

Attack on the Pentagon

The initial fire & EMS response

By Michael J. Ward



THE MORNING OF SEPT. 11, FORT MYER (VA.) FIRE DEPT. firefighters Allan Wallace, Mark Skipper and Dennis Young were staffing Foam 161 at the Pentagon heliport in preparation for a scheduled afternoon visit from the president. Wallace had just moved the 2000 Emergency-One Titan 4x4 foam unit (Foam 161) out of the garage and positioned it to face the heliport. He and Skipper were completing their morning inspection of the rig. Young was in the station, watching coverage of the World Trade Center attack on television. The remaining Fort Myer firefighters—both on- and off-duty personnel—were attending an aircraft crash refresher class at headquarters.

At 0938 HRS, Wallace saw a plane turn straight toward the Pentagon. He had just enough time to yell for Skipper to run away from the foam unit. Wallace dove under it just as American Airlines

ATTACK ON THE PENTAGON

Flight 77 slammed into the Pentagon. The 757 was en route from Dulles International Airport to Los Angeles with 58 passengers and six crew members aboard.

“When the aircraft hit, a fireball flew into the station [about 150 yards from the impact site], into the living quarters and collapsed everything in the ceiling,” says Fort Myer Fire Chief Charles Campbell. “The air-conditioning duct, the heating, the lights, the ceiling tiles all came down around Dennis [Young].”

The fireball also incinerated the firefighters’ personal vehicles parked at the heliport. As soon as it passed, Wallace crawled out from under Foam 161. He checked on Skipper and Young and climbed into the rig. It was burning and extensively damaged, but Wallace was able to use the truck’s radio to call Fort Myer dispatch and report the crash.

Dispatch alerted the firefighters attending the refresher class, and they immediately responded in Rescue Engines 161 and 162 and arrived on scene at 0940 HRS. Other staff at headquarters rolled out in a reserve pumper.

When the fireball went over them, both Skipper and Wallace suffered lacerations and second-degree burns. Wallace also suffered a rotator cuff tear in his shoulder. Despite their injuries—and wearing just their station uniforms because their firefighting gear was covered with burning jet fuel and debris—all three firefighters ran 150 yards to the impact site. They immediately started removing people from the first-floor windows of the Pentagon.

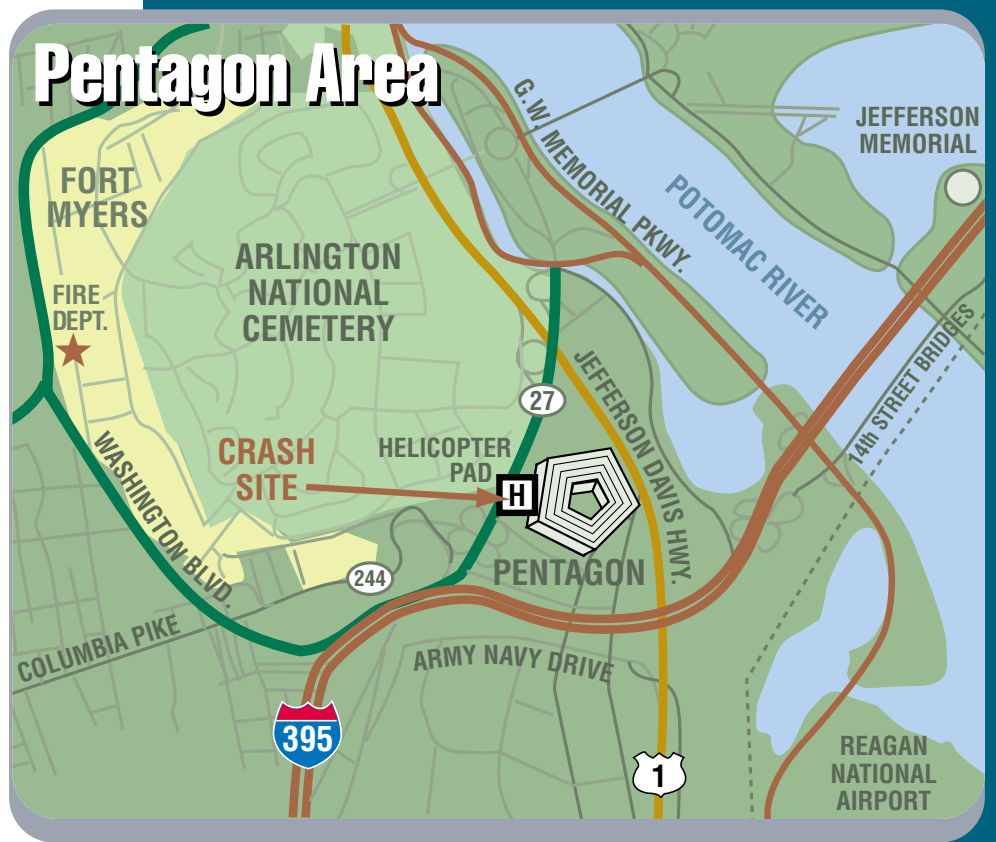
Campbell says his foam unit crew assisted 10 people out of the burning first floor before the first wave of military and on- and off-duty emergency workers arrived to assist in the evacuation. During the first hour of the incident, Fort Myer personnel also moved victims to a south parking lot triage area and helped the National Airport firefighting crews with water supply and firefighting.

