

Michigan's Costliest Fire Destroys Auto Parts Plant

Inadequate Plant Fire Protection Largely Responsible for Huge Loss

A STAFF REPORT

A \$35 million fire, which virtually destroyed the General Motors Corporation transmission and instrument plant at Livonia, Mich., on August 13th, has been recorded as one of the nation's largest individual insured fire losses. The fire not only wrecked the \$40 million plant—only four years old, but it resulted in the death of five men (three during the fire and two later) and injuries to a score of others. It threw an estimated 45,000 workers, in the various automobile plants using the transmissions made at Livonia, out of jobs, at least temporarily.

Only an office building and a small power plant were reported salvageable of the 1.5 million square feet of floor space at Livonia. It is also reported

that few of the 6,000 machines in the plant may be reclaimed, owing to its almost total destruction.

Latest reports indicate the cause of the destructive blaze was a spark from a welder's torch which ignited oil. The fire started just before the change in shifts and safety personnel managed to clear the 3,200 employees out of the structure. Members of the oncoming shift who arrived to find their plant in flames, were recruited as emergency help, to aid fire fighters, assist in policing the grounds and salvaging what could be removed from the structure.

Those are the highlights of an epochal disaster which, according to Michigan Fire Marshal Arnold Renner was the costliest blaze of its kind ever to strike

the state, and for which there was no valid excuse.

The fire started at 3:45 P.M., and within three minutes had traveled the 1,200 foot length of the sprawling plant, despite the installation of what was said to be the "most modern fire-prevention and fire quenching equipment."

The plant manufactured GM Hydramatic transmissions for the corporation's own Cadillac, Oldsmobile, and Pontiac cars and GM and Chevrolet trucks as well as Lincoln, Nash and Kaiser cars. It also supplied some Army vehicles. In addition to transmissions, 500 or more employees of the Ternstedt division of the corporation were making the T-41 range finder for the medium Army tank weapons. The work was done in a guarded corner of the big plant and security measures were taken to keep unauthorized persons out of the area during and after the fire.

To the workers, and the official GM family, the building and production processes measured up fully to all established fire and safety codes. It was admitted, however that the original building was enlarged several times, and there were no effective fire stops to divide up the large floor areas. Also, the the sprinkler system did not cover the entire plant. Furthermore, production involved the use of flammable oils, greases and chemicals, all of which provided fuel for a fire of sufficient heat to melt floor and roof supports, and to collapse walls.

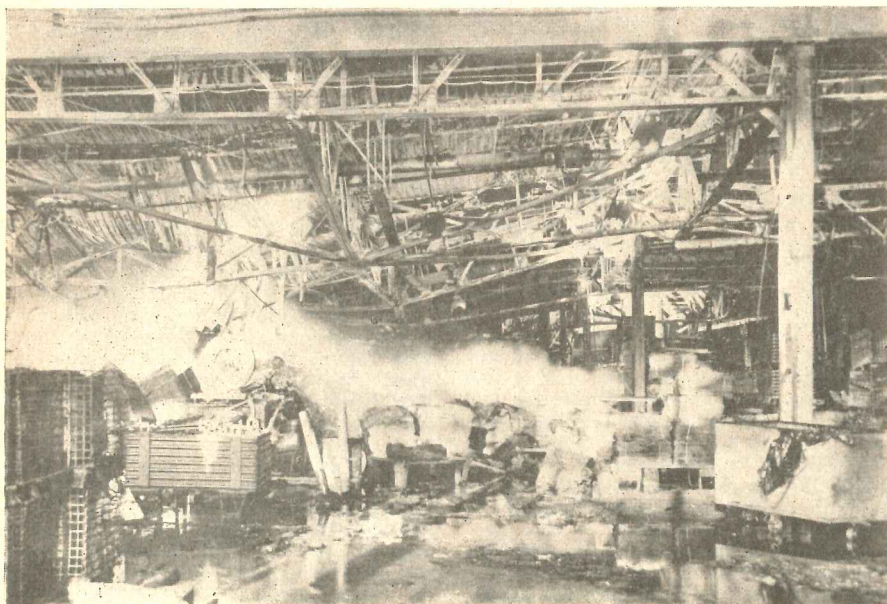
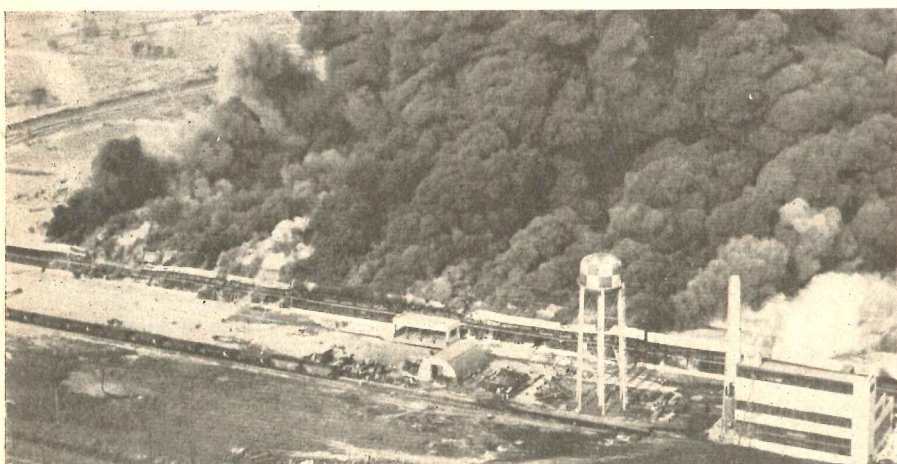
Welder's Spark Probable Cause

