

Chapter One

The Attack and Rescue

INTRODUCTION

September 11, 2001, began with glorious weather up and down the east coast of America. The sun shone from clear blue skies, and the temperature was a mild 70 degrees. A pleasant breeze blew in the Washington, DC, area, as morning commuter traffic moved steadily along the roadways and across the bridges that connect Northern Virginia and suburban Maryland with the nation's capital, including Department of Defense (DoD) employees on the way to the Pentagon in Arlington, Virginia. Those who arrived early to "beat the traffic" were at their desks by 0600. The majority of workers were in by 0900.

The 23,000 Pentagon employees, who helped run the nation's military establishment, included highly trained professional members of the Defense Secretariat, the Joint Chiefs of Staff, and the military and civilian components of the three armed services. These experts analyzed budgets, made plans, wrote doctrine, and formed policies for national defense and US military involvement around the world. For many, the five-storied and five-sided Pentagon building came to symbolize the kinds of people they were and the kinds of work they did.^{1(p148)} They simply and affectionately called the Pentagon "the building."

The 11th of September, 2001 (or 9/11, as it has become known), marked, to the day, the 60th anniversary of the Pentagon's 1941 ground breaking ceremony at the former site of Arlington Farms, across the Potomac River from Washington, DC. Starting barely 3 months before US entry into World War II, the War Department built the structure with reinforced concrete made from sand dredged from the river rather than employing the usual metal frame techniques in order to reserve steel for building ships. When completed 16 months later, the building contained almost 7 million square feet of floor space and covered an expanse of 29 acres. The nearby roadways dictated the building's pentagonal shape.^{2(p7)}

Soon known as the Pentagon, the building had "corridors that run, like spokes

of a five-sided wheel, from the edge of the central courtyard to the building's perimeter. Linking the corridors are five concentric rings of hallways lettered A to E, the E ring being the outermost. The rings are stacked five stories high, creating 17 and ½ miles of hallways.^{3(p49)}

The center courtyard was a 5-acre park with green grass, flowers, benches, and walkways. This area served as a shortcut for workers to quickly get from one side of the Pentagon to the other. To assist newcomers in navigating the building's countless stairwells, corridors, entrances, and exits, managers placed diagrams of the structure at strategic points.^{4(pC2)}

In 1998 the Defense Department began a 14-year modernization program that included the addition of blast-resistant windows almost 2 inches thick to protect E-ring work space; the reinforcement of weight-bearing columns with steel; and the insertion of a material similar to Kevlar (DuPont, Wilmington, DE) into the outer walls of E-ring to keep debris from exploding inward if an external impact occurred. The attics remained wooden. On 11 September 2001, contractors were a few days away from completing wedge 1, which was located between corridors 4 and 5. The newly renovated section was only partially occupied.^{2(pp7,8),3(p139)}

Two medical facilities served the building's occupants. Staffed by Army, Navy, and Air Force medical personnel, the DiLorenzo Tricare Health Clinic, named



Aerial view of Pentagon, 2001.
Photograph: Public Affairs, Office of the Surgeon General, US Army.

after its prior long-term commander, physician Anthony DiLorenzo, stood on the opposite side of the Pentagon from Wedge 1 below ground level on the E-ring at corridor 8. Replacing a former Army clinic and opened in March 2000 under the North Atlantic Regional Medical Command at Walter Reed Army Medical Center, the facility was the first and only triservice health clinic in the military system. The Air Force's much smaller 11th Medical Group Flight Medicine Clinic was located above DiLorenzo on the fourth floor. A Navy dental clinic was located near DiLorenzo. DiLorenzo, in concert with the Air Force and Navy clinics, provided the building's medical support, and its commander acted as the Pentagon's surgeon.

DiLorenzo's mission included the provision of daily routine medical care to Pentagon staff and emergency medical care to individuals in the building and on the grounds outside. Active duty military personnel received a variety of services, from primary care and minor surgery to specialty treatment such as cardiology and podiatry. In addition to an acute care clinic for urgent emergency patients, the medical facility also provided occupational health services to civilians in all the buildings of the Washington Headquarters Services, a DoD field agency that owned and operated the Pentagon and other DoD structures in the national capital region. The staff of DiLorenzo and its two subclinics—the Fort McNair clinic in southwest Washington, DC, and the Arlington Navy Annex clinic up the hill from the Pentagon—numbered about 200 persons, half of them civilians. Although all three services were represented, including a number of Air Force reservists, the personnel staffing the system were predominantly Army. Besides physicians and nurses, they included laboratory, radiology, pharmacy, medical maintenance, logistics, information management, and occupational healthcare specialists.⁵⁻⁷

Since its inception, 18 months before 9/11, the clinic worked on emergency preparedness. "Emergency procedure was on our front burner," said Colonel James Geiling, DiLorenzo's commander. As a result, two five-person emergency teams were always present to respond to emergencies involving military or civilian workers inside and outside the Pentagon. Each team consisted of a physician, a registered nurse, and three medics (an ambulance driver, a messenger, and a medical assistant) who would rush to a crisis scene. They provided initial emergency care before deciding whether evacuation to an emergency room was warranted.⁵ The Air Force Flight Clinic's 16 staff members were primarily aerospace medicine specialists who took care of Air Force pilots and crew on active and inactive status, air traffic controllers, air weapons controllers, parachutists, and senior staff at the Pentagon. They worked with the DiLorenzo Clinic on a daily basis and in emergencies.⁸

At Fort Myer, Virginia, about 1 mile from the Pentagon, the Andrew Rader Health Clinic provided primary care to military personnel and Fort Myer residents. The clinic's staff of 140 employees, more civilian than military, emphasized prevention and wellness and did not practice emergency medicine. Rader was a subclinic of Fort Belvoir, also located in northern Virginia, about 15 miles south of the Pentagon.⁹

THE ATTACK

September 11th began as a normal day in the DiLorenzo Clinic. Eighty-five staff members, including eight primary care physicians, were on hand, and all the specialty clinics were open. Before 0900, CNN television playing in the clinic waiting rooms interrupted its program with breaking news that American Airlines Flight 11 from Boston had struck the North Tower of the World Trade Center in New York City at 0846. Patients and staff, including Major Lorrie Brown, DiLorenzo's chief nurse, watched in horror as the floors between 93 and 99, where the plane had struck, turned into an inferno. Still reeling from the shock, they looked on as yet another plane hit the World Trade Center. This time it was United Flight 175 from Boston, which crashed into the South Tower at 0903. Major Brown had charge of the clinic that morning because Colonel Geiling was working at Walter Reed's intensive care unit, a service he performed some 8 weeks a year to keep his skills current. As everyone stood aghast watching the second tower burn, Major Brown tried in vain to get staff back to work, but they remained riveted to the television.^{5,6,10(p32),11}

About 10 minutes later, in the Pentagon's south parking lot, Master Sergeant Noel Sepulveda, US Air Force, called the Pentagon testing center on his cell phone to let his commanders know he was on the way to the building to take a promotion test, but was running late due to an earlier first sergeant's meeting at Bolling Air Force Base in southeast Washington. He learned from his commanders that they had canceled the test due to the attacks on the twin towers, which were by then believed to be the work of terrorists. This was the first time Sergeant Sepulveda heard about the assaults in New York City.¹²

After the call, Sepulveda noticed an airplane flying in from the south and descending low over the Pentagon. Normally he would not have paid much attention, but the news he had just heard made him watch the plane. Aircraft on their way to Reagan National Airport usually came down the Potomac River and not over the Pentagon. Continuing to walk, he thought, "Does this guy know what he is doing?" Perhaps the pilot was trying to get back to the airport quickly. As the plane descended further, its landing gear appeared. Swooping over nearby Henderson Hall, a US Marines headquarters, and a nearby Sheraton Hotel, the plane hit two light poles on Highway 27 and an electric generator near the Pentagon helipad, which sheared off part of a wing. "I could hear the engines powering up really high at this point like they do on the runway at takeoff," he said. Then, at 0937:46, the jetliner slammed at a 45-degree angle into the west face of the Pentagon between corridors 4 and 5. Sergeant Sepulveda could see the wings disappear, and the tail sticking out for a second before there was an explosion that burst into two huge fireballs. The American Airlines jet had penetrated E- and D-rings and had come to a stop at the far side of C-ring, a distance of about 285 feet. Flight 77, with 53 passengers, 6 crew, and 5 hijackers on board, had been traveling at 530 miles per hour.^{2(ppA-8,A-9),3(p49),10(pp10,27,33),12}

