World Trade Center stand in the Fresh Kills landfill.

oactive hot spots."

The city uses Geiger counters to check for radiation in the dump trucks before the rubble is unloaded, and the tests have all been negative, she said.

There is also no risk from airborne diseases transmitted from decomposing body parts at the dump, said Ms. Mullin. The only people who may be at risk are those working with the debris, who could cut themselves and become susceptible to blood-borne illnesses. She stressed that the risk is minimal, and said that volunteers are working with gloves and

other protective gear.

Whatever is buried at Fresh Kills will probably have to be tested for as many as 60 different chemicals to determine if any hazardous substances are present.

"I would suspect it's not going to be hazardous," Skinner said. Metals such as cadmium and lead are probably not present in large quantities, he said, and plastics — even when burned or melted — are very stable chemically, and won't contaminate the site.

But, he said, "I wouldn't want to say there's nothing in there without testing."

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Environmentalists push PERC cleanup

By JACOB PALMATEER

Gazette staff writer

Environmental activists called on Gov. George E. Pataki and the Legislature to refinance the State Superfund to clean up dry cleaners that are suspected of poisoning New York State's aquifers.

New York Public Interest Research Group and Citizens' Environmental Coalition hand delivered a letter to Pataki warning of the dangers of a chemical used in the dry cleaning process.

At a follow-up press conference in the Legislative Office Building on Tuesday, Mike Livermore, an environmental associate of NYPIRG, explained that the chemical perchloroethylene [PERC] is known to cause liver and kidney damage and is a suspected carcinogen. According to Livermore, the chemical easily passes through topsoil and can quickly be absorbed into groundwater thereby posing a threat to local water supplies.

According to the letter sent to Pataki, PERC is a dangerous health problem on Long Island because of "an environmentally fragile aquifer system that underlies much of Nassau and Suffolk counties." Livermore also pointed out that an independent survey of dry cleaners conducted by NYPIRG showed that Long Island had a higher concentration than the rest of the state. He pointed out that a previous survey of New York State conducted by the Department of Environmental Conservation had failed to count any on Long Island.

Speculating about why the DEC survey left out Long Island, Livermore said, "It's a big piece of the state with a lot of dry cleaners."

Hours after the environmentalists pleaded their cases, state lawmakers passed bills to fund the Superfund program and to fund construction programs at SUNY campuses. Pataki ordered the special session last week to deal with those issues. The lawmakers waited for hours to act while Pataki and Senate Majority Leader Joseph Bruno and Assembly Speaker Sheldon Silver debated other budget issues that went unresolved.

In a fact sheet released by the U.S. Department of Health and Human Services in 1997, exposure to high levels of PERC are said to cause headaches, dizziness, nausea and death. Skin irritation may also occur after prolonged contact with the chemical. These symptoms most often occur in work environments where PERC is commonly used for dry cleaning and metal degreasing.

PERC has also been shown to cause liver and kidney tumors in laboratory animals. The National Institute for Occupational Safety and Health recommends that the chemical be treated as a potential carcinogen.

"You can't inject humans with PERC to see what happens," Livermore said. "It is just not known how all chemicals affect humans."

Although PERC has not been shown to cause cancer in humans, the laboratory tests have raised enough concern among researchers to have use of the chemical regulated by the Environmental Protection Agency. The EPA has set the maximum level of PERC contamination in drinking water at .005 milligrams per liter.

In addition, anyone who wishes to use PERC in the workplace in New York State must first be trained and certified by the DEC.

In the letter, the environmental activists highlighted the steps they believe need to be taken to protect the