After about 45 minutes of rapidly extricating survivors, Wallace and Skipper were sent to a hospital for treatment.

The Fort Myer Fire Department was one of three jurisdictions in the initial Pentagon response. The others were the Arlington County (Va.) Fire Department (ACFD) and the Metropolitan Washington Airports Authority (MWAA). Traditional fire department activities at multiple alarm incidents include the concept that the fire department owns the building until the fire is controlled. In the case of the Pentagon, however, the fire departments partnered with the military and federal law enforcement in the first moments of the event. They shared all the work—assignments, information and duties.

Metropolitan Washington Airports Authority

Sept. 11, MWAA had 16 on-duty firefighters at Reagan National Airport, just 0.6 miles from the Pentagon. Another dozen off-duty fire-



For a detailed crash site diagram, see p. 28.

fighters were attending a college-run Fire Officer II class. Captain Michael Defina was the acting shift commander.

Before the plane crashed into the Pentagon, many on-duty firefighters in the Arlington area, including MWAA personnel, were watching the television coverage of the initial crash at 1 World Trade Center. Defina even interrupted the Fire Officer II class so the participants could watch the live coverage. The Trade Center incident generated significant discussion regarding the potential size of the aircraft and the tactical problems facing FDNY.

Class was cancelled around 0915 HRS, after a second plane hit 2 World Trade. Minutes later, MWAA Rescue Engine 335 and Medic 325 responded to a multiple vehicle car crash at the upper level of Reagan National’s Terminal B. A diabetic driver in insulin shock had slammed into other cars dropping off travelers. Although the airport was not on general alert, Defina decided to respond to the vehicle crash.

The driver of the vehicle was unconscious with profoundly low blood sugar. The crews treating the patient had their backs to the Pentagon when the plane struck. “I heard a dull roar. The noise did not belong with the noise you were used to hearing within the airport,” says Defina. “I turned and saw a smoke plume rise.”

At 0939 HRS the National Airport control tower transmitted, “Crash! Crash! Crash!” over the MWAA frequency and activated an airport alert, but there was confusion about the exact location of the crash. At about the same time, the control tower also reported a missing inbound 757.

MWAA’s Foam 331 (an Oshkosh T3000 crash rig), SERV 329 (a mass-casualty vehicle equipped to treat 150 patients) and Attack 323 (a mini-pumper) responded from the fire station to assist Rescue Engine 335 and Battalion 301 at the Pentagon. Medic 325 transported the unconscious driver to George Washington University hospital in Washington, D.C. and then responded to the Pentagon. Paramedic Mike Fetsko says it was the quickest patient transfer he’s

ever experienced. “They were waiting for us outside the emergency department,” he recalls. “They immediately moved the patient onto a gurney and told us to go.”

MWAA Captain Harry Hopkins arrived at the scene on SERV 329 and was shocked to see two nude adults writhing in pain on the grass. They were outside the Pentagon when the plane crashed and had been engulfed in the fireball; it burned off their clothes and hair.

MWAA and Arlington County fire departments arrived about the same time at 0942 HRS. They confirmed that one plane had crashed into the west side of the Pentagon. MWAA worked with Fort Myer to extinguish the jet fuel fire at the point of impact as well as treat the injured. Arlington County assisted Fort Myer firefighters with extricating survivors who could be reached from the exterior of the complex and began interior rescue and firefighting operations.

With a confirmed location transmitted, Foam 345 (an Oshkosh T3000) responded to the crash site from Reagan National Airport. From Dulles Airport, MWAA also sent a second mass-casualty unit (SERV 362) and a foam trailer to the crash site.

Foam 331 arrived at 0944 HRS and Foam 345 arrived at 0948 HRS. The crash trucks took about 13 minutes to suppress the jet fuel fire enough to allow fire crews to enter the outer D and E rings of the five-floor building and start a floor-to-floor search. (See Pentagon Complex diagram, p. 28.)

MWAA Battalion Chief Tim Lasher describes the first two hours of the incident as “hand-to-hand fire combat.”

Arlington County Fire Department

At the time of the attack, ACFD fire units were responding to an activated fire alarm in Arlington. In Engine 101, Captain Steve McCoy and firefighter Andrea Kaiser witnessed the airliner crash into the Pentagon. They called it into Arlington fire dispatch and diverted from the first alarm to respond in the direction of the billowing mushroom cloud of fire and smoke.

Based on Engine 101’s initial report, Arlington County sent an augmented first-alarm assignment of four engines, two aerials, both rescue companies and four ALS ambulances to the Pentagon. Battalion Chief Robert Cornewell (Battalion 111) and EMS Supervisor 111, Ed Blunt, also responded.

Blunt arrived with the Arlington first alarm about 0940 HRS. He encountered dozens of burned and injured occupants. “One gentleman had the majority of both hands cut off. He was also burned considerably,” he says. “Most of the injuries we saw were really severe burns—full-thickness with skin sloughing. Some people had their clothes still burning.”

