CHICAGO AIR CRASH 1979 - PRE-PLANNING PAYS OFF
(Crash of Flight 191) – Abridged Version

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(NOTE: This article provides an in depth look at the actual emergency response to the single largest airline disaster in US history. Since the article was prepared for a Fire Service trade magazine, I took advantage of a unique combination of participating in the response and being part of an earlier large scale training exercise planning for such an event. Since emergency responders are always eager to learn from mistakes, and apply those lessons to future contingencies, the article is, in my view, presented as objectively as possible. It also became the basis for an extensive pre-planning training slide show for numerous agencies nationwide. Much of the training exercise details have been left out, but are included in the unabridged version.)

Flight 191 from Chicago's O'Hare International Airport began as part of the Memorial Day exodus. 30 to 45 seconds after leaving the ground, the DC-10 with 272 passengers aboard, plunged into a police canine training field just a few yards from a mobile home complex. Flight 191 became America's worst single disaster in civil aviation history.

Within seconds, emergency lines at surrounding communities were jammed. Initial reports included claims that a cargo plane had crashed into a trailer park and that a passenger plane had exploded on the highway. Ambulances from several departments, including Chicago, began streaming toward the accident. Upon arrival, fire units were met by the fact of no possible survivors. A tremendous fire, fed by 72,600 gallons of aviation fuel (a full load) consumed two old hangars, a number of junked automobiles, and two mobile homes. Charred corpses were scattered in all directions. Some were piled against a chain-link fence.

Chicago Fire Department crash vehicles that responded from the airport were on the scene and began extinguishment. Fire apparatus from 36 communities arrived, and ambulances started to line up as emergency plans were put into effect at local hospitals. Comprehensive disaster plans were activated as reports were confirmed. The need was for a temporary morgue.

Several Chicago suburbs surrounding O'Hare Field live with the daily threat of an aircraft disaster as jets roar overhead. The continuing battle between municipalities and aviation authorities over noise pollution was interrupted occasionally by emergency drills and exercises covering aircraft disasters. Five years earlier, in 1973, representatives from the Des Plaines, Illinois, Civil Defense Agency and Illinois Emergency Medical Services formed a subcommittee to develop disaster plans coordinating emergency agencies and functions. Recent aircraft disasters indicated that a comprehensive plan was needed to coordinate the response of equipment, manpower, and medical facilities.

The planning committee met with representatives of the Airline Pilots Association to set October 4, 1973, as a date for the drill, "Operation Libra," involving 14 local fire

departments and 5 local hospitals. Suburban fire departments tested their Mutual Aid Box Alarm System (MABAS). Police were to coordinate traffic and crowd control and security on the crash site. The Airline Pilots Association designated what type of injuries could be expected, and sent 17 members to represent crew and passengers along with 217 students from the local high school. All were made up with realistic looking wounds and transported to the drill site in three buses. The buses staggered at the site to simulate a broken aircraft fuselage. Personnel were scattered in the area of the crash and situated within the fuselage. For the drill, students were tagged with various hospital locations so officials could keep track. The end result of this comprehensive drill revealed many deficiencies and unanticipated concerns.

On May 25, 1979, at 3:04 on a Friday afternoon, the anticipated accident finally happened.

Among those who first noticed the thick black column of smoke belching above the fireball was Des Plaines Engine 62, several blocks west of the incident, Elk Grove Township Ambulance 321, less than a half mile to the east, radioed back to headquarters that they were going to investigate. At the same time, Elk Grove Village Engine 118 pushed out of its house after sighting the explosion.

Emergency lines to fire and police departments were flooded with calls. Reports varied with each caller, "A building or something just exploded," said one caller. An operator-assisted call rambled about a fire "just behind the house." All radio frequencies became overloaded with hurried instructions. Firefighters' voices were drowned out by sirens and air horns. Civilian excitement was tempered by professional calm as the grim report crept into conflict-filled airways: "A report of a DC-10 crash on Touhy Avenue." With this confirmation began the multi-department response to the site of America's worst airline crash.

Des Plaines Engine 62 spiraled its way around a Chicago police canine training facility just off Touhy Avenue, a few hundred yards from the end of Runway 32R. Directly behind them came five Oshkosh and Walters Airport crash trucks with men from Chicago FD’s Crash Station 2 who ran for their rigs when they saw the DC-10's left engine hit the runway.

From the east, responding equipment headed for the western edge of a trailer park that had been affected, and began fighting fires that gutted one mobile home. When a burning section of fuselage smashed into the rear of the trailer, the elderly residents were quickly carried out by neighbors. Aviation fuel spread over a mile wide area, leaving burning pools six to eight inches deep, which were extinguished and sealed by foam from Chicago fire crash trucks and on Elk Grove Township truck. Later, firefighters found the leather strap holding the turret gun atop the Elk Grove Township truck burned to a crisp.