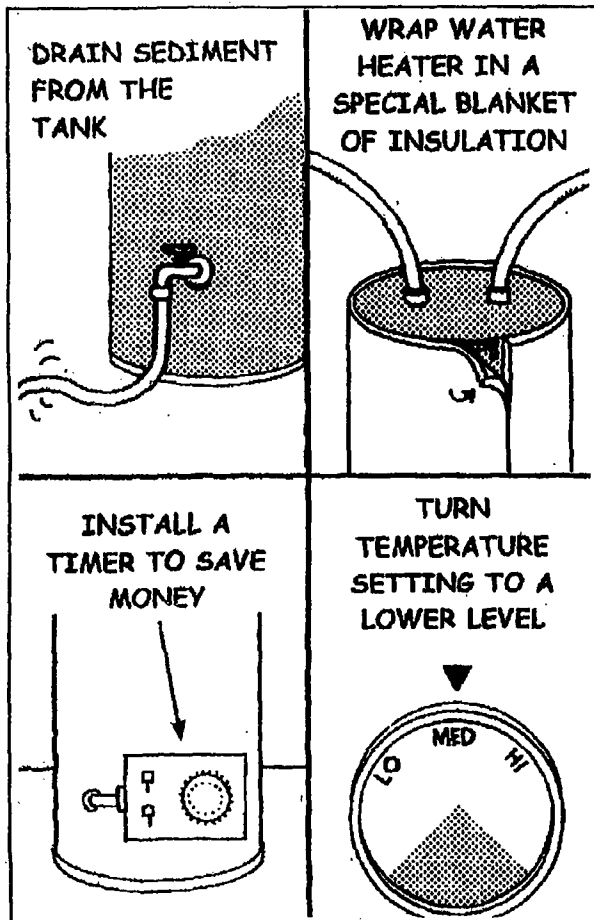
groundwater of New York State. They suggested that a new, inclusive study should be conducted of dry cleaning

sites to replace the partial study conducted earlier this year by the DEC.

The activists explained that cleanup standards must be maintained and that the DEC must honor its current regulations that call for full environmental restoration.

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Ensure a longer life for your water heater



By **AL CARRELL** and **KELLY CARRELL**

For longevity, as far as appliances go, your water heater ranks up there with the best. However, it does require a little bit of regular maintenance to ensure a long life.

Whether you have a gas water heater or an electric water heater, you can get a buildup of mineral deposits in the tank that occurs when water is heated. These deposits can build up to a significant amount over time and can cause lots of different problems. If you will drain the tank periodically, you can keep this sediment level down to a minimum.

First, hook up a garden hose to the spigot on the front of the tank, located near the bottom. Run the hose outside the house. Then turn the spigot on. Water should start running out of the end of the hose. You should also see the sediment coming out as well. After a few minutes, the water coming out should clear up indicating that most of the sediment has been cleaned from the tank.

Turn the spigot off and remove the hose. If you find that it drips, install a garden hose end cap with a washer. Since this tap doesn't get used much, they tend to drip, and it's a good idea to have the end cap ready, just in case.

Another way to keep your water heater working efficiently is to install a covering of insulation around it. Kits are available at home centers and are made for different sizes and types of water heaters. Just

pick the one that fits yours and dress it up.

Special overcoats are made for gas water heaters to insure a safe fit. The extra insulation will allow the water inside to stay hot longer and require less heating from the elements.

If you can find a timer for your model of water heater, have it installed and heat your water when you need it, not all day long.

If your water heater is set on "high," you might be able to turn it down to a lower temperature and save more money that way.

If you have small children, it's safer anyway, and you won't have to worry about accidental scalding.

Take good care of your water heater and keep yourself out of hot water!

* * *

Q. I live in a nice trailer home, but it has a plastic-coated wallboard. I want to paint this, but I want to make sure the paint will stick. How or what do I use?

A. You need to scuff sand the entire surface to take the gloss or shine off of it. Then use a good quality primer and paint. Wallpaper is another alternative that should work well. Just make sure to use sizing on the wall first.

* * *

Q. There is a problem in my bathroom. The pipe that comes out of the wall for the bathtub spout has

Ensure.....

broken off flush with the wall. How can I replace it without tearing out the tile wall?

A. There is a small, fairly inexpensive tool called a stub wrench or nipple extractor. It has a tapered toothed tip that you push into the pipe and turn it counterclockwise to remove what's left of the pipe. Once removed, you can just install a new pipe and spout.

* * *

Q. My basement has been moist this summer, and some books I had been saving got a little mildew on them. Can I get rid of the smell somehow?

SUPER HANDYMAN

A. Try sprinkling between the pages with cornstarch. Allow the cornstarch enough time to absorb and draw the mildew out, and then gently vacuum it away.