When ACFD Truck 105 arrived on scene at 0940 HRS, the crew immediately called in second and third alarms.

Inside the Pentagon, ACFD crews found the building in darkness, and the walls seemed ready to buckle. Everything was scorched, and debris was everywhere. On the second and third floors, charred people remained at their desks. “We just thought it was going to be chaos and hell, and it was,” says Captain Stephen McCoy.

ACFD Chief Edward Plaughter heard the news in a credit union office; the credit union staff was listening to the radio. With the first report of an explosion at the Pentagon, Chief Plaughter immediately responded to the scene.

Aware of the terrorist nature of the attack, Arlington fire dispatch directed companies to stage in three areas: south

(Crystal City), west (Arlington Blvd.) and north (14th Street Bridge). Arlington personnel spent their first minutes on scene removing patients from the Pentagon's outside ring, triaging and treating dozens of injured and setting up for a massive, major, multiple-alarm event.

Media helps mobilize mutual aid

When the first plane crashed into the Trade Center, Alexandria Fire and EMS Dept. Lieutenant Byron Andrews was supervising a new operator practice driving on Truck 208, a 100' tiller truck. Andrews, a paramedic and past chief of the Sterling Rescue Squad (an award-winning volunteer EMS agency in Loudoun County, Va.), learned of the Trade Center crashes via his alphanumeric pager. He called Alexandria Station 208 to suggest the engine captain turn on the television. While still on the road, Andrews felt the rumble of the plane crash into the Pentagon. He could see the smoke rising less than a mile away. Following a directive from Alexandria dispatch, Truck 208 proceeded to Station 206 and awaited further assignment.

Alexandria responded to the Pentagon crash under the area's mutual aid agreement. The department staged its greater alarm companies south of Reagan National Airport. Its ALS units and EMS supervisor went straight to the Pentagon. The suppression companies were first dispatched to a reported gas station fire in Crystal City that proved unfounded. So the first Alexandria suppression company to the crash site was Light-Air 207, which arrived an hour and a half after the crash. The Alexandria companies also responded to fill in at the vacant south battalion Arlington fire stations.

Meanwhile, the senior operation chiefs at Fairfax County Fire and Rescue, west of Arlington, had interrupted their staff meeting at the fire academy to watch the Trade Center coverage. When the second plane hit the Trade Center, the senior chiefs realized the incident likely involved terrorism. They rapidly deployed from the academy, activated the internal emergency operations center at fire headquarters and began preparing for a countywide response to any potential terrorist activity in the Fairfax County area and in anticipation of a USAR activation to New York.

Captain II Dean Cox is Fairfax County Fire and Rescue's resource management supervisor and a member of Virginia Task Force I (VA-TF1)—one of two USAR/OFDA international search-and-rescue teams. As soon as the second plane hit the South Tower of the Trade Center, he began to mobilize VA-TF1. At Fairfax County Fire Station 418, Captain Bernard Bickham started the operational process to get the

team on the road. (Ultimately, VA-TF1 was one of five teams assigned to the Pentagon. For more on the USAR response, see p. 28.)

Fairfax County also responded to the Pentagon under the mutual aid agreement. Deputy Chief Glenn Benarick (who was a battalion chief in September) assembled the Fairfax County first alarm units in a shopping center on Arlington Blvd. at the Fairfax/Arlington County border at 0944 HRS. Arlington Blvd. is the primary east-west highway that divides Arlington County into north and south battalions. EMS supervisor Captain II Richard Yuras and Fairfax County's EMS units bypassed staging and responded directly to the incident. Many of the fire suppression units filled the empty Arlington fire stations in the north battalion.

Also at 0944 HRS, ACFD requested that the District of Columbia Fire and Emergency Medical Services (DCFEMS) department send a

continued on page 30

USAR Activities at the Pentagon

By Buddy Martinette

The Arlington County Fire Department (ACFD), along with other northern Virginia fire departments and numerous police, rescue and military agencies responded to the Pentagon on Sept. 11, 2001, in response to notification that a 757 jet aircraft—hijacked by terrorists—had hit the building.

The response of FEMA's Urban-Search-and-Rescue (USAR) assets to the Pentagon included the Red Incident Support Team (IST) and five 65-person task forces. The USAR teams assigned to the Pentagon included Virginia Task Force I (VA-TF1, from Fairfax County), Virginia Task Force II (VA-TF2, from Virginia Beach), Maryland Task Force I (MD-TF1), Tennessee Task Force I (TN-TF1) and New Mexico Task Force I (NM-TF1). VA-TF1 and MD-TF1 arrived on scene within hours of the incident. TN-TF1 and VA-TF2 arrived the following day, and NM-TF1 arrived on Sept. 18.

The specialized rescue capabilities of the Alexandria and Arlington Technical Rescue Teams and Military District Washington Rescue Unit (MDW) were also utilized.

