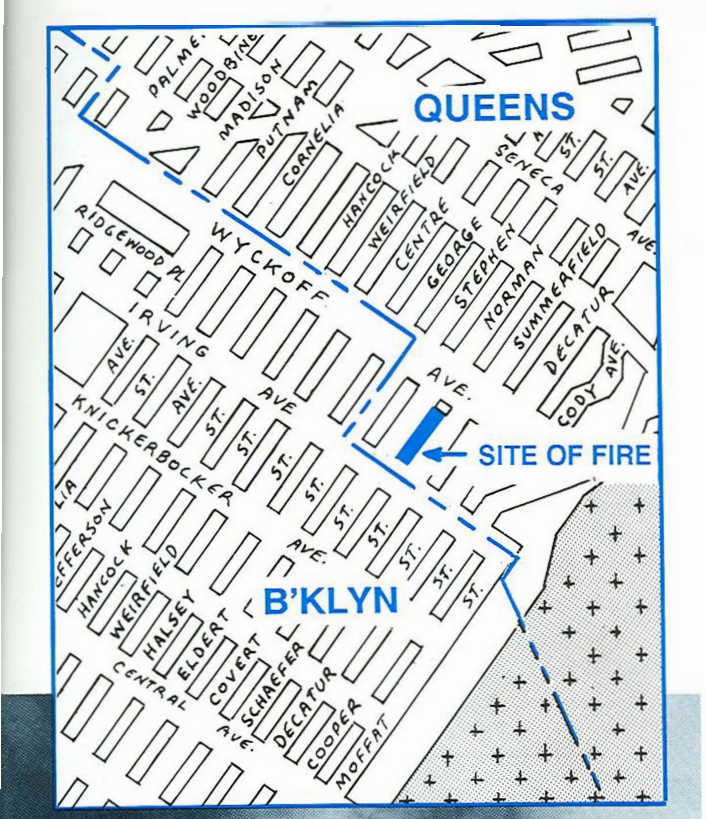


Palm Sunday last year was bright and sunny. So it was hard to imagine that a fire could reach the proportions it did without being seen and reported sooner. But with more than 25,000 square feet of floor space and a roof as high as 25 to 28 feet, the factory hugging the Brooklyn-Queens line could contain a tremendous amount of fire and smoke.

When finally it was noticed, the fire made a double impression—two boxes, two boroughs, two Fire Department responses.

At 1337 hours that March 19, the Queens Communications Office received telephone notification of a rubbish fire at 1550 Covert St. Box 4019 was transmitted, and when a second phone call came in, the box was quickly filled out. B.C. Patrick Cawley, Battalion 37, responded.

At 1340 hours, the Brooklyn Communications Office received an ERS alarm reporting a fire in a commercial building on Irving Avenue. Box 897 was transmitted, and B.C. Alexander Parzych, Battalion 28, responded.

Unaware of each other briefly, the first-arriving units at both locations transmitted 10-75s within four minutes of each other. B.C. Cawley, on his arrival, was greeted by a 185-by-200-foot factory where smoke was pushing from the many roof vents and seeping from small cracks in the walls. Because it was the weekend, the factory was well secured. Soon after, B.C. Parzych pulled up in front of a two-story, 25-by-45-foot commercial building, with smoke pushing from the doors and the steel-shuttered windows.