* * *

If you are surfing the Net these days, you might be interested in a list of our favorite home-related Web sites. As you know, there are an infinite number of choice sites for information and products. We have compiled a list of some that you might not have tried yet. If you would like a free copy of our list, just send a self-addressed, stamped envelope to The Super Handyman at the Staten Island Advance, and we will get a copy out to you right away. Surf's up!

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Why take a cold shower? Get a larger water heater

By JAMES DULLEY

Q. Our old electric water heater does not leak yet, but we run out of hot water for morning showers. Would a new water heater help and does it make economic sense to get a new one before the old one leaks?

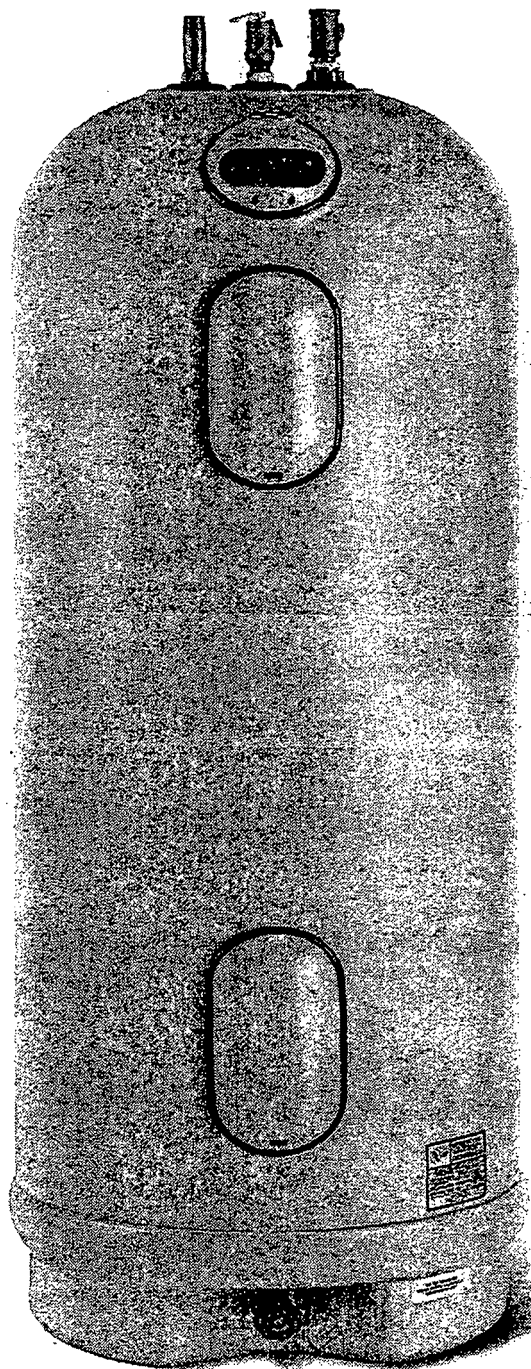
A. It is often wise to replace an old (at least 10-years old) water heater with a new super-efficient model. With new designs and better tank insulation, installing a slightly larger model to satisfy all your morning hot water needs will still cut your utility bills. Older electric water heaters cost more to operate than most people realize. For a typical family of four, replacing an old model at a 0.80 EF (energy factor) with a new one at a 0.94 EF, saves about \$100 per year. During its life, this compounds to more than \$1,000. Some of the most efficient models also use a "never-leak" design with lifetime warranties. These models have a spherical top, instead of the typical flat top, to provide extra-thick insulation where the water is the hottest.

Never-leak water heaters use all plastic and composite materials so there is no steel to rust near the water. The inner tank, made of tough, stable polybutylene, is wrapped with multiple layers of wound fiberglass for strength.

This inner assembly is then encapsulated in thick rigid foam insulation. The exterior shell is made of tough polyethylene plastic that resists dents and scratches. No anode rod is needed, so it does not create a water odor problem.

Some water heaters now include furnace-type setback clock thermostats that can use up to 15 percent less electricity. Others have new efficient electronic controls with four settings: normal, scald-resistant, energy-saver, and vacation/cabin. The normal setting allows for any water temperature.