The cause is laid to a spark from a welder's torch, which landed in a metal trough beneath a conveyor line carrying transmission parts dipped in oil and then sent through a cleansing fluid called oleum. The trough was 13 feet from the plant floor and 7 feet from the ceiling.

Apparently a spark from the torch, which was being used above the conveyor line, ignited the cleansing fluid in a drip pan. The fire spread rapidly down the trough to a storage tank, which exploded. Before the explosion, employees tried to fight the fire with hand extinguishers and reportedly they had almost controlled the blaze, not-

Top: Sprawling four-block plant at height of fire.

Bottom: One section of fire gutted General Motors Transmission Plant. Fire fed by flammable oils and chemicals melted or warped metal girders and other non-combustibles to ruin plant and cause loss that may exceed \$35 million. Welder's spark caused blaze. Five were dead and scores injured, as result of 14-hour holocaust.



withstanding the difficulty of hitting the fire so high from the floor, when someone stretched in a hose line and turned water on the trough, almost instantly spreading the fire over the area. The tank explosion touched off additional blasts in other tanks and the fire communicated rapidly to oil-loaded machines which flared up, further spreading the blaze, and driving the plant workers outside.

There appears to be some difference of opinion as to the adequacy of the sprinkler system. The state fire marshal's office reports that only 10% to 15% of the plant was sprinkler-protected; others say the area was greater. It is said, sprinklers in the affected area went into operation but were unable to control the fast-spreading blaze. In many places the wood block floor blazed where oil had been spilled.

The fire traveled rapidly from division 501 to 502, and thence to involve the entire plant, driving out employees who paused to try to fight it, killing the acting plant security officer, Lieut. Wm. G. Degner and another worker, Daniel S. Staley. A volunteer fireman, Richard Smith, of Livonia, died during the struggle, of heart failure while packing hose. Two workmen were killed a day or two later when their wrecking crane struck a high tension line. A long list of personnel suffered injuries, including plant employees and firemen, none of them serious. Some of the casualties were telephone operators who stuck to their switchboards to the last minute.

Fire Fighters Overwhelmed

Once the blaze got under way, witnesses said, an army of firemen could not have stopped it. However there remain sharp differences of opinion concerning the response of some of the aiding fire forces, and their ability to get water on the blaze.

According to a report released by the City of Livonia, in whose protective district the plant was located, Fire Chief Calvin L. Roberts had arrived back from a vacation just 11 minutes before the telephone alarm was received at 3:56 P.M. The call was answered by Fireman Wilfred Clark, and Chief Roberts listened in. They heard Lieut. Joseph A. Supak of G.M. plant protection say: "This is the Detroit transmission plant calling. There is a bad one going here. We need your help right away."

Chief Roberts turned and looked out the window, to see smoke billowing high in the air. He immediately ordered all Livonia stations to the scene and called the fire departments of Plymouth, Plymouth Township, Wayne and Redford Township. He then went directly to the fire in his own car, entering the west gate, as directed by Lieutenant Supak. There he met James Hagen, city director of public safety.

Chief Roberts suggested that Hagen contact Mayor Ziegler of Livonia by telephone and request him to get help from the Detroit Fire Department. This was done.

The chief further instructed Sergeant Farrand Perry to contact Dearborn and all other departments under mutual aid agreements with Livonia. All off-duty men of the Livonia force were called in and all reported for work. Chief Robert McAllister of Plymouth located

a piece of apparatus at the Livonia Meridian road station and Redford Township's north station gave protection to Livonia's north area.

