# Fire Strikes Las Vegas High-Rise

## By Kenneth Morgan

January 25, 2008, began as a typical day for the Clark County (NV) Fire Department. Morning duties and apparatus and equipment inspections were completed, and the crews prepared for another day. A rookie school was nearing completion, and live fire drills were underway for them at the training center, about one mile from the Monte Carlo Hotel.

Owned and operated by the MGM-Mirage Group, the Monte Carlo Hotel is a 32-story resort casino, built in the late 1990s. This mega-resort boasts 3,002 rooms and all the amenities expected in a high-end Las Vegas hotel. The hotel is on the south end of the famous Las Vegas Strip, which is actually in the unincorporated area of Clark County and is protected by Battalion 2 (B2).

## FIRE ON THE STRIP

At 1057 hours, the alarm office at Las Vegas Fire & Rescue Headquarters, the regional dispatch center for area fire departments, received a call for a fire at the Monte Carlo, reporting the top two floors were on fire. At 1058 hours, a high-rise response was sent: four engines, two trucks, two rescues, 271 (EMS supervisor), and Battalion 6 (covering for B2). This included units from Las Vegas Fire & Rescue on automatic aid. Within seconds, dispatch received multiple calls indicating that this was a major fire.

Chief Roy Session, who was filling in at B2, was at the training center supervising the live fire training. The rookie training was progressing well, and the lunch break was nearing. As the alarm rang out, training center staff noticed that there was smoke coming from the strip area and fire coming from the Monte Carlo Hotel (photo 1); they quickly terminated the training, and B2 responded.


*(1) The view from the drill tower. (Photo by Kenny Holding.)*

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Engine 11 (E11) arrived at 1100 hours and confirmed that there was definitely a fire and that it appeared to be on the exterior of the structure (photo 2). E11 requested a second alarm, duplicating the first alarm. B2, on hearing the report and seeing the smoke rising from the strip, ordered a third alarm at 1101 hours. [Photo 3 shows the view from the A side (Las Vegas Boulevard) of the structure.]

*(2) The fire from ground level. (Photo by Dave Connell.)*

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*(3) The view from Las Vegas Boulevard. (Photo by Ryan Glassford.)*

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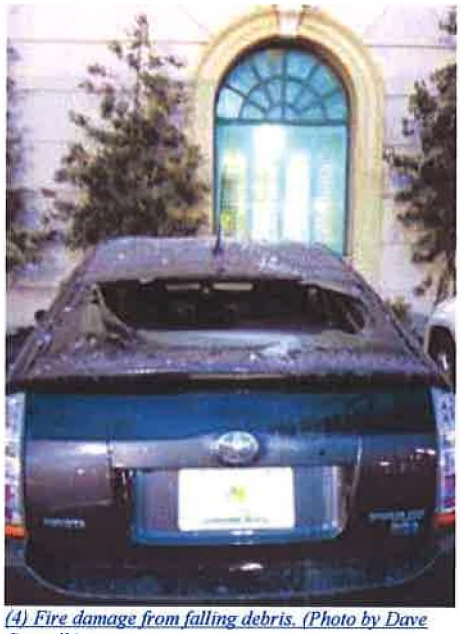
B2 arrived (having been closer than B6) and assumed command from E11. High-rise procedures were initiated, and E11 and Truck 11 were assigned fire attack. They headed to the roof to access the fire. As units arrived, Divisions 32 and 31 were established.

# ACCESS BECAME A PROBLEM

The fire was burning in a decorative polystyrene foam material with a stucco-like finish, attached to the exterior of the building (it ranged from three to 12 inches in thickness, depending on the location). This foam was part of the exterior architectural façade, which was then covered with material to match the exterior design. At the top of the structure was a false wall approximately 25 feet tall. This made access to the exterior from the roof difficult; limited access points were available to get streams onto the fire. As the fire burned this material, large amounts of smoke and heat were generated, which eventually breached the windows on the 32nd floor, allowing the fire access to the interior of the building.

Compounding the situation, large chunks of flaming material were falling from the structure. This debris hit the side of the building and fell on adjacent roofs and vehicles (photo 4). Debris falling from the fire above landed on the façade on the 29th floor, igniting similar material, which caused windows to fail. This allowed the fire to enter the structure at that level. As the department command staff continued to arrive, additional positions in the command were activated.



*(4) Fire damage from falling debris. (Photo by Dave Connell.)*

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At 1115 hours, Senior Deputy Chief Stephen Ratigan arrived and, after a brief update, assumed command, moving B2 to operations. He broke the incident into branches for accountability and management. Tactical channels supplemented communications, keeping command, operations, staging, and medical on separate channels.

As the fire progressed, logistical issues typical of high-rise fires arose. Hose, tools, and air bottles were at a premium and needed to be shuttled up several floors to staging on the 28th floor. Operations were concentrated on the roof, the 32nd floor, and the 29th floor (photo 5).

*(5) A large-caliber stream from the 29th floor. (Photo by Kenny Holding.)*

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This structure was on the approach path for a heliport, which created another issue for roof operations (photo 6). This downwash created a safety issue as the helicopters buffeted the firefighters and increased the amount of falling debris. Through the Las Vegas Metropolitan Police (MPD) and the McCarran International Airport air control, these distractions were eventually prohibited within one mile of the resort. Other issues were created by the flaming debris, which started several spot fires on adjacent roofs.

*(6) Roof operations. (Photo by Kenny Holding.)*

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The vast nature of high-rise fires creates accountability concerns. This doubled with the need to put firefighting personnel in unusual positions to attack this fire. Accountability became a priority, and numerous personnel accountability reports were initiated during the incident.