The USAR teams provide rescue capabilities in all types of collapse situations, but are specifically trained and equipped for search, rescue and recovery operations in reinforced concrete structures. The Red IST is one of three operational ISTs and comprises 12-62 individuals (depending on the type and nature of the event) who provide coordination, planning and command for multiple task forces when they're deployed at a single incident. Due to the magnitude of the events at both the Pentagon and World Trade Center, some Red IST members (including some VA-

TF2 member) deployed to New York and thus were not initially available at the Pentagon. To fill the open IST positions, a Forest Service Type I Incident Management Team was assigned to the IST.

Each USAR task force comprises rescue, medical, search and rigging specialists, as well as engineers and other personnel specially trained to operate self-sufficiently for 72 hours. All USAR personnel at the Pentagon operated on 12-hour rotating shifts that provided 24/7 incident coverage. For each 12-hour shift, 180 USAR personnel were available for operations, complemented by 60 additional military personnel.

Collapse considerations

The Pentagon structure is Type I (fire-resistive) column and beam moment frame construction. This type of building has columns, beams and floors made of reinforced concrete. The Pentagon has five exterior sides. The five corners of the building are called wedges and connect to the main structure by corridors. Each section of the building contains five interior rings. Each interior ring consists of four to five interior hallways that divide the interior office space.

The aircraft entered the Pentagon at ground level between the fourth and fifth corridors to the right of the helicopter landing pad and beside a set of transfer columns—two columns erected next to each other that support different sections of the building. Fortunately, this portion of the building was sparsely occupied because a renovation that included the addition of exterior reinforcement beams had just been com-

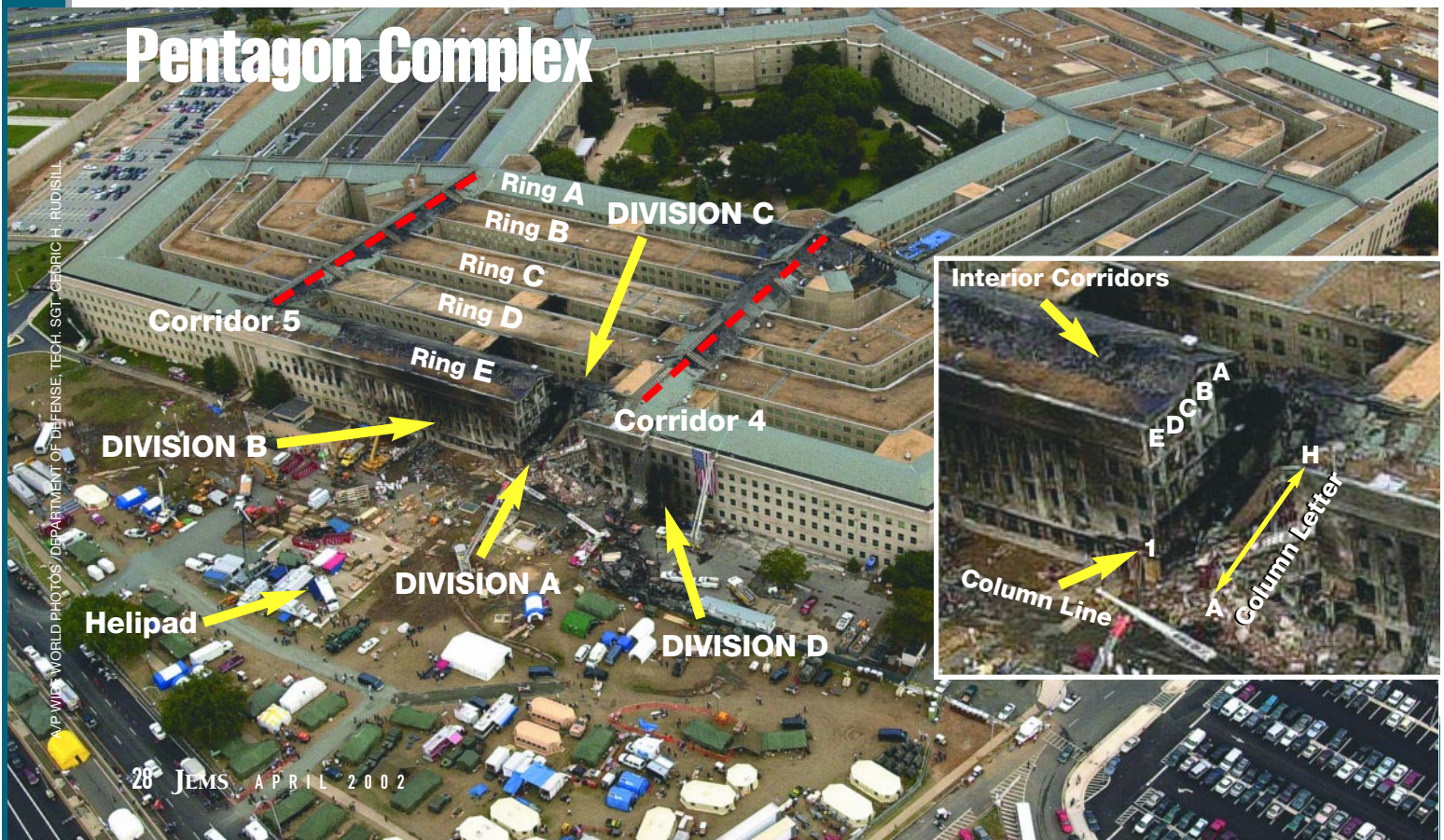
pleted. The relatively minimal loss of life and property destruction the attack caused can be attributed to the reduced occupancy and recent reinforcements.