The destruction caused by the attack was immediate and catastrophic. The 270,000 pounds of metal and jet fuel hurtling into the solid mass of the Pentagon is the equivalent in weight of a diesel train locomotive, except it is traveling at more than [500] miles per hour. More than

600,000 airframe bolts and rivets and 60 miles of wire were instantly transformed into white-hot shrapnel. The resulting impact, penetration and burning fuel had catastrophic effects to the five floors and three rings in and around Pentagon Corridors 4 and 5.^{2(p99)}

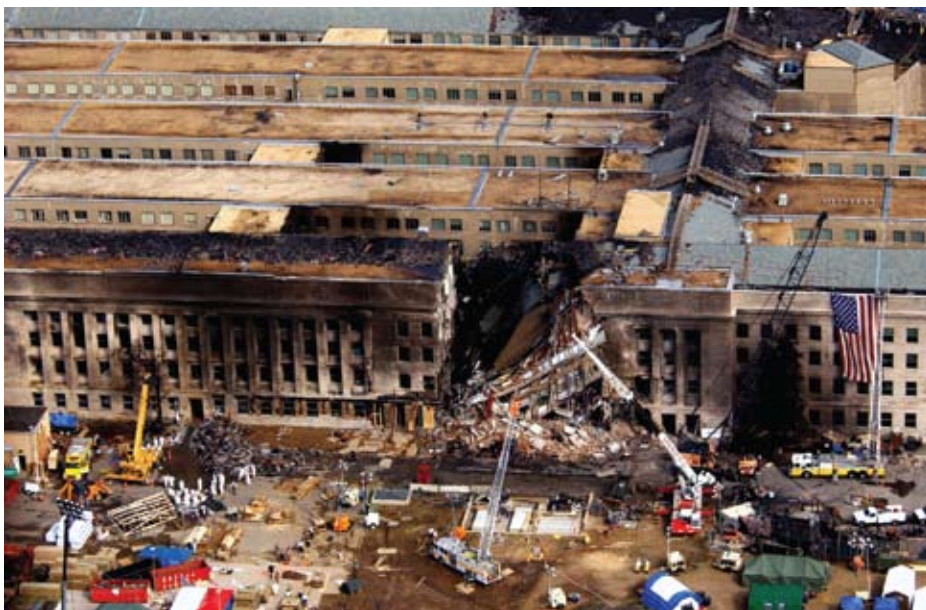
The crash took the lives not only of the terrorists, passengers, and crew on the airliner but also of 125 Pentagon workers: 72 from the Department of the Army, 43 from the Department of the Navy, and 10 from the DoD. There were 120 confirmed dead and 5 unaccounted for, not including one individual who later died of wounds sustained in the attack.¹³

The explosion caused a blast that knocked Sergeant Sepulveda back against a light pole. He felt the heat of the fireballs. Recovering, he saw people running out of the Pentagon and ran toward them to help. When he tried to enter the building he was pushed back by the crowd, which told him he needed to get out of there, even though he said he was a medic. He ran around to the impact site and, avoiding the flames, entered the building through an opening where a set of double doors had blown out. He started “yelling for people,” hoping he could lead them to safety.¹²

Sheila Moody, a civilian employee of Army Resources Services, worked in a room in the E-ring on the first floor at the 4th corridor. The helipad was right outside her office window. A coworker had just told her about the two planes hitting the World Trade Center when she heard “the sound of a whistle . . . then . . . a



Collapsed wedge on Pentagon’s west side, 11 September 2001.
Photograph: Public Affairs, Office of the Surgeon General, US Army.



Aerial view of collapsed wedge later in the day, 11 September 2001.
Photograph: Public Affairs, Office of the Surgeon General, US Army.

rumble. . . A large gush of air and a fireball . . . came into the office and just blew everything all over the place and knocked us over.” The fireball didn’t knock her out or down, but flung her chair back and produced flames everywhere. She had covered her face with her hands. The flames lasted about 2 seconds. Then there was darkness and smoke and pockets of fire here and there.¹⁴

Moody had no broken bones and no other injuries but burns, as far as she could tell. She could move, and after feeling a hot sensation on her back, she quickly threw her burning jacket to the ground. Then she started looking around for a way out. She noticed a small high window in her office and moved toward the light. Upon reaching the window, she could not lift it, and began looking for something to break the glass. Little did she know that just a few feet away was a huge hole in the wall that had been blown out by the plane’s impact. She started praying, then heard a fire extinguisher and the voice of a man saying, “Is anybody there?” She called back, “Yes, we’re here. We’re here; we need some help.” The man’s voice replied, “I can’t see you.” She said, “I can’t see you either . . . but keep coming; we’re here; we’re here.” The smoke and the flames made it difficult for her to speak, and she could no longer call out. So she clapped her hands hoping he would follow the sound and find her. When the sound of the fire extinguisher got closer, she knew he was coming in her direction. Then she could see his silhouette through the smoke. After he used the fire extinguisher to put out the flames between them, she stepped over some debris, and he led her through the gaping hole

on the side of the building to the outside. She told him there was another woman who sat in the cubicle behind her who still was in the office, that her coworker could walk but was confused and couldn't find her way out. Would he go back in and get her? After Moody's rescuer, who had entered the impact area to find survivors, pointed her in the direction of medical help, he went back into the burning building and brought out her unidentified coworker.¹⁴

Lieutenant Colonel Adrian Erckenbrack, a defense congressional fellow assigned to the office of Senator Joseph Lieberman, entered the Pentagon at 0630, his usual time of arrival, and went straight to the secretary of the Army's Congressional Liaison Office in the C-ring on the edge of the 5th corridor. Only about 10 people were in the office that day, as compared to other days when there might have been 15 to 20 fellows and staff members present. At 0900, he heard a commotion and walked down the hall to the travel section of the Office of the Chief of Legislative Liaison, his home office. Three women were watching the CNN broadcast of the World Trade Center burning. As the room started to fill up with people, he walked back to his own office and turned on his television.¹⁵

He tried to work but was fully engrossed in the story coming out of New York. When the airliner hit the Pentagon at 0938, his "whole office shook . . . Some of the ceiling tiles fell out. Lights went off and on . . . I could feel the concussion, so I knew from my experiences that an explosion had occurred." Some people panicked. Others were in a daze, not knowing what to expect. The lights came back on. People evacuated the office. Erckenbrack went into the corridor "to get a sense of what was going on." He had wondered if ground forces were attacking the Pentagon but there was no sound of weapons. He saw people running in the hallway to the other side of the building. After seeing fire and smoke to his left, he decided to follow the others out of the Pentagon. As he did, he saw the gaping hole in the side of the building that the aircraft had made upon impact. "Everything was smoking." There were huge billows of black and grey smoke and debris that extended 20 to 50 yards out from the building. He looked to his right and observed the secretary or chief of staff of the Army being escorted to a parked car for evacuation. At this point, he was lucky enough to get a call through to his wife on his cell phone to let her know he was safe.¹⁵

He decided to run back toward the building to see if anyone needed help. As he was hurrying, he saw an arm sticking out from the debris in front of the crash site. He climbed up the rubble, and, with the help of two other men, pulled the buried man to safety. The victim was alive and did not seem to be bleeding, though he was covered with soot, burnt black material, and concrete. He was lucky to be in a part of the Pentagon that did not burn, although it had collapsed. The three rescuers carried the injured man away from the building to a medic who had begun to provide care at a nearby emergency treatment area that had just been established.¹⁵

Also helping to rescue victims were firefighters Dennis Gilroy, Mark Skipper, and Alan Wallace from the Fort Myer Fire Department, who were already on duty at the Pentagon heliport when the aircraft rammed into the building. They remember hearing a horrible crash, seeing an orange glow, and hitting the ground as flying debris set their truck on fire and blew out a tire. They got up from the blast,

put their gear on, and went to work. While Gilroy reported to the Fort Myer Fire Department the exact location of the crash, Skipper and Wallace helped victims escape the Pentagon through its first floor windows.^{2(pA-4),16}