PIECED TOGETHER

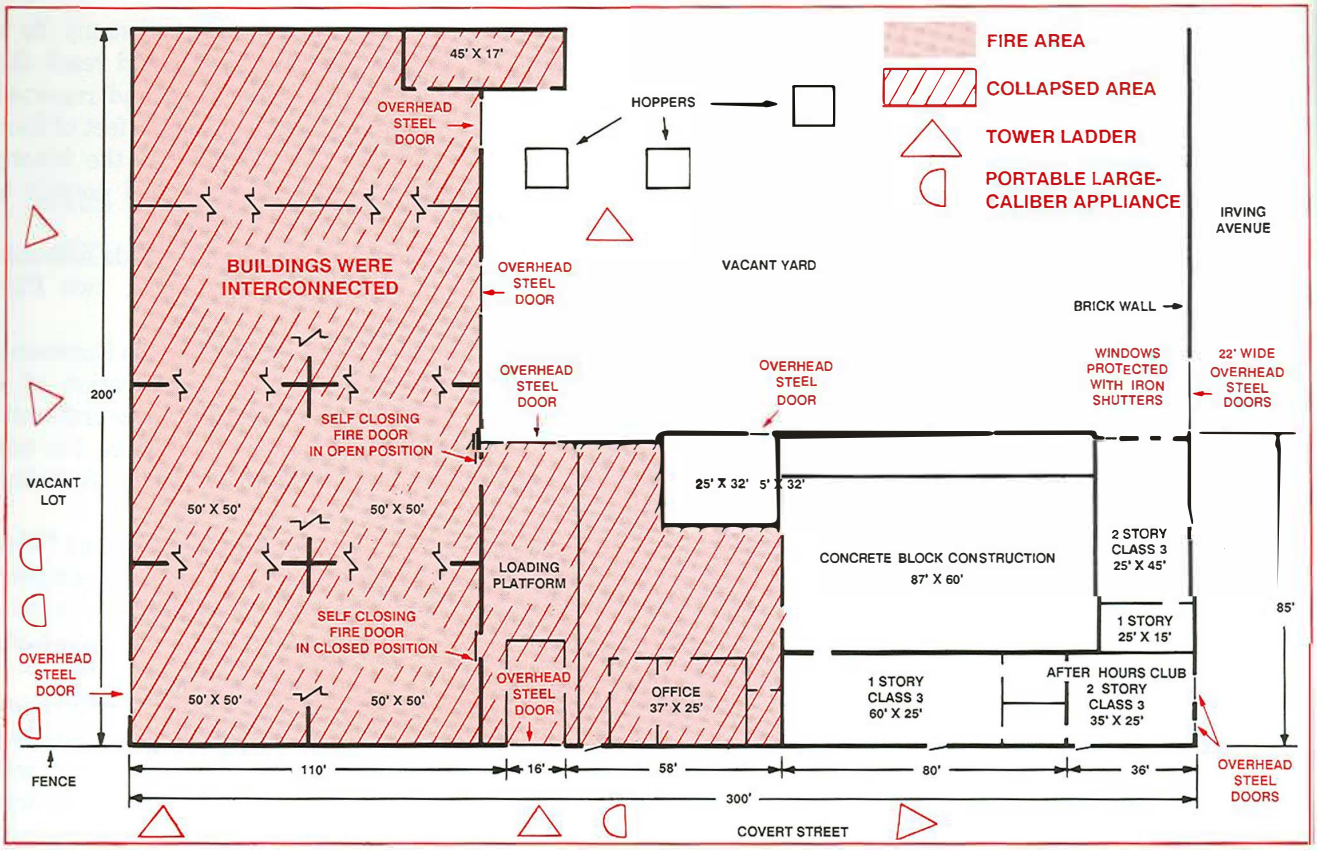
The magnitude of the fire started to become clear. The two structures were part of a J-shaped complex of nonfireproof and heavy-timber buildings erected at different times and later connected by various extensions. Fire had spread through the roof and through open doors between several of the buildings—including a fire door that was designed to be self-closing.

The Covert Street side gave the best perspective on the building, and B.C. Cawley, who had arrived first and transmitted a 7-5 signal, established his command post there. As a result, Covert Street was designated the exposure 1 side of the entire complex. Chief Parzych became the all-hands chief, and the two operations were combined under box 4019.

In the heavy smoke at the exposure 4 end, the truck companies that had responded with Chief Parzych would open up concealed spaces to check for fire extension, and engine companies on Irving Avenue stretched several precautionary handlines.

The engine companies on Covert Street supplied the sprinkler siamese and stretched a 2½-inch line to a large, overhead, metal door at the middle of the complex. The locks were plentiful and strategically located, thus difficult for the truck companies' forcible entry teams to work on.