However, the plane's initial impact produced a tremendous fuel-fed fire and caused severe damage to many of the first floor columns that supported the floors in that wedge of the building. "Firefighters experienced some of the highest radiated and convected heat conditions ever," says ACFD Assistant Chief of Operations Jim Swartz. "In some cases, firefighters had good visibility, but the heat limited their ability to penetrate the structure."

The weakened structure and ensuing blaze eventually caused the floors to fail along the inside transfer column line. When the left side of the structure failed, it created a severely angled "lean-to" collapse area. (A lean-to collapse is an angled collapse created by failure of one side of the floor or roof section, while the other attachment point maintains a connection.) The collapse zone involved five floors and measured approximately 70 feet across the front of the building and 100 feet into the impacted wedge. Additional structural collapse and fire damage was significant on floors one and two, but generally reduced in severity from the first to the fifth floors.

During the first 24 hours, USAR efforts to shore and search the collapse area were hampered by heavy fire and smoke conditions. As the smoke conditions cleared on lower floors, efforts to evaluate the structural damage started as a part of strategy development for future task-force efforts.

Fire conditions continued at some level for several



days. However access to many portions of the structure allowed USAR efforts to proceed in either a structural triage or actual building stabilization mode. The strategy developed by ACFD command and FEMA USAR personnel included protecting rescue workers, preventing further collapse, creating a protected area inside the structure by shoring areas with missing columns, performing body recovery and then finally delayering the collapse portion of the structure—removing debris from the top of the collapse and proceeding to the bottom.

“The factors involved in initial size-up and strategy took into account [that] the structure was compromised by fire, compressive forces and, finally, a collapse,” says John Huff, IST team leader. “In addition, the entire incident management group could not lose sight of the fact this was a crime scene, and evidence recovery was critical.”

Size-up of the structure confirmed a severe-angle lean-to collapse of the first through third floors had occurred along 70 feet of the building just left of Corridor 4. The first and second floors appeared to have pancaked in the collapse area. These conditions presented well into the building and generally followed the G column line. This collapse occurred approximately 20 minutes after the initial impact, thus reducing the probability of trapped victims. Command personnel designated this area of the building Division A. Incident management systems designate portions of the building geographically so personnel can coordinate and communicate on-scene activities. Generally, the front of the building is designated A. Then, running clockwise around the building, the left side is B, the rear C and the right side D.

Observations of the first floor indicated a number of columns in the building were compromised. The left side of the collapse area was designated Division B and consisted of fire damage and explosively compressed materials that ran generally to Corridor 5. The unsupported or damaged columns ran from the front of Division B through the E, D and C Rings and into the central AE Corridor. The right side of Division A was completely unsupported in a cantilever position. The rear of the damaged portion of the building that ran between Corridors 4 and 5 was designated Division C.

The right side of the collapse area was designated Division D and consisted of superficial roof and wall collapse that generally ran to the left of Corridor 4 and extended toward the Division C area along interior column line H.

The angle of collapse in Division A was severe, and the integrity of attachment points on the lean-to portion was uncertain. Division A was deemed unsafe for operation until a safe area in Division B could be established. This included shoring the area from column line 1

continued on page 30



USAR Activities continued from page 29

and intersecting at the H column line of Division B. This strategy helped ensure that any sliding of material in Division A would not result in a further collapse or decrease the structural integrity in Division B.

Additional strategies for USAR operations involved a primary and secondary search and assessment of all divisions and initial stabilization efforts in Division B while working with the FBI on crime scene evidence collection and body removal. "The tactics and work processes in every case took into consideration the on-scene responsibilities of fire, EMS, USAR and the military," says Swartz. "The incident management system at the Pentagon was truly an integrated system and one of the reasons the incident was a success."

After ensuring a safe area in Division B, efforts shifted to removing the floor and beam assemblies in Division A. Rescuers acquired a concrete pulverizing machine to remove the concrete from around the rebar-reinforced sections of the building so floor and beam sections could be reduced to manageable sizes and weights. Crane and heavy lifting operations proved limited due to the size of the material and the fact the concrete was heavily reinforced and not completely broken away from the building.

As the angle of collapsed material was reduced in Division A and debris was removed from Division B, efforts at triaging other parts of the building revealed additional shoring needs in the remainder of Division B on the first floor and the front of Division B on the second floor. Simultaneously, debris and body removal took place in Divisions D and C. These activities continued until all debris was removed from Division A, when final shoring was accomplished in this area on Sept 19.

Other incident activities included crane operations, removing overhead hazards in the collapse area, cutting metal material to facilitate debris removal, establishing dump truck removal processes for debris, water and other utility control efforts, ventilation, hazardous materials monitoring and search dog utilization.