To protect children and the elderly, the scald-resistant setting automatically adjusts the temperature. The energy-saver setting monitors your hot water usage patterns and modifies the heating cycles for



It is wise to replace an old water heater with a new super-efficient model.

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Why

the lowest utility bills. The vacation/cabin setting lowers the water temperature to 50 degrees to prevent freezing.

If space is limited and you cannot install a larger model, some new high-quality models offer 5,500-watt (3,800 or 4,500 watts is typical) heating elements. These powerful 5,500-watt elements provide more hot water quickly.

Most steel water heater tanks have a thin inner glass lining to stop corrosion. Another effective design uses a one-half-inch thick stone lining to extend the tank life. The stone also adds a little more insulation value.

Especially in hard water areas, select a model with larger, hand-size sediment clean-out access holes. There are also special dip tube designs that swirl the incoming cold water to keep sediment from building up.

* * *

Write for (instantly download — www.dulley.com) Update Bulletin No. 568 — buyer's guide of 12 manufacturers (55 models) of super-efficient and never-leak electric water heaters listing water outputs, EF's, warranties, features and a savings/payback chart. Please include \$3 and business-size SASE. James Dulley, the Staten Island Advance, 6906 Royalgreen Dr., Cincinnati, Ohio 45244.

* * *

Q. You had mentioned in a recent article that stapling foil under the roof rafters would help block heat. I can only find single-sided foil with a paper backing. Which way should the shiny side face?

A. Stapling foil under the attic rafters will block radiant heat from a hot roof during the summer. During the winter, the roof does not get nearly as hot, so there is little negative effect from the foil.

The shiny side should face downward toward the living area. Foil is effective, not because it reflects the heat back upward, but because the shiny (low emissivity) surface will not readily reradiate the heat to the attic floor below.

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Attacks delay dredging plan

ASSOCIATED PRESS

ALBANY — The final decision on a \$460 million plan to dredge the Hudson River of PCBs will be delayed by at least two weeks, due in part to the tragedies in New York and Washington.

The U.S. Environmental Protection Agency had to evacuate its Manhattan offices and officials are assisting in the World Trade Center cleanup.

It was unclear when the final decision, originally expected in late September, would be made.

The state, which was expected a week ago to begin a 15-day review of the dredging plan endorsed by EPA Administrator Christie Whitman, never received the documents, Jennifer Post, a spokeswoman with the state Department of Environmental Conservation, told the Times Union of Albany in yesterday's editions.

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Reptile in Clove Lakes

The mythical alligator of New York City's sewer system has apparently made its way to a new ZIP code in Clove Lakes Park.

A young alligator about 18 to 24 inches long was seen lurking yesterday along the shoreline of Clove Lake near the World War II Veterans Ice Skating Pavilion.

The little gator was spotted around 3 p.m. by Phil Sinclair of Port Richmond, who was picnicking in the park. The 34-year-old city bus driver alerted officials at the nearby Parks Department Borough Office.

"I went in there and said, 'I hope you don't think I'm crazy, but do you know you have a baby alligator in the lake?'" Sinclair said.

Police officers from the 120th Precinct, carrying a lasso-like retriever, tried to catch the reptile, without success. As many as 20 people watched as the little creature bobbed in the water evading its would-be captors.

It was still at large last night.

Parks Department Enforcement Cpl. Rob Simon said yesterday that the Clove Lakes gator was probably a pet that was dumped after its novelty wore off.

"People pick these things up in Florida as babies and they bring them up here. When they get too big, into the lake they go," Simon said.

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Gator evades capture

■ Reptile has moved
in to Clove Lake

By DAVID ANDREATTA
ADVANCE STAFF WRITER

The mythical alligator of New York City's sewer system has apparently slithered its way to a new ZIP code in Clove Lakes Park.

A young alligator about 18 to 24 inches long was seen lurking yesterday along the shoreline of Clove Lake near the World War II Veterans Ice Skating Pavilion.

The little gator was spotted around 3 p.m. by Phil Sinclair of Port Richmond, who was picnicking in the park. The 34-year-old city bus driver alerted officials at the nearby Parks Department Borough Office.

"I went in there and said, 'I hope you don't think I'm crazy, but do you know you have a baby alligator in the lake?'" Sinclair said.