Opposite them at the rear, B.C. Parzych's units had



(Above) Three of the four portable, large-caliber appliances needed were operated from the exposure 2 side of the complex. *Photo by Bill Louw* (Below) Portable ladders on the exposure 1 side gave access to the mismatched collection of roofs, while a tower ladder added yet another large-caliber stream. *Photo by Jim Regan*

been having their share of problems gaining entry to the fire building through a similar overhead door.

The door at the front opened first. Even when it did, the door—perhaps warped by the heat—could be raised only halfway. But it was enough to let our members—and plenty of air—into a truck loading area. The interior lit up as the oxygen fed the fire.

Sizing up the interior, B.C. Cawley found a heavy fire load:

- Pallets and cartons full of plastic bags, burning fiercely;
- About half a dozen 55-gallon drums (later identified as containing wax);
- Two trucks, their gas tanks presumably full; and
- Several 20-pound propane tanks, used to fuel high-lows, severely exposed to flame. (Although indoor storage for this use is legal—see "Indoor Storage and Use of LPG," page 5—these tanks weren't in a separate storage room as required.)

The chief also noted that, although the sprinkler system was being supplied, there was no water coming from the fused sprinkler heads. It would turn out that the building owner had shut the sprinkler valves because vandals had damaged the system many times.

A LUMBERYARD OVERHEAD

The most immediate concern, Chief Cawley recognized, was the roof. It combined heavy-timber and lightweight wood truss construction, consisting of enough wood to be an elevated lumberyard. The truss was heavily involved; many of the pieces were near the breaking point, and collapse seemed imminent.

B.C. Cawley ordered all members out of the fire building, off the roof, and out of a collapse zone. He then requested a second alarm for box 4019, and special-called an additional tower ladder. It had been 10 minutes since the 10-75 for that box.

The roof over the Irving Avenue building and several storefronts constituting the exposure 4 end was still secure, however. Fortunately, the fire hadn't extended to that end. Firefighters took a handline to a large door that linked a 1½-story, concrete-block building at the rear with the fire building, and they stopped the fire at that wall.

D.C. James Ward, Division 15, arrived at 1401 hours, as the fire was venting itself through the roof on the exposure 2 end of the complex. Columns of flame and thick, black smoke rose 50 feet into the air. To the left of the loading dock, cracks were showing in the wall facing Covert Street, and a slight bulge was forming.

Chief Ward expanded the collapse zone around the portion of the building that was likely to collapse. Then the area was cordoned off with boards and red plastic tape to warn off later-arriving units. In addition, D.C. Ward designated each side of the building a sector and assigned a battalion chief to each.

Over the Handie-Talkie came word of the unmarked, 55-gallon drums that had been discovered in the loading area. Division 15 special-called Hazardous Materials Co. 1 and had the dispatcher contact the Sanitation Department for a sander. Both units could help with diking the material if it began to leak.

Three tower ladders, a portable large-caliber appliance, and four handlines were in position on the exposure 1, 2, and 3 sides. But the demand for water was straining the supply. Satellite 4 had already been dispatched, and an urgent request for help went in, via the dispatcher, to the city's Water Supply Bureau. At the same time, D.C. Ward special-called a battalion chief to act as water resources officer. (See "The Water Resources Officer," page 6.) B.C. Albert Kranz, Battalion 51, responded in that capacity.

Forcible entry into the exposure 1 side's overhead, steel door was complicated by a wealth of locks. When the door did open, it opened only halfway. *Photo by Jim Regan*

Conditions were worsening. Most of the original fire building was in flames, and the fire threatened the building extensions at the rear on the exposure 2 end. Division 15 transmitted a third alarm at 1407 hours, along with a special call for another tower ladder.

Indoor Storage and Use of LPG

The use and storage of LPG (liquefied petroleum gas—of which propane is the most common type) inside buildings are generally not permitted in New York City. However, there are exceptions.

One is the use of LPG as fuel for materials-handling equipment such as high-lows (forklifts). In such cases, each piece of equipment must:

- Use cylinders with a capacity of not more than 1½ cubic feet;
- Have an Underwriters Laboratory-approved fuel system; and
- Have a carbon dioxide or dry chemical extinguisher.