The following summarize the shoring activities in Divisions A, B, C and D:

First floor: Forty-two columns and two wall intersections were shored with 57 6x6 box cribs; 35 beams were shored with tees and vertical shores.

Second floor: Six columns were shored with box cribs; five beams were shored with vertical shores.

Hundreds of various public and private agencies were effectively coordinated to bring the incident to a successful conclusion. The use of the incident management system by ACFD and the subsequent cooperation among all the rescue groups made this one of the most coordinated collapse events in the history of the USAR program. Their aggressive setup of command and subsequent control of emergency scene operations proved of paramount importance to the ultimate success of the incident response. In a nutshell, their efforts were textbook incident command and a big reason the USAR response was successful.

As a direct result of teamwork, accountability and rescuer expertise, the Pentagon USAR operations successfully ceased on Sept. 20 at 1900 HRS with no significant injuries reported.

C.V. "Buddy" Martinette Jr. is chief of the Lynchburg (Va.) Fire and EMS Department and is in his fourth year of the National Fire Academy Executive Fire Officer Program. He's an Instructor IV with the State of Virginia Department of Fire Programs and Incident Support Team Operations Officer and Task Force Leader for Virginia Task Force II. His USAR experience includes the Colonial Heights, Va., Wal-Mart Collapse, deployments for hurricanes Floyd and Fran, the Murrah Federal Building bombing and the Pentagon collapse.

Martinette is a USAR rescue specialist instructor and lectures nationwide on specialized rescue operations to public safety, military, industrial and law enforcement organizations. He has been active in course development for all areas of technical rescues and is best known for his course development and delivery in the areas of confined space rescue, trench rescue and structural collapse operations.

Author's note: The realization that you were just one of hundreds of people who responded to assist at a disaster does not bear much weight until someone asks you to write about the event. It's indeed unfortunate that all of the thousands of firefighters, police officers, military personnel and countless volunteers who responded to the events of Sept. 11 didn't get an opportunity to document their experiences for the emergency service community. That said, I dedicate this story to my friend Battalion Chief Ray Downey and the other FDNY firefighters who lost their lives Sept. 11, 2001.

ATTACK ON THE PENTAGON CONTINUED FROM PAGE 27

box-alarm assignment (four engines, two trucks, a rescue company and a battalion chief) to stage and wait on the 14th Street Bridge, just north of the Pentagon.

The response to the Pentagon attack proved the largest multi-jurisdictional event ever handled by the Washington, D.C., metropolitan area departments.

Initial size-up concerns

On scene at the Pentagon, fire and EMS personnel had to contend with a rapidly escalating situation:

- The plane, a 757 loaded with more than 6,000 gallons of jet fuel, had crashed into a military facility, complicating the coordination of immediate activities;
- The Pentagon was undergoing renovations and the plane damaged part of the active construction site, igniting another 2,000-gallon outside fuel tank at the site;
- Pentagon officials initially estimated 200–800 people were in the impact area;
- Thousands of people—Pentagon employees, contractors and visitors—were milling around the area; and
- Reports indicated other planes might be incoming.

Within two hours, more than 300 firefighters had responded to the crash site. Fire-rescue organizations provided continuous, 24-hour service at the Pentagon crash site for 10 days. Responsibilities of EMS and fire personnel on scene included:

- Locating, triaging, treating and transporting the burned and injured;
- Thoroughly searching the involved part of the building for victims;
- Extinguishing the fires: It took more than 24 hours to extinguish the burning roof;
- Supporting the activities of both local and USAR technical rescue teams;
- Stabilizing the weakened section of the outer three rings: 14 structural columns were destroyed, and it took almost three days to secure the collapse area;
- Supporting the Department of Defense and FBI with evidence documentation and body removal.

The victims

In addition to the 64 crew and passengers aboard Flight 77, 125 military service members, employees and contract workers died in the attack. The death toll remained relatively low because the offices in the outer ring remained sparsely occupied. In addition, hundreds of disciplined, organized and action-oriented military personnel and civilians in the complex immediately started to rescue others in the involved part of the building. They saved hundreds of lives.

In some cases, Pentagon employees took the injured to medical care without consulting fire or rescue personnel. One secretary was away from her office and on the other side of the Pentagon when the plane struck. Returning to her damaged office, she subsequently transported 15 wounded coworkers to a hospital in her pickup.

Within 20 minutes, all red-tag patients were en route to a hospital via air or ground. Responding fire and rescue personnel

triaged, treated and transported 91 patients, 13 of whom went to the regional burn unit at Washington Hospital Center. Six were in critical condition; one died a week later. Another 100-plus patients were lightly injured and treated on scene.

On-scene complications

Although the Pentagon response proved overwhelmingly successful, some problems did occur. The news media created confusion for EMS and fire agencies in Virginia and Washington, D.C. By the time American Airlines Flight 77 had crashed into the Pentagon, a cacophony of unconfirmed reports of other terrorist incidents dominated the media airways. One report claimed a car bomb had exploded in front of the State Department. Other reports indicated a fire was supposedly burning on the National Mall, near the Washington Monument.