Police officers from the 120th Precinct, carrying a lasso-like retriever, attempted to apprehend the elusive reptile, without success. As many as 20 people watched as the leathery little creature bobbed in the water evading its would-be captors.

It was still at large last night.

Sightings of a two-foot caiman, a member of the crocodile family, in Central Park in June caused quite a media sensation. After five days, a Florida man and woman who wrestle alligators for a living flew to New York and caught the reptile in less than 30 minutes.

Parks Department Enforcement Cpl. Rob Simon speculated yesterday that the Clove Lakes gator was a pet that was dumped after its novelty wore off.

"People pick these things up in Florida as babies and they bring them up here. When they get too big, into the lake they go," Simon said.

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EPA to widen engine pollution controls

■ **New rules will affect heavy machinery, yachts, snowmobiles and off-road motorcycles**

By JOHN HEILPRIN
ASSOCIATED PRESS

WASHINGTON — The government plans new pollution controls on heavy machinery, yachts, snowmobiles, off-road motorcycles and all-terrain vehicles.

The goal is to reduce air pollutants and the smog that drifts from cities toward national parks, Environmental Protection Agency officials said yesterday. The plan would add to manufacturers' costs, but the agency is considering ways to help lessen the impact.

"If left unregulated, pollution from these sources will continue to increase, becoming a larger part of the overall mobile source pollution," EPA Administrator Christie Whitman said.

The proposal, covering several types of non-

road engines, would help limit the release of hydrocarbons, carbon monoxide and nitrogen oxides into the atmosphere.

Public hearings on the proposal are set for Oct. 24 in Washington and Oct. 30 in Denver.

Messages left yesterday for representatives from snowmobile, ATV and yacht manufacturers were not immediately returned.

The engines involved account for about 13 percent of the hydrocarbons, 6 percent of the carbon monoxide and 3 percent of the nitrogen oxides emitted from all mobile sources; the EPA said.

Left unregulated would be the large diesel engines in bulldozers, tractors and other construction equipment whose emissions are sources of smog and soot, said Frank O'Donnell, executive director of Clean Air Trust, an environmental watchdog group.

The EPA said it would regulate:

■ **Spark-ignition nonroad engines** rated over 25 horsepower. These usually are car engines used in heavy machinery such as forklifts, airport baggage transport vehicles and farm and industrial equipment. The government would adopt standards set by California in 1998 and make them effective nationwide in 2004. They

would become even stricter after 2007.

■ **Recreational diesel marine engines** used in yachts and other pleasure craft. The government wants to use standards similar to those in place for commercial diesel marine engines, but give manufacturers two years to adapt emissions control technology.

■ **Snowmobiles.** The EPA proposes a standard to cut hydrocarbon and carbon monoxide emissions by 30 percent in 2006 and by 50 percent in 2010. The agency said it believes that can be done by adapting technology from other engine types.

■ **Off-road motorcycles and all-terrain vehicles.** The government hopes to encourage engine changes starting in 2006. In 2009, these vehicles would have to meet more stringent standards. Vehicles intended for use in competition would be exempt.

Already regulated and not included in this proposal are the types of engines used in lawnmowers, garden power equipment and some farm, construction and utility machines.

On the Net:
EPA Office of Transportation and Air Quality: <http://www.epa.gov/otaq/whatsnew.htm>

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Admitting failure, Calif. scraps energy deregulation ↙

By KAREN GAUDETTE
ASSOCIATED PRESS

SAN FRANCISCO — California's Public Utilities Commission voted yesterday to take away the right of consumers to choose their electricity provider, one of the last vestiges of the state's failed experiment with energy deregulation.

The PUC also approved a 12 percent rate increase for residen-

tial customers of San Diego Gas and Electric Co., but delayed action on whether to pass along rate hikes requested by the state's power-buying utility to millions of other ratepayers.

That approval is necessary to encourage Wall Street to buy \$12.5 billion in bonds the state is issuing to recoup the \$9.5 billion-plus it has spent buying power for three financially ailing utilities, according to Department of Water Re-

sources officials and Gov. Gray Davis.

Allowing consumers to buy power directly from retailers such as Green Mountain Energy or Enron Corp. was one of the key elements of the failed deregulation system passed in 1996.