Chemicals spewed from the crash vehicles. Firefighters advanced with hoselines from booster tanks and tankers until relays could be established for a supply line. Sixty to 70 percent of the fuel fire was knocked down by the crash trucks with Aqueous Film

Foaming Foam. Some spot fires and stubborn pockets were identified as bodies still burning. Molten metals from the aircraft, two old hangars, and junked automobiles intermingled in the midst of the thick black smoke.

Elk Grove Fire Chief John Henrici called for a mutual aid box alarm. MABAS Central in Arlington Heights took control over all mutual aid radio traffic and response. Units arriving from all directions were deployed to provide relays from two distant hydrants, one located off a well at the rear of the trailer park and the other nearly a half mile down the highway. Ambulances were staged, half facing east and half facing west, with police keeping traffic lanes open for their expected race to local hospitals.

Although hospitals were notified to activate their disaster plans, the reality was apparent to those on the scene: there would be no survivors. Elk Grove ambulances treated, then transported, two victims from an old converted hangar drenched in burning aviation fuel. Two others died within the structures involved.

Thirty-five surrounding suburbs responded. The mutual aid system provided for change of quarters, and Chicago sent a full "211" response: 12 engines, 4 aerial ladders, a snorkel, a flying squad, 2 helicopters, and 6 ambulances, in addition to 5 crash vehicles from the airport. The fire department command center was moved around the scene, as the situation required. If there was any confusion at the scene, it was labeled "organized confusion" by Des Plaines Deputy Fire Chief Buckley, who served as part of a hastily arranged command coalition. One chief was in charge of water supply, one of staging ambulances, and another of supervising extinguishment. Police command centers were established at several points around the area to keep away onlookers and looters.

Ambulances arrived from miles away only to be staged on the sidelines. Firefighters, EMTs, paramedics, and other medical personnel, searching for survivors, walked among the hundreds of charred and dismembered passengers, covering them with plastic sheets and pounding stakes into the ground nearby.

Within 20 minutes of the crash, the message was sent that no additional ambulances were needed. A request was made for more body bags and stakes. Three hours after the crash, remains were being transported to a temporary morgue set up in an American Airlines hangar at O'Hare. The crash site was unceremoniously placed in the hands of the medical examiner and the Federal Aviation Administration (FAA), while, by the end of the day, thousands of feet of hose were rolled.

Everyone who participated in the disaster shared one common thought: it can happen again. The consensus was that the operation actually went smoother than expected. Even with the short-lived problem of jurisdiction, 36 responding departments worked together quickly and effectively. Extinguishment was rapid, response was immediate, and the expected authority battles were minimal. In most cases, any conflicts were after the fact. Criticism was generally constructive, with many of the recommendations similar to those that followed Operation Libra. While Libra concentrated heavily on the emergency medical aspect of a disaster, the actual crash involving a full load of fuel and a near

vertical impact precluded employing most of Libra's medical recommendations. Post-crash suggestions focused on communications, command structure, equipment, manpower deployment, and security.

Difficulty in communications was the first problem that confronted all who responded. The first responding units were originally operating on their own local frequencies. Since there were so many different departments in the suburban areas, the frequencies were divided among several of them. In the event of a mutual aid response, a pre-arranged system required all units responding to switch to a common emergency frequency, referred to as NIFERIN (Northern Illinois Fire Emergency Radio Network).

Eight minutes into the emergency, a box alarm was called for, and units began to switch over. Chief officers responding were forced to switch periodically to their own local or administrative frequencies to get messages through. At times, orders were repeated several times over several frequencies before they were received. It was found that not all fire apparatus was equipped with the NIFERN frequency. Some police units did not have the equivalent of NIFERN called ISPERN (Illinois State Police Emergency Radio Network), so the communication problem overlapped between all departments, causing some interference in establishing a plan of action.

Because of the weight of radio traffic causing interference, the first paramedics on the scene found it nearly impossible to use their telemetry equipment. Thirty-six different fire departments were represented at the scene in various strengths. In addition to several suburban and Chicago police vehicles, there were the Illinois State Police, Cook County Sheriff's office, civil defense, Red Cross, airport authorities, FAA, medical examiners, and other agencies. Some 507 fire and 398 police personnel responded, engulfing the site in radio traffic and flooding all available VHF and UHF bands.

Command structure was established as the situation demanded. The jurisdiction question was resolved after Elk Grove Village initiated a box alarm. At that point, command was divided by need (extinguishment, water supply, equipment, manpower deployment, and medical). The "coalition" of command worked well, possibly because the area of involvement was uncharacteristically tight and compact since the aircraft crashed at a slow speed, almost straight down, and from a relatively low height. Also, it was apparent early in the operation that there were no survivors. With the concern of rescue, treatment, and transportation of the injured tragically unnecessary, more attention could be directed to the containment and extinguishment of the fire.