## SCENES UNLIKE MGM AND HILTON FIRES

As a result of the MGM fire in 1980 and the Hilton fire in 1981, Nevada has some of the toughest high-rise fire safety regulations in the country. These life safety systems paid off at the Monte Carlo fire. Despite fire gaining access to the structure at two levels, sprinkler systems activated and kept the fire in check until suppressions crews could gain access (photo 7) and suppress the fire (several heads operated on the 27th and 32nd floors). Sprinklers assisted interior crews, and the focus changed to extinguishing the exterior area. Crews on several floors forced windows and attacked from these vantage points. The problem was locating a window that would not allow extension into the structure but would provide a good point from which to extinguish this fire. Then, there was the concern for placing a firefighter halfway out a window 29 floors aboveground. Several firefighters were secured with safety lines while operating from the roof over the side of the building.

*(7) Fire breached the structure. (Photo by Joseph Dodd.)*

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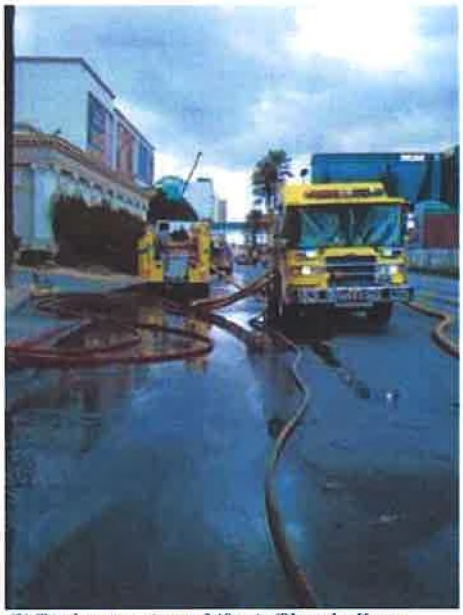
To make pressures sufficient at the roof, two engines worked in tandem operation to pump the standpipe, which in turn supplied several 2 1/2-inch and 1 3/4-inch hoselines off the roof maifold and in the stairwells (photo 8). This operation provided more than enough water to gain control of this incident. The smoke evacuation systems (a post-MGM Grand fire code requirement), designed to exhaust the "fire floor" and pressurize the floors above and below, worked flawlessly to remove combustion products from the

areas in which crews were working. Through the efforts of more than 120 personnel staffing 63 units, this fire was controlled at 1223 hours—1 hour and 25 minutes after the initial alarm. By 1317 hours, Command began releasing units, although operations would continue for several hours as crews completed searches and overhaul.



*(8) Tandem pumping at 340 psi. (Photo by Kenny Holding.)*

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# UNIFIED COMMAND

At the height of this fire, three fire departments, two private ambulances companies, the MPD, the Nevada Highway Patrol, and numerous other agencies worked together to mitigate this incident, evacuate the guests, search the building, and investigate cause and origin (photo 9). This included local medical centers, which opened doors for triage and treatment if needed, and the United States Air Force at Nellis Air Force Base, which put Blackhawk helicopters on standby for evacuation.

*(9) Unified command. (Photo by Gary Stevenson.)*

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Many hotel guests were relocated to the MGM hotel near the Monte Carlo. Evacuating a hotel of this size is no easy task. Through the actions of Monte Carlo Security and hotel personnel, all guests were evacuated. There were 17 injuries, mostly minor cases of smoke inhalation; 12 patients were transported to area hospitals.

Command was terminated at 2120 hours, although the investigation continued for the next several days.

# CAUSE IDENTIFIED

The Monte Carlo was undergoing an improvement project to install walkways along the roof areas. The project, which was contracted to a private firm, involved cutting corrugated steel products with a cutting torch. Hot molten metal from the operations most likely ignited the foam product, starting the fire. The foam's flammability created a fast-spreading fire that was difficult to control.

Damages are estimated in excess of $100 million, including lost revenue. As of this writing, the hotel remains closed. Plans to reopen it are pending.

# LESSONS LEARNED

- There are no routine fires! This fire proved challenging for several reasons.
  - High-rise procedures don't account for fires on the structure's exterior.
  - Large high-rise buildings require unusual standpipe pressures. Plan for this to prevent system damage and to adequately supply crews.

    - Constant vigilance must be accorded to the fixed suppression system. During pumping operations, the fire pump began to overheat. This was caused by a partially closed recirculating valve, which was identified and easily fixed.
    - You must supplement sprinkler systems! Make this a habit in any sprinklered occupancy. This system kept the fire from spreading in this structure.
- Although the structure may be protected, exterior fascia can still burn. Preplan inspections may identify this potential. Adjust training for high-rise responses to include this potential.
- Communications are essential in this type of operation. Planning ahead for tactical channel deployment will save effort and confusion.
- High-rise fires are personnel-intensive! Call for additional personnel early, and plan on rotating them often. Support is essential—tools, air bottles, and rehab provisions, for example.
- Fires of this size require a command presence. Be sure to isolate command posts from outside influences. Missed radio traffic can be tragic. For any fire of this size, use more than one command vehicle, if available.
- Provide liaisons to command and operations to filter incoming information for relevance.
- Use the incident command system to your advantage! Branches may make operations easier.
- We are in the process of phasing out 13⁄4-inch hoselines for fire attack in high-rises; 21⁄2-inch hose will be instituted for all high-rise packs.

**Kenneth Morgan** is a 26-year veteran of the fire service, having spent the past 20 years with the Clark County (NV) Fire Department. He is a battalion chief assigned to Battalion 2, which protects the Las Vegas Strip. He has a master's degree in public administration, is a CFO, is a fire officer VI, and has completed three years of the four-year EFO program.

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