INITIAL MEDICAL RESPONSE: DiLORENZO TRICARE HEALTH CLINIC

Besides being the DiLorenzo Tricare Health Clinic's chief nurse, Major Brown was the chairperson for DiLorenzo's Action Response Team, in charge of the clinic's mass casualty plan. The team had been developing the plan for a year to reflect the clinic's new status as a triservice clinic. In the process it had involved other military and civilian organizations in its planning: the Air Force Flight Clinic; the Navy dental clinic; the Washington Headquarters Services; the Arlington County Fire Department; the Federal Bureau of Investigation (FBI); the Federal Emergency Management Agency (FEMA); and the Defense Protective Service (DPS), the DoD law enforcement organization for the Pentagon (now the Pentagon Police Department). Continuing to develop their piece in the overall mass casualty scheme, DiLorenzo's Action Response Team held a table-top exercise in May 2001 that involved the Air Force clinic, the Navy dental clinic, DPS, FEMA, and the Arlington County Fire Department. In the exercise, the scenario involved a commercial jetliner that crashed into the west side of the Pentagon. The plot was realistic because of the proximity of Reagan National Airport. The participants rehearsed how they would respond, how to get the Pentagon cleared quickly, where to set up casualty collection stations, and what equipment to have available. Although the exercise did not involve a terrorist plane or one that was loaded with fuel, it enabled people to get to know each other and the roles they would play in such an emergency.^{6,7,17}

As a result of those drills, the DiLorenzo Clinic changed the color of its emergency vests from yellow to blue to coordinate with the vests of the civilian agencies it would work with in the case of a mass casualty incident. Blue was "clearly identifiable"⁶ by civilian agencies. DiLorenzo staff put their job title and organization on the interchangeable vests. DiLorenzo's logistics staff stocked drugs, litters, and other medical supplies for an emergency.^{6,7,17}

Because the DiLorenzo Clinic was below ground level, had recently been renovated, and was not in the part of the Pentagon the plane struck on 9/11, it was not affected by the crash. The lights stayed on, the phones still worked, the ground had not shaken, and the staff and the patients had not felt the airliner's impact. For 2 minutes after the attack nothing happened in the clinic. Then an Air Force officer ran into the clinic and told everyone to evacuate because "something horrible ha[d] happened."⁶ He continued to race down the hallways of the clinic instructing people to leave.^{6,18} Major Brown ran after him; grabbed him by the shoulders and said, "Sir, who are you, and what do you know? You've got to tell me." Excitedly and in a state of shock, he said, "I don't know. But it is horrible." After stopping the Air Force officer, Major Brown tried to confirm the emergency from DPS, but she could not get through on her two-way radio—a portent of communication problems to come. She told patients and nonmedical staff to evacuate,

and then began to assemble the disaster team. She ran down the hallway to the facility's dental clinic, because its Navy dentists had equipment and were trained in medical triage (the act of sorting casualties by severity of injuries and priority of treatment). The dentists also had worked with DiLorenzo on mass casualty throughout the year.⁶

While Major Brown organized the medical response, a Navy commander yelled into the clinic, "There's a patient in center court."¹⁹ Captain Jennifer Glidewell, an acute care chief nurse, and Sergeant Matthew Rosenberg, a medic, grabbed radios and medical bags and, against the tide of people evacuating the Pentagon, ran down corridor 8 toward the center of the building and out the doors leading to the courtyard. Captain Glidewell could see the smoke billowing out of the building. She radioed back to Major Brown, "This is not a drill. This is real."¹⁹ The captain and sergeant raced across the courtyard and into the door leading to corridors 3 and 4, where people were escaping into center court.^{19,20} "That door was the lowest door away from the point of impact where they could get out," recalled Sergeant Rosenberg.¹⁹

The first patient to appear "had skin hanging off his face" and his clothes were in shreds, recalled Captain Glidewell. "He was running with his arms up in the air, and he was screaming."¹⁹ His blood was visible on his skin, and he had second-degree burns. The captain and the sergeant pulled him to the ground and began to cut loose his clothing. They were the only medical people in the center courtyard at the time. As they were treating this man, hundreds of workers started fleeing the burning building into the courtyard. Some individuals carried others who were suffering from contusions, smoke inhalation, lacerations, and burns. People were helping and comforting the injured. Captain Glidewell and Sergeant Rosenberg had no oxygen (the clinic's oxygen was in large canisters that were not portable), so the patients with inhalation problems were told to breathe slowly and deeply to help clear their lungs. Wearing a laboratory coat over her class-B uniform blouse and skirt, Captain Glidewell took immediate charge of the medical response in the courtyard. She went over in her mind the mass casualty exercises she had experienced. She found a green notebook on the ground and started using it. When medical volunteers began arriving from various locations, she assigned them to triage teams. She set up a patient collection point for distribution to triage sectors, located outside the doors leading to corridors 3 and 4, and labeled each sector according to standard practices as minimal, immediate, delayed, or expectant.^{19,20}

When the first official outside responder on the scene, Arlington Battalion Fire Chief Jerome Smith (who was in charge of fire suppression from the Center Courtyard, his mission to keep the fire from going through the B-ring), first reached the area, he found it in turmoil. "More than 400 building occupants crowded the center courtyard. Others leapt from the upper floors, as colleagues armed with fire extinguishers attempted to extinguish the flames consuming burning comrades." Although Arlington County Emergency Medical Services (EMS) staff were initially unaware of the DiLorenzo Tricare Health Clinic's actions, because of communication difficulties that morning, Chief Smith reassured Captain Glidewell and her assistants that help was on the way.^{2(pA-11)}

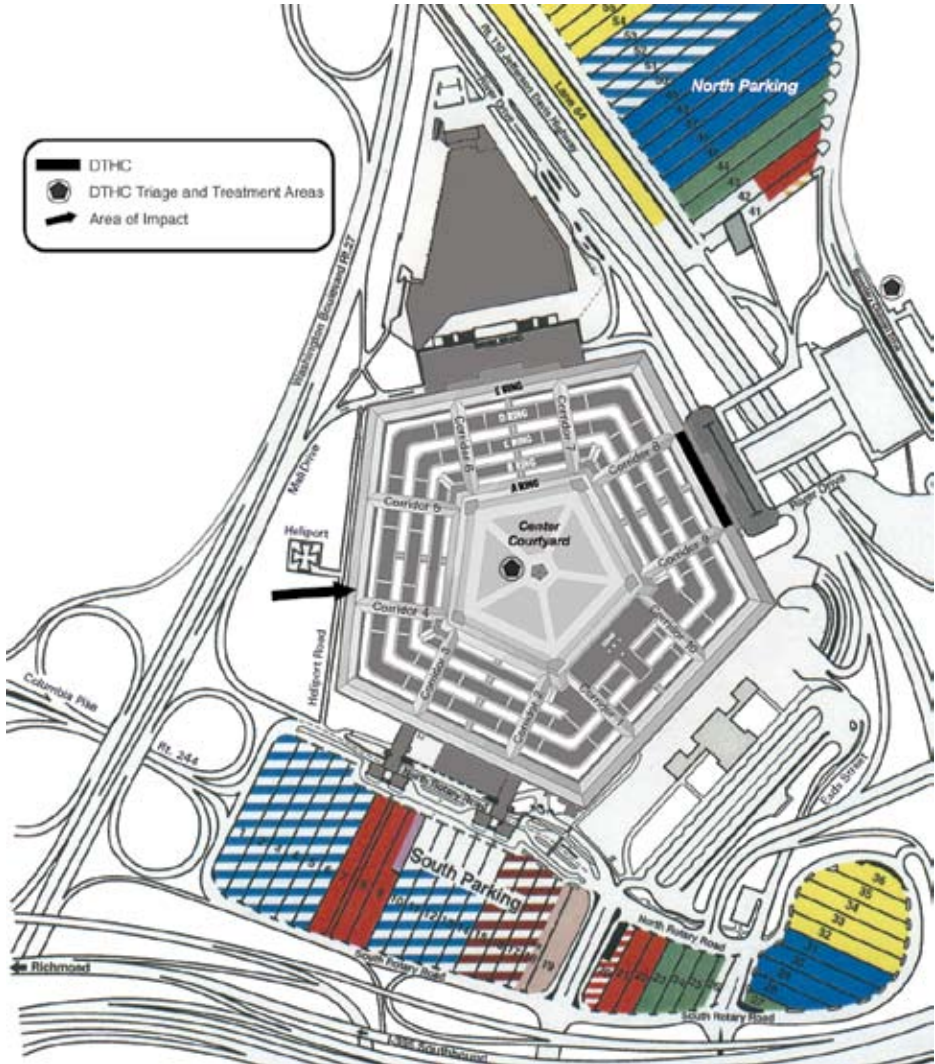
While masses of people ran into the center courtyard to escape the fire, hundreds others fled down corridor 8 and out the doors leading to the north parking area on the opposite side of the building from the impact zone. Ambulatory patients hurried to the nearby DiLorenzo Clinic. Other injured were carried there.¹⁸