Storage of reserve and empty cylinders is also permitted. While outdoor storage is preferred, if that's not available, indoor storage is allowed. The requirements for indoor storage include:

- A storage room used exclusively for LPG, and approved by the city's Buildings Department. The room must have walls with a 2-hour fire-resistance rating; a 1½-hour-rated, self-closing door; and explosion venting.
- A warning sign outside the storage room, and "No Smoking" signs inside.
- And at least two 20-pound dry chemical or carbon dioxide extinguishers at the storage area.

High-lows and similar equipment using LPG for fuel may not be used or stored in basements or cellars. But they're often found elsewhere in factories, freight terminals, and similar occupancies where large quantities of material are stored. LPG might be found throughout such a building.

See *Fire Prevention Directive 6-67*, dated June 21, 1974, for more details.

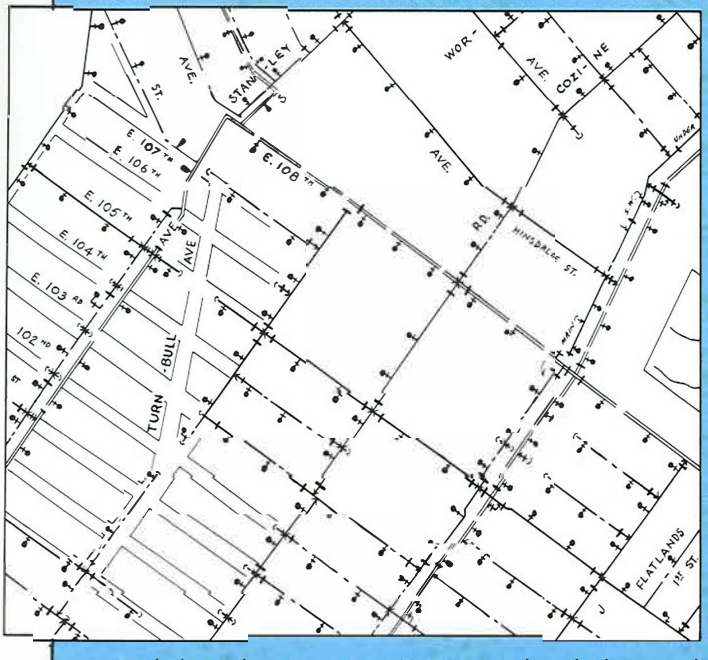
The Water Resources Officer

by KEN GRABOWSKI
Captain, Engine Co. 207/Maxi-Water Unit

The chief in command of an operation may assign another chief to oversee the function of supplying water. But even when that's not done, the officer on duty in Engine Co. 207—which responds on second or third alarms, depending on the location—acts as water resources officer.

Engine 207, the Maxi-Water Unit, is one of six engine companies with companion apparatus that constitute the Maxi-Water System. It has the same manning, the same equipment (such as manifolds, satellite monitors, foam-producing devices, and large-caliber appliances), and the same 2,000-gpm pumping capacity as the five satellite units.

In addition, though, Engine 207 maintains in quarters a file of water maps covering the entire city. Since many hydrants have no markings to indicate the size of the main to which they're connected, only the Maxi-Water Unit and the city's Water Supply Bureau can provide this information.



Symbols on the Maxi-Water Unit's maps show hydrants and connections throughout the city; the variety of lines indicate the sizes of water mains.

One satellite unit responds on a 7-5 signal. That's also when the Maxi-Water Unit's role begins, as spelled out in *All-Units Circular 274*, "Maxi-Water System":

Upon receipt of a 7-5 signal for any box in the city—The members of Engine 207 monitor the radio of the appropriate borough and consult the water maps to determine the size and location of all water mains near the incident. Any main that's 12 inches in diameter or larger is listed as a possible hook-up site for the engine companies in the Maxi-Water System.