Chicago crash trucks were equipped with foam, and suburban apparatus had only the water that booster tanks contained. The closest hydrants were 1,500, 4,000, 4,500 feet away, and caused delays in setting a supply line for handlines. Tankers were summoned as relays were being set up. Some firefighters on the scene suggested that several tankers should be included in the first response to an airline crash, providing more water from the start while hydrants were located and relays set. In this case, 19 engines were set in series from three different hydrants.

Over-response is often considered an unwritten rule within the fire service. The logic somtimes proves to be the difference between "save" and a loss on occasion. It is easier to send back unneeded equipment than to call for it later. Within the first minute of the crash, fire and police units descended on the site from all directions. Not until a command structure was established was there a possibility to limit the manpower or equipment responding. No definite plan, other than a special ambulance box, had been arranged for such an incident. The Mutual Aid Box Alarm System had been designed to deal primarily with large structure fires.

An airliner crash occurring well within an established protection district boundary offers more control capability for command personnel. They can be more selective in equipment response. Flight 191, however, went down in an area where first reports gave several locations, all near a point joining several different protection districts. The Chicago Fire Department implemented its Disaster Plan No. 3, which called for private ambulances to be dispatched on incidents involving 30 or more injured persons. Many suburban departments dispatched equipment at will, before and after the mutual aid box alarm was called.

The end result forced many firefighters, medical teams, and other rescue personnel to be staged on the sidelines, looking on while others performed assigned tasks. Police response was so heavy that some had difficulty getting through the sea of squad cars. The press and news media equipment were restricted outside a roped-off perimeter. At one point, local television station helicopters were ordered to move away, as the backwash from their propellers forced heat and smoke back down, inundating firefighters. Local hospitals sent medical teams in vain. Buses were sent from the airport to transport walking injured. Even doctors who were passing by stopped to offer assistance. All the well-intentioned people that descended on the site eventually formed a multitude of frustrated onlookers, resigned to the fact that their skills were not needed.

Even with the few problems that surfaced, all agreed that confusion was at a minimum, cooperation was enthusiastic, and the instinctive tradition of teamwork prevailed to produce a well-organized operation. As in any emergency operation, many came away with suggestions concerning the next disaster.

Des Plaines Fire Chief Charles Gedroic, recalled his first reactions: like any other chief, he was overwhelmed. "A disaster of this magnitude is too complex for any single fireground command. A coalition of command has to be established with two or three heads. One in the forward area to oversee rescue operations and extinguishment, and a rear command responsible for water supply and equipment staging." Gedroic also commented that the over-response was the result of jurisdictional confusion during the first few minutes. "The scene should be sealed off immediately by one authority, be that the FAA, police, airport authorities, or whomever. Entrance should be allowed only to that equipment called for. " Elk Grove Village Fire Chief John Henrici suggested that the mutual aid suburbs purchase and equip a command post van. "A command van would provide a controlled environment for command operations," he explained, "a central location for plotting and charting fireground operations, not only for the airline crash, but

for any large mutual aid call." Chief Henrici felt that an additional fireground frequency was needed. "As soon as equipment arrived on the scene, command personnel would pick up a fireground portable radio and free other frequencies."

Elk Grove Township Chief Gary Jensen, however, felt there was a lot of confusion over who should do what. "I think more effort could have been put into crowd control and traffic by the police. We were trying to hold back crowds and at the same time fight the fire." Chief Jensen did comment that, on the whole, "the response and help from all involved seemed to work well."

Firefighters on the scene confirmed many of the chiefs' recommendations. They did suffer some confusion with several officers giving contradictory orders. There was additional conflict at the FAA over procedures.

On June 8, 1979, a critique was held that included several fire chiefs from the area, representatives from the Cook County police, the FAA, the medical examiner's office, the airport, and a doctor from the area mobile intensive care network. Chief Henrici, spokesman for the group, said that, as far as the fire service was concerned, things went according to MABAS plan (excepting some communications problems).

The American Red Cross held a critique of their own on June 14, 1979. Northwest Regional Disaster Chairman Donald Hageman added that "with all the equipment and personnel supplied by our organization, our resources were still never tapped to their capacity." The Red Cross was credited with supplying such diverse equipment as refrigeration trucks for body remains, X-ray film for dental identification, portable lighting systems, and even the pens and pencils used by secretarial personnel at the temporary morgue.

Investigations are still under way concerning the cause of the crash. Critiques have been held and the site of the crash has been plowed and seeded. The air traffic continues over the heads of millions who live around O'Hare. The response to the disaster is still being analyzed. There will be changes made within the MABAS structure, but the anticipation of another disaster will ensure future exercises and drills. Already, plans are being made for another simulated disaster.

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