An example of the impact this confusion caused can be seen in the activities of DCFEMS dispatch. About the same time Arlington County requested a box alarm from DCFEMS for the Pentagon, the Secret Service called to report that a plane had crashed into the White House, and a box alarm was dispatched there.

D.C.'s Engine 16 and Truck 3 are first-due to the White House. Normally, they greet the uniformed Secret Service officer at a closed access gate. When they arrived on Sept. 11, the access gate stood wide open. Next to this gate, the media conduct their talking head shots, using the White House as a background. Responding crews knew something was up because they observed tripods and stepladders typically used by camera operators abandoned on the hill. As Engine 16 and Truck 3 pulled up, a uniformed officer waved them off, telling them, "Get the f--- outta here! There's a plane coming in!"

Fortunately, no plane crashed into the White House. One reason for this false alarm may have been a split-second decision by an air-traffic controller. When the hijacked plane turned into the Pentagon, it was on a collision course with an airliner leaving Reagan National Airport as scheduled. Without the data from Flight 77's transponder and not knowing the intention of the hijacked plane, the controller ordered the departing aircraft to take a hard right, into the protected airspace above the White House.

continued on page 34

Mosaic of Emergency Responders

The Pentagon is located in a federal and military area in eastern Arlington County, Va., and borders Arlington Memorial Cemetery to the northwest and the Potomac River to the northeast and east. Reagan National Airport sits southeast of the complex. Just south of the Pentagon is Crystal City, a private high-rise office, hotel and residential Arlington County community (see p. 24).

As in emergency responses to other federal and military occupancies in the Washington, D.C., metropolitan area, the initial Pentagon response included a coordinated mosaic of municipal, federal and private fire agencies.

The Arlington County Fire Department (ACFD) is the primary municipal fire protection and EMS agency for the Pentagon. However, northern Virginia fire agencies have concentrated on coordinating emergency response operations for decades. In 1971, a high-rise apartment under construction collapsed at the Arlington County-Alexandria City-Fairfax County border. The resulting massive, chaotic, multi-agency response showed the need for more coordinated dispatch and firefighting efforts among the agencies.

Since the Jan. 13, 1982, crash of an Air Florida airliner on the 14th Street Bridge, the Washington Metropolitan Council of Governments' (COG) has been the coordinating force to have the public safety agencies from Maryland, Virginia and Washington D.C. work toward a unified mutual aid document. One of the problems at the 1982 plane crash was the uncoordinated response of agencies. Emergency units from four states responded in near-blizzard conditions; more than 25% of those units were unsolicited.

By 2001, Arlington, Fairfax, Alexandria and the Metropolitan Washington Airports Authority (MWAA) were working an identical, three-platoon, 56-hour workweek. On Sept 11, B shift was working a 24-hour shift. Some on-duty B-shift command officers from all four fire departments were in Washington, D.C., attending a security briefing on a scheduled World Bank meeting.

The departments also share an 800-MHz radio system, and each fire-rescue unit has a unique radio identification. *Example:* Arlington County is assigned to channel one. The ACFD station in Crystal City is Station 5. The radio designation for its pumper is Engine 105.

The responding agencies

Fort Myer Fire Department: Located one mile from the Pentagon, the Fort Myer Fire Depart-

ment protects several properties inside a 2-sq.-mile military district that lies within Arlington County, Va. The 28-person military fire department protects Fort Myer, Arlington National Cemetery, Henderson Hall Marine Corps Base and the Navy Annex. As part of the northern Virginia regional automatic mutual-aid system, Fort Myer operates two rescue engines as well as Foam 161 under the ACFD radio system.

MWAA: After Fort Myer, the next closest responder to the Pentagon is the crash fire station at Reagan National Airport operated by MWAA. The authority provides fire protection and ALS transport to both Reagan National and Dulles International airports. In addition to its FAA-mandated crash rigs, MWAA operates a rescue engine and medic unit and provides some mutual aid to Arlington County.

ACFD: Arlington County is a dense urban county located southwest of and across the Potomac River from Washington, D.C. ACFD operates out of 10 fire stations, with 10 engine companies, two truck companies, two quint companies, two specialized heavy rescue companies and five ALS ambulances. The department operates north and south battalions.

With so many military and government targets in its coverage area, ACFD has actively prepared for terrorism responses. As recently as April 2001, Arlington had participated in a biological weapons of mass destruction discharge drill with Fort Myer Fire Department.

Mutual aid departments

Alexandria Fire and EMS: Covering a 15-square-mile city immediately south of Arlington County, Alexandria Fire and EMS Department operates eight engines, three aerials and five paramedic ambulances under a single battalion chief and EMS supervisor.

Fairfax County Fire and Rescue: Fairfax County operates 35 paramedic engines, 12 aerials, seven heavy rescue squads, 21 paramedic ambulances and 19 BLS ambulances organized under six battalions.