According to Chief Roberts, "After the first half hour, the plant was completely involved in flames." His first observation was that his department could not put out the blaze. His report states their only chance was "to get behind it and cut it off." The chief ordered lines to the roof of the administration building to prevent extension of the fire to that structure which housed the offices and records. Further, in the effort to get behind the fire and cut it off, the chief moved equipment, two bays, or about 100 feet, behind the flames. But by the time the fire fighters had got their lines moved, the fire had beat them to it. "We just couldn't lick it," reported Chief Roberts, "the fire traveled faster than we could move our lines. So we spotted our trucks where they would do the most good and concentrated on saving the administration building."

It is reported that some 30 pieces of fire apparatus fought the blaze, including units from Detroit, Northville, Dearborn, and Lincoln Park, in addition to those communities previously mentioned. In this connection, reports of operating forces are in conflict. According to Detroit Fire Commissioner David Pollack, there was inadequate water for the engine companies dispatched by that city. In rebuttal Livonia's Mayor Zeigler, and Albert Kunze, director of Wayne Water Supply System, which furnished water to Livonia and surrounding areas said there was plenty of water pressure. "If the Detroit River had been running right alongside the plant they still would never have been able to put that fire out," the director added. He said he made checks of the water pressure at the county system's

pumping station on West Chicago at Middlebelt at 5:30 P.M. and 8:00 P.M. and pressures of 90 pounds were recorded. This compares with Detroit's 40 pounds, he said.

Of Detroit fire equipment, including three engine, one ladder, one rescue companies and one battalion chief, which responded, the pumpers stood idle because connections with adequate pressures could not be found, according to press reports. At 5:30 Comr. Pollack protested that water sources and pressures were lacking. But, according to accounts, the city's firemen were attempting to draw water through the storage tank for the plant's automatic sprinkler system. This reportedly had been emptied by sprinkler discharge. The Detroit contingent then learned it could hook into a hydrant 2,000 feet to the east and subsequently stretched in from there.

There is no contractual agreement between the City of Detroit and Livonia covering aid by the city to the latter. Detroit officials claim that Livonia could have had help from the city 30 minutes sooner if the community had entered into a contract for standby protection such as the City has with some other suburban areas. Livonia, in 1950, declined to make an agreement to pay a fee of 3 cents for each \$1,000 of assessed valuation on buildings and personal property for the additional protection, which it is said would have cost approximately \$1,300 yearly. About 90 per cent of the other suburban Detroit communities likewise declined to contract for the service because of cost.

The first call received by the Detroit Fire Department was clocked at 4:10 P.M. Permission to respond was of necessity asked of the Mayor of Detroit and this consumed 22 minutes. Meanwhile the nearest Detroit company was

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Smoke pall signals end of GM transmission plant. Over 300 regular and volunteer fire fighters, with 30 pieces of equipment, were impotent in combating oil and wind sped flames that roared through sprawling four-block plant. Misdirected first aid fire fighting helped give fire start.

recommendations, I might add that it appears that the cost of wetting agents is very high; yet the demonstrations that I have observed leads me to believe that it would be very practical in cities which have textile mills and other combustible materials which can only be extinguished by soaking and wetting down.

General Motors Fire

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only 10 or 15 minutes from the fire. It was 4:32 P.M. when Detroit firemen got clearance and were on their way.

In an effort to secure more water, the Wayne Fire Department went to the rear of the plant and took suction from a drainage ditch.

Crowds Hamper Firemen

The mounting cloud of smoke, movement of apparatus, and the broadcasting of reports of the fire, coming at a time when many workers were going to or from work, created vast traffic congestion which required all available regular, reserve and auxiliary police to control it. Guards were quickly thrown around the plant and spectators kept at a distance, but the jammed thoroughfares interfered with movements of emergency vehicles, notwithstanding the road blocks thrown up by police.

Emergency medical and civil defense forces, as well as Red Cross units, were quickly on the job. First aid stations were set up around the vast plant and the injured were treated on the grounds. Ambulances removed the more serious cases to hospitals.

Plant protection men and other employees carried out records, electrical recording and other equipment, which was moved to safety on fork-lifts. Over 300 firemen and volunteers and civil defense workers manned the many hose lines. As darkness fell, 24 civil defense flood-light units were secured from Detroit to light up the scene. After the plant walls and roof collapsed, plant security officers permitted no one but firemen to enter parts of the structure.

The fire blazed up intermittently the following day, as FBI, insurance, police, fire and other investigators probed into the cause and searched for possible further casualties.

Hazardous Materials

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create too great a problem. A small local dealer starting out on a small capital and hiring anyone that can drive a truck constitutes a problem that can be coped with only by rigid inspections and education in the dangers involved in handling flammable liquids.

Arthur J. Massett

Deputy Chief, In Charge
Division of Combustibles
New York Fire Department

1. Fire Department specifications in this city regulate the construction, capacity, and fire protection for the following trucks:

(a) Airport Tenders, used for the transportation of gasoline at airports within New York City.

(b) Tank and Platform trucks, used



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