Meanwhile, Major Brown sent one of the emergency teams that were on duty every day forward into the courtyard's center to help Captain Glidewell and Sergeant Rosenberg. She sent the second team to north parking to establish a patient collection point on a grassy lawn near Boundary Channel Drive and close to the Pentagon Officers' Athletic Club, just outside the clinic and not far from the child care center. About half of the 15 dentists on duty that day went to north parking, and half went to the center courtyard. Brown established a third triage area in the clinic because people kept bringing casualties there. Each triage area had a red section for immediate patients, a yellow one for delayed, and a black area for expectant. With their emergency bags already packed, and only the length of the hallway to run, the teams, according to Major Brown, had all of the triage areas operational by 0943, 5 minutes after the plane hit the Pentagon.^{18,21}

The Pentagon child care center and developmental school were located across from the athletic club. Shortly after the jetliner crashed, medical personnel heard children screaming. The medics jumped over a fence to get to them, and the medics and teachers tried to calm the youngsters. Saying, "Let's go on a field trip," they led the children hand-in-hand to Lyndon Baines Johnson Memorial Grove, which lay north of the Pentagon and the north parking lot toward downtown Washington, a distance of a half mile, and out of harm's way.⁷

As written in the mass casualty plan, Colonel Michael Kaminski, DiLorenzo's chief of ancillary services, had been designated as the liaison between the clinic and the Pentagon's DPS. After the explosion, Kaminski took a radio and ran to a temporary emergency operations center that, shortly after the plane hit the building, the DPS had located in a van parked outside the underpass at the traffic circle on Washington Boulevard and Columbia Pike. From there Kaminski attempted to use procedures, systems, and techniques normally employed in combat to manage communications between the clinic and the DPS. Using his radio, he coordinated with the deputy commander for administration of the DiLorenzo Clinic, Lieutenant Colonel John Felicio, on logistics and other medical activities. He also tried to keep the lines of communication open between the medical facility and the DPS. A clinic information management officer, Air Force Captain Joseph Ibanaz, who used his radio to communicate medical needs and bring people together, aided Kaminski in those efforts. Despite those attempts, oversaturated radio channels and overloaded cell phone circuits resulted in very disjointed communications.^{7,22,23}

While Colonel Kaminski tried to solve communications problems, Major Brown organized more medical teams. The DPS, which had intermittent contact with DiLorenzo, requested medical teams for the heliport, for corridors 3, 4, 5 and 6, and for various Pentagon floors. Also, medics at north parking radioed that they had traumatized and walking wounded who needed help. The major sent a medical team to the heliport at 0953, and, adhering to her emergency plan, formed the DiLorenzo manpower pool into more teams. Those groups included



DiLorenzo Tricare Health Clinic (DTHC) triage areas and parking zones.
 Graphic by Annita Ferencz, Office of Medical History, Office of the Surgeon General, US Army,
 March 2010.

volunteer doctors and nurses working at the Pentagon who offered their services to the clinic. Major Brown issued blue vests to the volunteers so that they would be recognizable as medical personnel, and sent them with medical supplies to the corridors, floors, and north parking, which had become a rallying point for people in need on the river side of the Pentagon. She promised the medical personnel that the clinic’s logistics staff would soon be providing support.¹⁸

The teams barely got to their destinations, when one radioed back: “I need O2 [oxygen]. I need splints. We’ve got burns. We need morphine . . . We’ve got shrapnel that needs to be treated.” DiLorenzo’s logistics people sent what was needed as each team checked in. It was fortuitous that the clinic had been conducting inventory that day, because its equipment was out and readily available.⁶

Major Brown continued to make up medical teams, often using volunteers including military of all ranks and civilians. The volunteers kept coming in: “I’m a doc.” “I’m a nurse.” “I’m here to help, what can I do?” The Army nurse responded, “Okay, here’s a vest, here’s a bag.”⁶

Major Brown found herself managing the clinic, the Pentagon Officers’ Athletic Club triage area, the center courtyard, and corridors 3, 4, 5, and 6 at any given time during the first 40 minutes after the attack, making spur-of-the-moment decisions.^{6,18} When corridor 6 failed to call in because no radios were available, for example, she told one volunteer, “You’re going to . . . Corridor 6—I haven’t heard from my team on Corridor 6, you need to run [there] and then you need to run back here and tell me what’s going on. I need to know. Are they dead? Do they need equipment? . . . Do they have patients? What do they need? You run, and you come back, and then you let me know.”⁶

The teams Brown sent to the center courtyard accompanied fire department rescuers into the burning wedge three times to find, evacuate, and treat patients before the building collapsed. These men and women included military medics, laboratory technicians, logistics personnel, radiologists, and civilian volunteers. One laboratory technician who risked his life several times in this operation was an 18-year-old, Private First Class Kristopher Sorenson. To protect themselves from the thick smoke that made it impossible to see the hands at the ends of their arms, he and his compatriots put towels or T-shirts over their faces before entering the building.⁶

The inner courtyard soon had between 100 and 150 medical staff and volunteers. In an e-mail, Russell, a volunteer in the inner courtyard, described the group:

We were a mix of generals and privates, all services . . . but I can’t think of a better group to respond to a crisis. All were cool and calm . . . many . . . had been under fire over the past 30 years. We had SEALs and Special Forces, etc, too . . . very poised. A few civilians, all ex-military. No one postured . . . all were leaders and knew how to take charge but realized there could only be one chief and good followers to make things work. The stretcher team next to me had a 3-star Air Force general on it . . . the junior officer who had the lead asked him if he wanted to take charge—he said: ‘No, I’m just a volunteer on the team Major.’ The volunteers deferred to the medical staff.²⁴

Leading one of the rescue teams was the Air Force surgeon general, Lieutenant General Paul K Carlton Jr, who had run to the DiLorenzo Clinic immediately after the attack and donned a blue vest. He arrived in the center courtyard and helped organize the minimal, immediate, delayed, and expectant triage teams. Fire Chief Smith, who was in the center courtyard with fire rescuer, at this time, reassured the military medics that ambulances were on their way, but he could not say when litter teams would be there. As a result, Carlton formed four volunteers into a litter team to accompany him into the building to search for survivors. Sergeant

Rosenberg grabbed a litter and his medical bag and followed the general inside.^{17,20}

The group entered the Pentagon's first floor and hurried down corridor 4 to the area between the B- and C-rings, where the building's only ground floor alleyway was located. It was filling with thick black smoke, and a number of people were gathered in front of two holes in the wall of ring C between corridors 4 and 5. Voices of people in distress could be heard coming from those openings. The windows and walls of C-ring were bulging from the fire, and flames were leaping from its roof. A set of the airplane's landing gear that had penetrated the E-, D-, and C-rings was in the alleyway. Seeing this, General Carlton realized for the first time that an aircraft rather than a bomb had struck the Pentagon. A civilian told the team that he and others had just helped people from the third floor escape and he believed there were three more people trapped in the area. Three attempts had already been made to gain access to the room through one of the gaps in the wall. The rescuers cleared another low entrance, about shoulder width, into the smoke-filled room. Seconds later, two people, scared but physically unhurt, emerged from the opening. The people working on the access crouched down and entered the hole they had just made. Carlton and his litter team followed. The first group to gain entrance started moving rubble out, and the others, standing in ankle-deep water, formed a line to pass the debris into the alleyway. Thick smoke made it difficult to breathe. The people outside the wall took off their T-shirts and wet them and handed them to the people inside so that they could breathe better. This action made the rescue possible.^{8,17,25} "It was absolute pure heaven to breathe something that was cool," recalled Carlton.¹⁷

No one could see anything while standing up; when someone crouched down, the scene was "remarkable":

There was a man on the floor with the floor having just had a fire put out, because it was still smoking everywhere. He was on his back. And as I got low enough to look, the first thing I saw in the room was this man lifting a table. When he lifted the table he didn't lift it far. He lifted it and then I could see a casualty kind of laid out with his feet to my left and his head to my right, cocked at a funny angle and about a foot and a half off the ground. I subsequently found out he had been sitting in a chair at a table when the building collapse occurred, and the chair arms held and kept the table from crushing him. The table had a lot of debris on it, and so apparently the first two people in the room could not lift it. There was fire on top of the table. This gentleman laying at a kind of funny angle, had fire right above his head on a cabinet and fire literally at his feet. He looked at us. He looked at us, and he was astonished, with a kind of "I am not awake" look. By that time I had a wet T-shirt over my face . . . I handed a wet T-shirt to the person who was just ahead of me. And I threw a wet T-shirt, and one of us hit him [the man on the ground], which made him shake himself and wake up. He was just out of reach. We very strongly verbally encouraged him to move, so that we could get him. He rolled to his left and there was somebody whose feet I saw at the level end of the table, who grabbed him. The rest of us grabbed him also. About that time, somebody passed me a fire extinguisher. There was fire fairly much all around. I squirted it, and it made it flare up more, which told me it was a fuel fire. The man on the ground was smoking at that time, and I squirted it on him. He didn't catch fire. He rolled out. The next part then was to get him out. We passed him out.¹⁷