Its end will affect customers around the state, including more than 170 school districts that had pooled together to seek a new electricity provider.

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Backyard wildlife

LOS ANGELES TIMES NEWS SERVICE

The National Wildlife Federation has been promoting its Backyard Wildlife Program since 1973. The idea? Encourage gardeners to replace fussy ornamentals with naturalistic plants that provide shelter, food, protection and nesting sites for birds and other desirable animals. To date, more than 30,000 homeowners have done just that (www.nwf.org/habitats).

Recently, the federation came to the rescue of another threatened species: the dot-com venture.

The environmental group has bought eNature.com, a San Francisco-based company with an extensive, interactive nature site based on Audubon field guides. As a result, the site — www.e-nature.com — has been expanded to include the Backyard Wildlife Program, and the chance to evaluate your own garden. There's advice on conservation measures, pond-building, which plants attract butterflies and more. If it comes up lacking, the electronic tutorial will let you identify plants and other garden elements to draw and harbor wildlife.

Web-site users also can create a mini Web site of their garden, said co-founder Chris Krueger, by taking digital photos of their backyard and by downloading file pictures of plants and animals found specifically in their own garden. You can send electronic postcards or choose to post your habitat garden on the larger site. The services are free.

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France's ban on British beef ruled illegal

By PAUL AMES
ASSOCIATED PRESS

BRUSSELS, Belgium — France's ban imposed on British beef imports because of mad cow disease fears is illegal, according to a preliminary ruling from the European Court of Justice.

The court's advocate general said France must implement the European Commission's decision in 1999 to lift the ban on British beef imposed after a serious outbreak of bovine spongiform encephalopathy, or mad cow disease.

British beef has since been banned again along with all British livestock and meat exports because of this year's outbreak of foot-and-mouth disease.

A final verdict from the European Union's high court is not expected until later this year. Although the advocate general's opinion is not binding on the court, its panel of judges usually follow the ruling.

Advocate General Jean Mischo did say, however, that France's decision to ban imports of British beef and beef products coming via third countries was justified, given the potential problems in tracing the meat's origin.

At the height of Britain's outbreak, the commission imposed a worldwide ban on British beef exports in March 1996. Following the introduction of strict control measures in Britain, the EU's executive branch allowed Britain to resume limited exports in 1999.

But France refused drop its ban, citing continued risks of contamination from animal feed and maternal transmission.

The president of Britain's National Farmers' Union welcomed the decision but said the damage had already been done. Farmers are frustrated that they had to resort to court action "and that this illegal action by France of the last two years has caused so much damage to Britain's beef industry," said Ben Gill.

Bovine spongiform encephalopathy is a fatal, brain-wasting disease believed to be caused by the practice of feeding cattle the ground remains of other animals. Eating meat from infected animals is thought to be the cause of a similar deadly ailment in humans known as variant Creutzfeldt-Jakob disease.

Foot-and-mouth disease is not dangerous to humans but is highly infectious among cattle, sheep and pigs.

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Cow disease in Asia

TOKYO — A test has shown that a Japanese animal slaughtered in August carried the mad cow disease, the Ministry of Agriculture said yesterday, confirming the first known case of the deadly brain-wasting illness in Asia.

The Japanese government had announced last week that the 5-year-old dairy cow in central Japan might have suffered from the sickness and sent a tissue sample to experts in Britain for a conclusive diagnosis. The results came back late Friday, the ministry said.

It is still unknown how the cow contracted the disease, though investigators are focusing on animal feed as the likely cause, said Kazuki Ikeda, an official at the ministry's animal health division.

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New Delhi Journal

In India's Capital, a Prayer for the Belching Buses

By CELIA W. DUGGER

NEW DELHI, Sept. 27 — Here in the nation's capital, more than four million people are bracing for a possible Supreme Court decision Friday to banish from the roads thousands of diesel buses they ride daily — buses that belch foul exhaust into the blighted air.

More than two years ago, the court — India's main catalyst of environmental reform — ordered authorities to replace Delhi's entire diesel fleet with 10,000 buses that run on cleaner compressed natural gas. A rococo bureaucracy and a lackadaisical political establishment simply have not done it. The deadline is Sunday.