While responding—The Maxi-Water Unit's officer announces these hook-up sites for the use of a second satellite, which responds at the same time as Engine 207. These are only potential hook-up sites, because some of them may no longer be available; other engine companies may be already using them.

On arrival—The Maxi-Water Unit's officer:

- Reports in to the chief in command as water resources officer.
- Finds out from the chief whether there are any special water supply problems, and whether more lines or large-caliber streams will be needed.
- Coordinates the Maxi-Water System operations.
- Determines which hook-up sites are actually best for Engine 207 and the satellite units. Other engine companies that are located at a desirable hydrant but not pumping may be ordered to move. This will allow the units of the Maxi-Water System to make shorter stretches of 4½-inch hose and still make full use of their pumping capacity.
- Keeps the chief in command informed of water delivery operations.
- If necessary, coordinates operations with fireboats or acts as liaison to the city's Water Supply Bureau.

With the problem of providing adequate water supply thus delegated to the water resources officer, the chief in command can concentrate on overall management of the operation.

Help of another kind was also needed. A crowd had gathered on the exposure 3 side, and now it began to drift past the fire lines. Division 15 put in a request for police assistance.

When B.C. Kranz arrived, he examined the water map to find more mains. The nearest one was two or more blocks away; the Maxi-Water System companies stretched large-diameter hose to it in a relay.

As predicted and prepared for, a 45-foot section of the fire building's front wall came crashing down. But because the collapse zone had been established, the falling wall caused no injuries and no damage to Fire Department equipment.

The crash of the wall was followed by other sounds from within the building: propane tanks exploding and structural members giving way. The drums of wax opened at their seams, and as the burning liquid spread, it carried the fire to one of the trucks.

For one of the overhead, steel doors that faced onto the rear yard, only cutting would provide access. *Photo by Jim Regan*

A concrete-block division wall along the loading dock started to crumble, as well. The roof began falling in over the entire fire area and, in doing so, it allowed the tower ladder streams the penetration they needed to reach the seat of the fire.

At 1423 hours, the citywide command chief, D.A.C. William Jones, arrived and assumed command. He consulted with Division 15 and the sector chiefs, then surveyed the fire area. In the exposure 4 end of the complex, the fire was now threatening the storefronts that wrapped around the larger building of concrete-block construction. So Chief Jones special-called another tower ladder and two more engines.

Through doors and other building interconnections, the fire quickly traveled through the rear extensions at the exposure 2 end of the complex. There, too, a tower ladder had a large-caliber stream in place. *Photo by Jim Regan*

Eventually the Water Supply Bureau solved the supply problems by raising the pressure at the original hydrants. B.C. Kranz was then able to accommodate fully the needs of the six tower ladders, four portable large-caliber appliances, and six handlines now in operation.

With most of the roof over the fire building gone, tower ladders could darken down the main body of fire. Only small pockets continued to smolder and occasionally flare up. After consulting with the other chiefs again, D.A.C. Jones declared the fire under control—one hour and 56 minutes after the initial alarm.

Despite a sunny afternoon when a fire might normally be noticed early, this blaze had plenty of room to grow and got an enormous head start on us. A shut-off sprinkler system, a heavy fire load, and the threat of collapse created circumstances in which we had no choice but to surround and drown.

LESSONS

1. The size-up skills of first-arriving battalion chiefs are all-important. At this fire, the injuries were relatively few, in large part because the battalion chiefs recognized the type of roof construction, the area of involvement, and the size of response needed.

2. Control, coordination, and communications are always important. They become proportionally more so as the fire area increases.

3. When signs of impending collapse begin to appear, members must be ordered out of the building and a sufficiently large collapse zone established. (See pages 36 and 37 of D.C. Vincent Dunn's book, *Collapse of Burning Buildings*, published by Fire Engineering Books [New York: 1988].) That zone should be clearly marked so that later-arriving units will recognize and respect it.

4. A battalion chief can be special-called to work with the Maxi-Water and satellite companies in solving water supply problems.

5. Unknown chemicals and chemicals known to be hazardous have to be kept from spreading. The call to the Sanitation Department and Haz Mat 1 for diking material should be made as soon as such hazards are found, even if they haven't yet begun to leak.