Someone gave General Carlton a mask and a flashlight. As he was stumbling to put on the mask, people outside yelled, "Get out!" The loudest cry came from

Navy Commander Craig Powell, who was 6 feet, 5 inches tall and weighed 250 pounds. Before the attack, Powell had been in the section of the building that was now crumbling and so knew people were trapped. He had managed to get to the alleyway and caught five people who jumped out of the building, before helping to rescue the man under the table.¹⁷ Now he was holding up the roof, which was beginning to crumble. About three or four people came out with General Carlton. The last man to emerge, Commander Powell, was “chased by a huge flame and smoke, and that was actually the roof letting go.”¹⁷

The rescued man was Jerry Henson, a retired naval aviator, who coordinated counter-drug operations and emergency relief from an office on the first floor in the C-ring in the Navy Command Center.^{3(p49)} Rescuers carried Henson to the triage area in the center courtyard and placed him on the grass. “They needed the litter for other people,” Henson recalled. “I’m pretty much looking up and I’m liking the sun.” One of the rescuers was a Navy physician, Lieutenant Commander David Tarantino, who put Henson on oxygen to prevent shock and began to administer intravenous (IV) fluids to prevent dehydration. Henson was indeed lucky; 33 of his coworkers in the Navy Command Center died that day.^{3(p49),17,20,26(pA-26),27(pp21-22)}

While General Carlton, Sergeant Rosenberg, and the rest of the team were helping free Henson, the commander of the dental clinic, Captain William B Durm, took four dentists from the center courtyard and entered the building as well. Accompanied by DPS personnel using flashlights, the group began another quest to find and treat casualties. They explored several rings of the crash area for about 30 minutes. During that time, they helped three or four victims who managed to reach them walk out of the Pentagon. The rescuers stayed in the building quietly listening for the voices of casualties. With smoke depriving them of oxygen, and having heard no voices for 15 minutes, they decided to pull back into the courtyard at about 1015. Captain Durm believed that all the people who could have gotten out were out by that time. The casualties in the courtyard were evacuated to north parking in small orange construction vehicles that resembled golf carts with a flat bed on one end. From there ambulances could take them to local hospitals for further treatment.²¹

Back in the DiLorenzo Clinic, Pentagon employees with medical training continued to volunteer. One of the volunteer physicians was the Joint Staff’s deputy director for medical readiness, Rear Admiral John Mateczun, who went to DiLorenzo right after the explosion to offer his services as a physician. He received a blue vest and supplies and was sent to the clinic’s treatment area, where he helped care for severely burned victims. He found ambulatory cases with flash and blast injuries but few with injuries from glass. Later, he would learn that the windows in the refurbished crash area that had been coated with Kevlar had kept flying glass from blowing into the building.²⁸

Lieutenant Colonel Brian Douglas Birdwell, the executive officer of military systems to the deputy assistant chief of staff for installation management, was in his office on the second floor of the E-ring on the morning of 9/11. He had been in

the newly renovated wedge since 24 June 2001. His office was on the edge of the wedge, and the staircase was located outside and slightly to the left of his door. At about 0930, he walked to the restroom through the path where the plane would strike. Returning to his office, he had just taken a few steps when the jetliner hit the Pentagon. He heard the sound of an explosion and thought it was a bomb. Everything turned dark, and he was thrown to the floor. Struggling to get to his feet and find his way out, he tasted fuel in his mouth, and realized he was on fire. Knowing he could not find his way out of the building or to safety within it, he wrestled with panic as well as the pain of his burns. He lost his orientation and could not figure out which way to turn to exit. He thought he was dying. His life did not flash before his eyes, but the people he loved did. He thought he would never again say goodbye to his wife Mel or his son Matthew before going to work. He prayed and then “did what military folks aren’t trained to do, and that’s I gave up.” He waited “for whatever that experience is of the soul leaving the body my eyes still closed.”²⁹

While Birdwell waited for death, the sprinkler system came on, and extinguished the fire. Lying on the floor, he felt water around him. He also began to see some light down the corridor. He realized the direction he needed to go to get to the A-ring and the center courtyard. He struggled to his feet and stumbled down the hallway, having lost his balance from the concussion to his inner ear caused by the explosion. He could see two men in the corridor and staggered toward them, but he fell before reaching them. By then he had third-degree burns to his arms and second-degree burns to his back and legs. His face was also burned. He had been hit by a fireball.²⁹

One of the men he saw in the distance was Colonel John Baxter, commander of the Air Force Flight Medicine Clinic. Baxter and his Flight Clinic response team—composed of Master Sergeant Paul Lirette, Technical Sergeant Michael E Johnson, Staff Sergeant Charles Hawkins, aeromedical technician Evandra Spruell, and medical technician Lawrence Skummer—had run to the smoke-filled 5th corridor of the second floor to look for survivors after someone mentioned that casualties were there. They had picked up two trauma packs (functionally packed to treat traumatic injuries to airway, breathing, and circulation, containing medical supplies such as bandages and IV tubes) before they left the clinic. The first victim they encountered in the 5th corridor was Birdwell. He smelled of jet fuel, and Baxter thought he had been lying in a pool of jet fuel. The team went immediately into their advanced trauma life support routine and began assessing the patient. They could see that he was badly burned, in great pain, and suffering from inhalation problems and blast injuries. They started an intravenous drip, cut off part of his clothing, bandaged his wounds, and administered morphine. They placed a tag on his toe that gave his name, injuries, and medications. Baxter attributed Birdwell’s survival to the sprinklers that had been installed in the now destroyed wedge.^{8,29}

Birdwell was placed on a stretcher and carried through the B-ring and down the staircase out to safety in the courtyard. As he lay on the ground at the triage

area, he shook with the onset of shock. He was burned over 60% of his body. The only parts of his body that had gone unscorched were his thighs, the front of his torso, and his feet. He kept telling people to call his wife and let her know he was alive. He repeated his telephone number to anyone who would listen. The medics moved him on one of their orange construction carts to north parking, where he was placed in a commandeered long-bed pickup truck and taken to Georgetown University Hospital in Washington.²⁹

While Birdwell was receiving treatment in the courtyard, Baxter, his coworkers, and other volunteers continued to look for more casualties in the building. Master Sergeant Lirette had split earlier from the group to help Carlton and others rescue people from a burning room with a collapsed ceiling. Later, Staff Sergeant Hawkins also left the group to help Carlton set up triage in the center courtyard. The remaining Baxter group examined sections closest to the impact area on each floor from the second to the fifth. On the second floor, they found an injured woman with face, arm, and leg lacerations lying on the floor. Baxter assessed her, started an IV, and left someone with her to wait for a stretcher. He went on to assess a few more patients, as hundreds of people continued to stream out of the Pentagon and into the center courtyard. Some people repeated warnings of another plane heading for the Pentagon and the need to evacuate the building. Baxter and his team instead ran down the corridors of the fifth, fourth, and third floors looking for more casualties. The smoke became asphyxiating, and visibility was poor. They could see only the baseboard and a small area of floor. Coughing and with eyes burning, they carried their equipment through the halls. Finding no more victims, they went down to the first floor and out into the courtyard, where they assessed and treated patients lying on the ground.⁸

INITIAL MEDICAL RESPONSE: WEST AND SOUTH SIDES

Near where the airliner would enter the Pentagon, Lieutenant Colonel Patricia Horoho, an assistant deputy for personnel and health management affairs in the Office of the Assistant Secretary of the Army for Manpower and Reserve Affairs, and an Army nurse, had been at work in her office, in the E-ring, on the second floor, at the 5th corridor, when someone in the hallway announced that a plane had hit the World Trade Center. She walked across the hall into the Strategic Planning Cell, where there was a television, and saw the second jetliner hit the towers. Colonel Horoho said, "We're going to be next." Certain that the Pentagon would be attacked, she remained calm. She walked back to her office, and as she entered the doorway, she heard a loud boom and felt the building shake. She began following others evacuating the Pentagon by exiting through the mall entrance between corridors 6 and 7, but realized she needed to be near the crash site to provide help. After letting a colleague know she was unharmed, Colonel Horoho moved to the front of the Pentagon to help care for patients. "This is where . . . I think Green Ramp came into play," she recalled.³⁰

Colonel Horoho was born and raised at Fort Bragg, North Carolina, where her father was a member of the 82d Airborne Division. She joined the Army as a

nurse in 1983. She was serving as chief emergency room nurse at Fort Bragg's Womack Army Hospital in March 1994, when a collision between two military aircraft at adjacent Pope Air Force Base resulted in 24 deaths and approximately 130 injuries, mostly burns, to 82d Airborne troops practicing pre-jump exercises on an area of the base known as Green Ramp.³¹ On the morning of 9/11, she was the right person, in the right place, at the right time. By experience and training—burn care and critical incident stress debriefings were her specialties—she was well suited for the job. Personal characteristics of confidence, strength, bravery, spirituality, hard work, and the ability to command contributed to her success.