District of Columbia Fire and Emergency Medical Services (DCFEMS) department: DCFEMS provides fire and ambulance service to Washington, D.C., and the federal properties within the city. The department protects the city via 33 engines, 16 truck companies, three heavy rescue squads, 12 paramedic ambulances and 19 BLS ambulances operating under six battalions. ACFD requested DCFEMS send a box-alarm assignment to the Pentagon.

—MW

Unsolicited help: As Alexandria and Fairfax County units proceeded non-emergency to back up empty Arlington County fire stations, they were startled by emergency apparatus from as far as 60 miles away driving by them. Those units were responding to the Pentagon without formal request. They hadn't been included in the Washington Metropolitan Council of Governments' (COG) published multi-jurisdictional memorandum of understanding and remained unaware of the mutual aid plan. Almost nine hours after the crash, unsolicited fire and rescue units continued to show up at the crash site.

Recall of off-duty firefighters: "If you're not dead, report to work."—alphanumeric pager message sent to Alexandria Fire Dept. members within an hour of the attack.

All Washington, D.C.,-area fire departments have recall plans. Many increase staffing by reducing their three- or four-platoon work schedule to two platoons. For catastrophic events, the department may call all off-duty members back to work. With the exception of Fairfax County, all departments had initiated a massive recall of off-duty personnel within 180 minutes of the attack.

Two days after the crash, Fairfax County's Assistant Chief Mark Wheatley explained his department's strategic decision not to recall members in a telephone conference to the B-shifters. The department's concern was the ability to handle a major event during uncertain times. There was a concern that other targets would be struck. *Example:* Fairfax

County handled a lone terrorist with an AK-47 who killed two and injured three at the entrance to CIA headquarters in 1993. If Fairfax had deployed all resources by Tuesday afternoon, who would have been there to handle operations on Thursday?

As a result of the Pentagon response most departments discovered their recall plans needed work. Some fire stations had firefighters reporting for duty, but no units to staff. Arlington had its recalled firefighters ride with the mutual-aid companies filling the Arlington fire stations. Although Arlingtonians swear the numbering and labeling of streets in their dense, urban county make sense, most of the fill-in companies needed both a map book and an Arlington firefighter to get them from point A to point B.

Conclusion

Arlington County is preparing a comprehensive report on the incident scheduled for release later in 2002, but here are some preliminary lessons learned:

1. The incident management system works. Arlington County established a system that incorporated the activities of dozens of fire department, law enforcement, military and federal agencies. It allowed for rotation of sector officers throughout the incident. *Example:* The Logistics Sector command position was covered, at various times, by a Prince William County (Va.) chief officer, an Airport Authority captain, a Fairfax County firefighter and an Arlington County civilian.
2. Site control must begin early. Within 36 hours, the Department of Defense established effective control of the incident site, using photo ID cards, fencing and armed soldiers.
3. Departments must ensure all staff have appropriate and up-to-date photo identification. (Disasters attract people who pose as emergency personnel.) State employees from various Virginia emergency response organizations were surprised to discover their state identification cards had expired. Many emergency responders did not have durable personal identification to link them with their agency.
4. Departments must build depth into command staff. Junior officers or senior firefighters must be capable of assuming many incident management roles. ■

Michael J. Ward retired from the Fairfax County (Va.) Fire & Rescue Department in July 2000 after 25 years in the department. He also writes the FIRE RESCUE MAGAZINE Company Officer Development column. Contact him via e-mail at commander@aol.com.

Resources

- Alexandria Fire and EMS Department—http://ci.alexandria.va.us/fire/fire_home.html
- Arlington County Fire Department—www.co.arlington.va.us/fire/
- Fairfax County Fire and Rescue—www.co.fairfax.va.us/ps/fr/homepage.htm
- Metropolitan Washington Airports Authority—www.metwashairports.com/rescue/
- Virginia USAR Task Force 1—www.vatf1.org



A Pentagon victim is loaded into an ambulance Sept. 11, 2001, after the building took a direct, devastating hit from an aircraft during a terrorist attack.

PHOTO: AP/WIDE WORLD PHOTOS/WILL MORRIS

The Building

The world's largest office building, the Pentagon is a five-story, monolithic, reinforced-concrete structure. When it was built in 1942, the production ramp-up for World War II made it impossible to use steel girders in its construction. Instead, spirals of 4" reinforcing steel rods were cast inside the massive concrete columns.

The airliner struck a segment under extensive renovation. The outside wall had recently been reinforced with blast-resistant windows, steel girder reinforcement and a Kelvar-style barrier. The interior featured a new fire sprinkler system with fire-resistant carpet, wall paint, drapes, ceiling tiles and other finishes.

Parts of the outer ring segment remained sparsely occupied due to the renovations. One contractor unwillingly got the chance to see the new system in action. He was walking in the new, empty wing when the plane struck the building. The pressure created by the impact picked him up and hurled him down a corridor. He watched ceiling tiles blow in front of him, like a wave at a beach. He was slammed against a wall, and the office door closed behind him.

The contractor suffered significant blunt injuries to both hands. His hands were also burned when he tried to open the door: the fireball was right behind the pressure wave that threw him into the office. A few minutes later, when a Pentagon officer assisted him out of the building, the sprinklers were operating in the hallway.

—MW