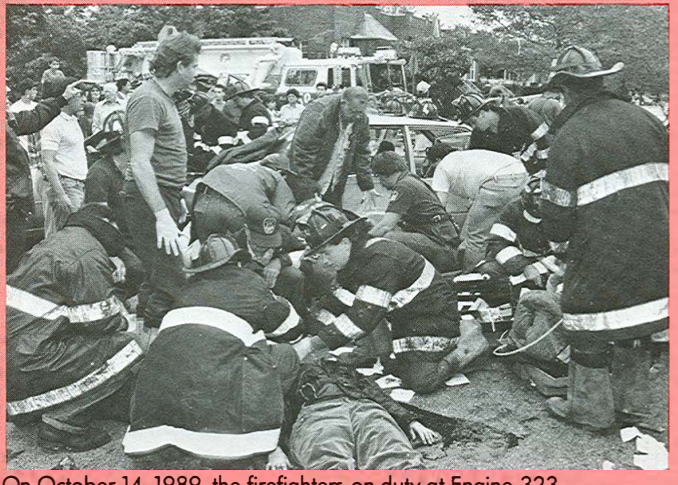
6. When onlookers become unruly, the Police Department should be called to control civilians.

Correction to the 4th Issue of 1989: The heads of the illustration entitled "The Rule of Nines for Field Use," page 22, are incorrectly labeled. The entire head area, front and back combined, accounts for 9 percent of the total body area on an adult and 18 percent on a child. The numbers *9* and *18* should appear only once in relation to the heads of the adult and child, respectively.

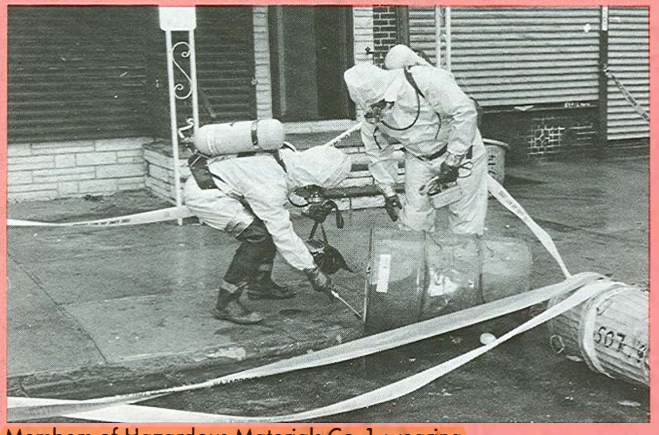
One of three demolition workers rescued by the FDNY is removed via aerial ladder from a collapsed building at 1980 Seventh Ave., Manhattan. Outstanding action by the units responding to box 1431 last July 31 resulted in the removal of the three men without serious injury. *Photo by Steve Spak*

Lt. Michael Telesca, covering in Battalion 19, was the New York *Daily News* Hero of the Month for November. His wife, Marguerite, and children—Michael, Jr., and Jenna—look on at the award ceremony held November 21. Mike's parents and mother-in-law also joined Lt. Telesca at the presentation. *Photo by Richard Smiouskas*

In a City Hall ceremony February 5, Mayor David Dinkins swore in Carlos M. Rivera as fire commissioner. Joan Rivera, wife of the FDNY's new leader, held the Bible as her husband took the oath of office. *Photo by Michael Norcia, New York Post*



On October 14, 1989, the firefighters on duty at Engine 323 and Ladder 159 had their hands full at Brooklyn box 3140. A two-vehicle collision resulted in three injured civilians. As can be seen, there was plenty for everyone to do. *Photo by Benny Stumbo*



Members of Hazardous Materials Co. 1, wearing protective suits, use instruments of their trade to identify the contents of a 55-gallon drum found outside 6505 14th Ave., Brooklyn. Fortunately, the sample Haz Mat 1 took tested nontoxic, and the Department of Sanitation responded to remove the drum. The incident occurred August 7, 1989, at box 2796. *Photo by Benny Stumbo*