When Colonel Horoho reached the west side of the Pentagon, she saw the huge gap that had been blown out of the middle section of the building. She did not see a fireball, just a lot of smoke and lots of debris, including aircraft parts strewn over the area. She went up to the building to go in, and saw the walking wounded, who were dazed, injured, burned, cut, or suffering smoke inhalation, coming down the steps. She pointed them in the direction of a grassy area with a tree for shade near the guardrail in front of the crash site, which she knew would work for a triage area. She received help from an off-duty paramedic from Alexandria, Virginia, Michael Cahill, who was near the Pentagon at the time of the attack, and from Pentagon employees who had just brought people out of the building, and who now were instructing the injured to go to the triage sector. Once the system was set for proceeding to the treatment zone, Colonel Horoho left the impact area and went to the guardrail to assess injuries.^{30,32}

Volunteers continued to offer help. A man in a car had an aid bag and gave it to her. At her request, two generals opened the bag and pulled out IV equipment. She taught three nearby civilians how to prepare IV tubes, which they began doing. Brigadier General William G Webster, director of training, Office of the Deputy Chief of Staff, G-3, US Army, his trousers smoldering and his shoes singed, gave her his belt to use as a tourniquet for an IV. Someone found surgical gloves, which could also be used as tourniquets. Defense Secretary Donald Rumsfeld helped move a patient on a gurney toward triage before returning to the north side of the building.³⁰

About this time, retired Navy antiterrorist specialist Malcolm Nance, who had been on the road near the Pentagon when the attack occurred, rushed to the building to help. He encountered Horoho, whom he described as “directing people and moving about decisively, with a purpose that commanded my full attention.” In shorts and shirt, he volunteered his services and spent the rest of the day under her command. Nance, who had seen action in Beirut, Somalia, and Kuwait, compared the Pentagon that morning to a battlefield. “Troops were assembling [firemen had just arrived from Arlington; there were military and civilian Pentagon employees and policemen], equipment was being mobilized, and people were dying.”³³

I ran up to her and the row of victims lining a guard rail. Victims were still stumbling out of the building's north door on the West ring. Some people were being carried out and laid in front of the tree next to the only two ambulances that had just arrived. I forgot I was retired and shouted to her “I'm a Senior Chief. What do you need?” I asked. “OK! Great! This is the provisional triage until we can get an evacuation point up!” she responded. “I need to move my

victims out of here! Get some people moving to act as stretcher bearers now! There are more victims inside! We've got to get to them too!" In 20 years of military service I had only seen the level of confidence and cool she exuded from Delta troopers and SEALs. At the Battle of the Pentagon, this woman was the commanding officer. It was plain to see that she had badly lost a round to the enemy, but was determined to win the battle.³³

Nance realized help was needed in transporting victims and decided to act as Horoho's executive officer. To find volunteers to serve as rescuers and litter bearers, Nance, with the help of a marine sergeant and a lance corporal, went to a crowd of military personnel who had evacuated the building and were now standing by the road gazing in horror and disbelief at the partially destroyed Pentagon. He literally ordered them to step forward. Used to hearing and following orders, members of the Army, Navy, and Air Force snapped out of their initial shock and responded quickly and affirmatively. "Amazingly more than 200 enlisted personnel and officers ran toward [Nance] and started forming ranks."³³ Anxious to help in any way they could, they dropped bags, briefcases, everything in their hands and prepared to be rescuers and stretcher bearers.³³

Nance, the two marines, and several of the military volunteers moved toward the northwest door with the intent of entering the building and searching for casualties. On the stairwell to the door, they saw an Army colonel, an Army sergeant, and Lieutenant General John Van Alstyne, deputy assistant secretary of defense for military personnel, emerge from the door with the last of the ambulatory victims. The rescuers wanted to reenter the building, but by this time thick black smoke was billowing out of the northwest door. One of the recently arrived firefighters had just gone into the building and had come out "gagging."³³

Nance rejoined Horoho, who was standing in stocking feet 30 feet from the burning helicopter pad, scanning the crash site and windows for victims. The area was filled with shrapnel-like pieces of aircraft. A part of the fuselage lay at her feet, and the red letter "C" from the American Airlines logo on the side of the plane was nearby. Focused on her mission, she was unaware she had kicked off her heels. At Nance's urging, she put her shoes back on. When she was sure no more victims were in the impact area, she asked Nance to assemble the stretcher bearers by the northwest door and prepare to assess any casualties that might appear. She then "stuck her command finger in [Nance's] face and said: 'Listen to me Senior Chief! See that tree? I want victims put in this order: green [ambulatory patients], yellow [serious non-life-threatening injury], red [life-threatening injury]! Put dead bodies against that wall. Do you understand?'" There was no question about who ran this crash site," Nance said, "so I prepared for the bad part, bringing out the dead." During those first critical 4 minutes, Horoho ran the medical response on the Pentagon battlefield.³³

While Colonel Horoho and the volunteers expanded their efforts to assess the injured, formed litter teams, and treated casualties on the west side of the Pentagon, more Arlington County Fire Department's officers, firefighting units, and EMS teams arrived on the scene. The Arlington County Fire Department members had sped to the vicinity of the smoke plume after the crew of Engine 101, traveling to a training session in Crystal City, Virginia, reported to the County Emergency

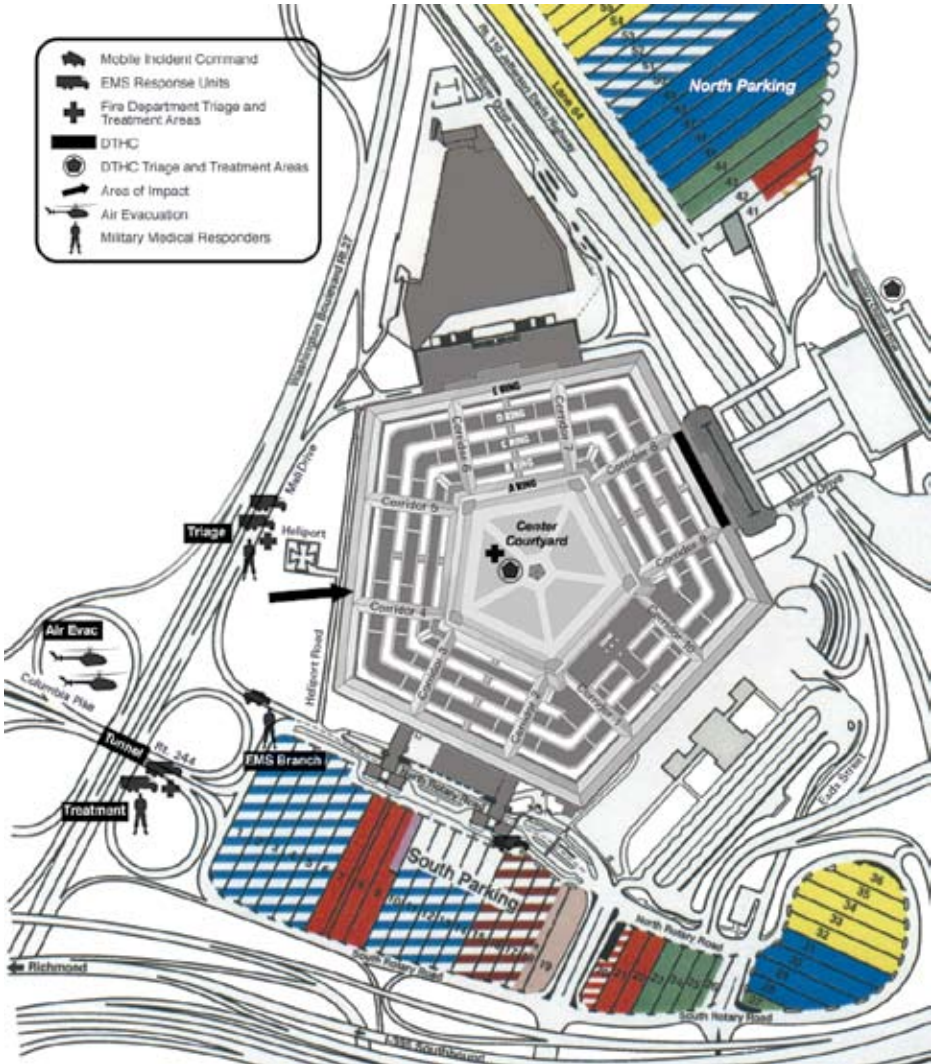
Communications Center that it had seen a plane descend steeply and disappear from view followed by an explosion. Captain Chuck Gibbs, an Arlington training officer, reached the Pentagon at 0940, 2 minutes after the attack. He was followed 1 minute later by Battalion Chief Bob Cornwell, a 35-year veteran firefighter, who assumed temporary incident command. Arlington Truck 105 also appeared at 0941 and began fire suppression activity. Its medical personnel started treating casualties. Captain Edward Blunt, the fire department's EMS officer, arrived at 0942 and took charge of the medical units present. Unaware of the patients in the center courtyard and of the DiLorenzo Clinic's activities involving patient disposition, Blunt did not immediately send EMS personnel there.^{2(ppA-5,A-7)}