Like other sprawling megalopolises in the developing world, Delhi, a state of 13.7 million people that includes the capital, is grappling with how to clean up its unhealthy atmosphere.

The problem is acute not only here, but in rapidly growing cities across the country. The World Health Organization estimates that as many as 100,000 Indians die each year because of air pollution.

Over the last decade, Delhi has made strides in reducing auto emissions through a switch to unleaded gasoline, among other steps, and there are modest signs that Delhi's air is somewhat cleaner. But Delhi still has among the highest levels of particulate pollution in the world, the worst kind for public health.

With the deadline looming for buses to change to compressed natural gas and an eleventh hour court hearing scheduled for Friday, panicked bus owners today engaged in that Gandhian staple of protest: a hunger strike unto death.

The stolid, resolutely well-fed owners of small bus fleets clustered under a tent near the Supreme Court. "Let Existing Vehicles Complete Their Life," said one plaintive banner dangling behind them.

The bus owners also gathered Wednesday at a Sikh gurudwara, or place of worship, to beseech a higher power for aid. Their prayer was for help in preserving their businesses — and for the right to continue operating their buses on diesel.

"When we had no other option, we knocked on the door of God," said Harish Sabharwal, whose family owns 24 buses.

They were joined at the gurudwara by several politicians, including Delhi's chief minister, Sheila Dikshit, who might have been better off praying for their own political survival. Already, people here blame them for the failure to fulfill the court's July 1998 order. And public ire will grow if millions of bus riders cannot get to work and school next week.

"You want to pass the buck," Chief Justice A. S. Anand said sternly at a hearing last week, scolding officials. "We are not going to run the government for you. You better discharge your duties."

Environmentalists here had hoped Delhi's transition to compressed natural gas, or CNG, would serve as a model for the world's most polluted cities, but instead it has turned into a cautionary tale of how bureaucratic mulishness and political resistance to change can foil the highest court in the land, at least for a time.

For almost two years after the Supreme Court mandated the complete phaseout of diesel buses, Delhi continued licensing new diesel buses.

They cost half as much as buses that run on compressed natural gas, so private operators kept buying diesel ones and Delhi let them do it.

At the same time, the central government's Ministry of Petroleum and Natural Gas failed to ensure delivery of sufficient compressed natural gas to meet surging demand, not only from buses, but from motorized rickshaws and taxis, which the court had also ordered to switch to cleaner fuels.

"The government here is probably the most incompetent in the world on environmental issues," said Anil Agarwal, an environmentalist who serves on an authority set up to advise the Supreme Court. "We make recommendations, but who will follow them?"

For months, the shortage of compressed natural gas led to an explosion of snaking lines of bus and rickshaw drivers waiting 8, 10, even 12 hours to fill their tanks.

One recent afternoon, 206 rick-

shaws waited in a single line that stretched for half a mile. Some drivers snoozed. Some stared blankly. Many fumed about the hardships they have endured.

Because of long hours waiting for gas every day, Lal Bahadur, who rents a rickshaw for about \$3 a day, ceased to earn enough to support his wife and daughter living in a far-away village.

Mukesh Kumar, who was married at 11 in the tradition of his low caste family, said he had been unable to send to his village for his wife to come live with him here and consummate their marriage because he was so broke.

"The Supreme Court told the government to do it and they didn't do

it," said another disgusted rickshaw driver, Muhammad Salahuddin. "If you keep producing children and don't provide bread, this is what happens."

In recent days, lines have eased as stations developed a coupon system for rationing gas and the government forbade the sale of compressed natural gas to privately owned cars, but the shortage remains.

The Supreme Court and the national and Delhi governments are now playing the legal equivalent of a game of chicken. The central and Delhi governments are begging for more time and permission to allow use of diesel.

Whatever the judges decide, the case will undoubtedly live on long after the next crop of CNG buses are obsolete.

M. C. Mehta, the small-time lawyer who filed the public interest lawsuit 16 years ago on Delhi's air pollution, sat recently in his cramped, raty office, marveling at the extraordinary resistance of those in power to do what the court plainly told them they must.

"I never thought I would have to suffer for so many years," he said. "It is unending."