Captain Blunt called for a main treatment area to be established in a field adjacent to Washington Boulevard (Route 27) and designated Captain Alan Dorn as triage officer. The plan was to establish a main treatment and staging area near the bridge overpass at a traffic circle close to Route 27 and Columbia Pike (opposite Pentagon corridors 3 and 4). The highway had been closed, so it was easy to place medical assets there. The forward assessment area would be near Colonel Horoho's already established triage area near the heliport and opposite the crash site. Horoho's group and EMS personnel would work together in triaging patients. The main treatment and staging area would include the three triage sectors (red, or immediate; yellow, or delayed; and green, or minor). A yellow tarmac and flag was to identify this central area. According to existent contingency planning, Captain Dorn would organize the military volunteers and other responders, while Captain Blunt would handle forward assessment of casualties.^{2(ppA-7,A-12,A-13)}

Before the plan had a chance to materialize, victims and their helpers, confused, in shock, and unaware where medical help was located, indiscriminately used private vehicles to get to hospitals, without knowing which hospital was best equipped to treat their injuries.³⁴

As the Arlington Fire Department's EMS units began treating casualties and setting up the triage areas, Assistant Fire Chief for Operations James Schwartz arrived within 10 minutes of the crash and assumed primary command of both military and civilian personnel, regardless of rank, and of all agencies during the fire and rescue phase of the operation at the Pentagon. For operations purposes, he established four divisions: (1) the fire suppression branch, (2) the river division, (3) the EMS division, and (4) the rings A-to-E division. Chief Schwartz assigned Battalion Chief Cornwell to firefighting duties inside the building; made Captain Gibbs head of the river division, and sent Arlington Battalion Fire Chief Smith to the center courtyard to begin fire suppression.

Because local, state, and federal agencies with intersecting jurisdictions responded to the emergency, the incident command system, "a formalized management structure for emergency response," was evoked in the Washington, DC, area on 9/11. This system allowed multiple agencies to be "generally effective" while avoiding jurisdictional complications.^{10(p314)} The many agencies that responded immediately to the attack included the Military District of Washington; the Fort Myer Fire Department; county and District of Columbia fire and police departments; the Virginia State Police; the Virginia Department of Emergency



Early triage and treatment sites. DTHC: DiLorenzo Tricare Health Clinic; EMS: emergency medical services.
Graphic by Annita Ferencz, Office of Medical History, Office of the Surgeon General, US Army, March 2010.

Management; a National Medical Response Team (made up of professionals from many public safety organizations around the nation’s capital); the Bureau of Alcohol, Tobacco, and Firearms; the Metropolitan Washington Airports Authority; the Ronald Reagan Washington National Airport Fire Department; the FBI; and FEMA.^{10(p314)}

Because the terrorist attack made the Pentagon a crime scene, which required

the presence of the FBI, Chief Schwartz worked closely with Special Agent Chris Combs, the FBI's National Capital Response Squad's fire liaison, who arrived shortly after Schwartz. Combs served as the FBI's representative to the incident commander on 9/11. Chief Schwartz and Agent Combs coordinated efforts with Major General George Wheldon, the on-site military commander, and with Major General James Jackson of the Military District of Washington, which had responsibility for the defense of the national capital region, because the Pentagon was a DoD building with its own law enforcement organization (the DPS) and its own fire department (the Fort Myer Fire Department, which staffed the fire station at the heliport). The FBI on-scene commander (Combs), the on-site military commander (Wheldon), and the DoD representative (Jackson) respected the command primacy of the Arlington Fire Department's incident commander (Schwartz) during the fire and rescue phase of the operation, and placed their formidable resources at his disposal.^{2(ppA-6,A-7,A-20),10(p314)}

In the first 12 minutes after the attack, civilian medical assets on site increased substantially. At 0943, the Metropolitan Washington Airports Authority responded with considerable resources, including two mutual-aid EMS units. Arlington County had mutual-aid agreements with its neighbors, Ronald Reagan Washington National Airport, the city of Alexandria, Fairfax County, and the District of Columbia. All of those fire and rescue departments sent EMS units to the Pentagon. By 0950, six Arlington medical units had arrived and organized in the south parking lot before being called forward to the EMS section on Route 27. Two reserve Arlington medical units soon followed. Within those 12 minutes, most of the Arlington Fire Department's staff medical personnel were on duty at the Pentagon, and several metropolitan area medical facilities were ready for the day's challenge.^{2(pA-7)} The Arlington Emergency Communications Center radioed Captain Blunt that three metropolitan area hospitals—Virginia Hospital Center (in Arlington), Inova Fairfax Hospital (in Fairfax County), and Washington Hospital Center (in Washington, DC)—were ready to receive casualties.

At approximately 0955, Arlington County Assistant Chief for Technical Support John White arrived at the scene. Commander Schwartz put him in charge of the EMS branch and told him what Captain Dorn and Captain Blunt had already accomplished. White directed Dorn to continue making preparations for casualties and to use the six EMS medical units already setting up along Route 27.^{2(pA-13)}

During the first crucial half hour, military and civilian medical personnel worked together, shared resources, and quickly became dependent upon one another. Military medical teams with civilians provided major casualty care. They evaluated casualties for severity, marked their points of injury, and started IV fluids. Burn treatment consisted of maintaining an airway, treatment for shock, and evacuation as soon as possible. EMS personnel provided IV equipment, oxygen, and ambulances to move the severely injured to treatment centers. Military participants knew from their mass casualty exercises that civilians were in charge during a fire and rescue operation and readily took direction from EMS officers when evaluating, treating, and evacuating the wounded.^{30,35}

Nonmedical volunteers helped with the movement of patients. Malcolm Nance



Volunteer stretcher-bearers line up along the guardrail.
Photograph: Public Affairs, Office of the Surgeon General, US Army.

divided up some 200 military volunteer litter bearers into the same teams of four and provided them with extra backboards from the arriving civilian ambulances. They then evacuated the injured who had already received medical evaluations to the safety of ambulance areas. Indeed, they put their first six patients on board two civilian ambulances within the first half hour of the crash.³³

During this time period, medical personnel on the west side of the Pentagon treated about two dozen major injuries. However, the majority of the wounded had minor injuries and walked around for a while before seeking treatment. Most of those who survived the attack had escaped the building within the first 30 minutes.^{30,35}

As a result of a meeting of chaplains in the Pentagon early on the morning of 9/11, about 32 chaplains responded to the tragedy. They represented many faiths and ranks from two-star general to captain. “The emotional support [was] just as important as the medical support that we [were] providing” said Colonel Horoho, speaking of the chaplains’ contribution.³⁰

Members of the Rader Army Health Clinic at Fort Myer also provided help. After learning that a plane commandeered by terrorists had hit the Pentagon, Colonel John Frederick Roser Jr, Rader’s commander, placed qualified personnel in charge of the clinic and left Fort Myer for the Pentagon. He took along five staff members: Colonel (Retired) Duong Nguyen, a family practice physician and former commander of the Rader Clinic; Dr Ron Bowers, an orthopaedic surgeon; Major Kent Weathers, an anesthesiologist; Dr Mike Hammer, a general medicine physician; and Dr Ernie Rafey, a family practice physician. They started out on foot, running through Henderson Hall and out onto Washington Boulevard. There, they could see the burning Pentagon, about 1.25 miles away. As they continued down hill toward the building, they saw sheared-off light poles and debris from the plane, including a wing on the ground. About three-quarters of the way to their objective, they commandeered a van, which brought them to the Pentagon.³⁶

Upon arrival, they examined some ambulatory patients with abrasions and punctures to the hands and arms and then moved on to the crash site, where the wedge was burning but had yet to collapse. After a futile attempt to rescue the

injured from inside the building, they got out because the structure was unstable. When someone called out that doctors were needed in the staging area, they rushed to the yellow tarmac and flag near the Columbia Pike Bridge overpass and began examining patients. They were working with one of the injured when everyone was told to move to the tunnel under Columbia Pike because of a threat of another attack.^{36,37}

Rumors of more planes approaching the Pentagon were frequent on 9/11. That concern plus fear that the building might collapse impelled Fire Chief Schwartz, in consultation with the FBI, to order everyone away from the building to a safer location. All the triage areas moved at least three times that day because of alarms over incoming planes or structural soundness. Each move required evacuation of the injured, collection of scattered equipment, and the reestablishment of the effort someplace else. The first evacuation occurred at 0955 when Captain Gibbs, as head of the river division, ordered everyone to move away from the impact area because of the danger of structural collapse. Part of the impact area fell 2 minutes later. Medical responders and volunteers carried patients and equipment back to the treatment area at the traffic circle on Washington Boulevard and Columbia Pike. Within minutes, the FBI told Chief Schwartz of another hijacked plane, about 20 minutes out, on course toward the Pentagon. This plane was United Airlines Flight 93, which crashed about 65 miles directly southeast of Pittsburgh, Pennsylvania, at 1003:11. At 1015, Chief Schwartz ordered a complete evacuation of the Pentagon crash site. Medical responders loaded patients onto backboards and ran them to the tunnel under the Columbia Pike overpass, about 300 yards from the original triage area. The four medical evacuation helicopters on site also moved away from the Pentagon to a less dangerous area. A wave of ambulance evacuations to area hospitals occurred shortly thereafter.^{2(pA-13),10(pp33,315),14,35}

After the relocation to the tunnel area, military medical personnel set up a new triage area, establishing the immediate, delayed, and minimal coded sections using color coding material the EMS personnel brought with them. They decided not to use the expectant designation, which is used when casualties cannot be saved or when all available assets are insufficient for the numbers of casualties. “Expectant” does not mean “won’t receive treatment.” Triage is prioritizing. On 9/11, responders wanted to expend all of their assets in saving lives. They set up the immediate area, color-coded red, on the center island of the tunnel; the delay area, color-coded yellow, to the rear behind the red area; and the green or minimal area was located outside. It was a safe and secure place, cool and out of the sun, and it had good ventilation because a wind blew away any smoke that entered.^{30,35}

Outside the tunnel, emergency trucks and buses were positioned to keep them from blocking a temporary helicopter landing zone located about 150 feet away. Air Force Major Mike Moore, who had triage and disaster management training, commandeered some buses to be used as rest areas and bathroom facilities. At this time, Colonel Horoho teamed up with Dr Jim Vafier, an Inova Alexandria Hospital emergency physician who had accompanied an EMS unit to the Pentagon. Vafier was used to working with trauma nurses and collaborated well with Colonel Horoho. Together they persuaded the Arlington EMS teams to move their



Inside the make-shift hospital in the tunnel under Columbia Pike, medical personnel prepare to receive casualties.

Photograph: Public Affairs: Office of the Surgeon General, US Army.

triage site and to join the one set up by Colonel Horoho in the tunnel. From then on, the EMS and the military joined forces in establishing field hospital sites at the Pentagon. At this time, Arlington County Assistant Chief White designated Dr Vafier as medical commander of the response on the ground and appointed Colonel Horoho as Vafier's co-medical commander. Soon, Vafier received an orange vest printed with the words "command physician."^{12,30,33,35,38}

Horoho and Vafier were joined by Sergeant Sepulveda, who had assisted in the rescue of several people from the burning building, including a baby he at first had



Emergency ambulances, trucks, and buses are lined up outside the tunnel hospital, and a safe distance from a temporary helicopter-landing zone.

Photograph: Public Affairs, Office of the Surgeon General, US Army.

thought was a bunch of rags. Sergeant Sepulveda's experience at the Beirut bombing and as a medic in Vietnam helped him to respond well to the tragedy. "His assistance was invaluable," recalled Colonel Horoho. Vafier called his performance "superb." Vafier, Horoho, and Sepulveda worked as a team, creating the essential command structure and organization. They were aided by Navy Captain John P Feerick, a reserve neurologist, who served at the Navy's Bureau of Medicine and Surgery, and who volunteered his services after evacuating from the Pentagon. Vafier and Feerick had known each other as undergraduates. Vafier put Feerick in charge of medical supplies and equipment in the tunnel. The team shared ideas and coordinated activities with EMS officers and with Chief Schwartz, who wore a yellow coat that made him stand out.^{12,31,35}

Colonel Horoho and Dr Vafier, with the assistance of Nance, created medical teams from the many skilled volunteers who offered them their services. The group ranged from physicians, to nurses, to paramedics, to licensed practical nurses, to someone who knew cardiopulmonary resuscitation, to anyone with any medical training. These teams helped treat the injured, nearly all of whom were out of the building and on the ground, and helped prepare patients for evacuation to local hospitals. Without identifiable clothing, the non-EMS medical responders wore silver tape on their arms, borrowed from the fire department in order to be recognizable as medics in all the chaos. Nance identified leaders to organize and train the medical and litter teams. A registered nurse, for example, taught others how to prime IV tubings and to take vital signs. Litter bearers learned how to place a patient on the litter and the proper commands to use. Both groups were sent to where they were most needed.^{12,30,35}

Medical responders also created an overflow yellow staging area team headed by Dr Nguyen, who chose as his assistant Navy Reserve Captain Stephen Frost, a gastroenterologist and colleague of Captain Feerick's at the Navy Bureau of Medicine and Surgery. Frost, who had escaped with Feerick from the Pentagon, put great effort into setting up the yellow staging area but asked Nguyen to head the team because he outranked Frost. This team wore yellow ribbons as a way of identification.^{35,37}

While waiting for the all-clear signal to leave the tunnel, medical participants sorted supplies they had earlier requested by cell phone and received from the Navy Medical Center in Bethesda, Maryland, and Walter Reed. When vans from Bethesda started to arrive, the responders in the tunnel formed four-person teams (with one medical staff member on each) that unloaded the vehicles of IV replacement packs, bandages, equipment to treat breathing problems, and other items. They laid out all the supplies functionally and logically to make the reestablishment of a triage area outside the tunnel easier once the air threat was over.³⁰

While people gathered in the tunnel waiting for the all clear, Lieutenant Colonel Erckenbrack and others undertook the last rescue operation of a victim from inside the building. Erckenbrack was standing in the underpass with about 25 other people, when he and a doctor near him heard someone call for medical help. Erckenbrack picked up a pair of gloves and a respirator mask, and he and the doctor ran outside. Finding no one there, they continued toward the Pentagon, entered

the building, and went up to a second floor corridor. The hallway was filled with smoke down to the hip level, and one wall was leaning against the crash site. As they walked down the passage, they heard two screams, one from an office on the left and one from an office on the right. Erckenbrack responded to the scream on the left, and the doctor responded to the scream on the right. After a struggle, Erckenbrack managed to open the door and black smoke poured out. He got down on his knees, crawled into the outer office, and saw someone in an inner office “completely on fire.” Then this person

came out. He fell through the door and collapsed in the outer office. While he was in the outer office, I crawled over to him and found a coat that had been hanging there for some reason. I grabbed the coat and put it on him and tried to put the fire out. The guy was on fire. He was just on fire from head to toe completely. It had to be jet fuel . . . Eventually I got it out and the guy, believe it or not, was still conscious . . . I got close to him to see if he was still alive and he was barely breathing. One of the things that he was saying was that we had to get help to the other people. He just kept on saying that.¹⁵

Erckenbrack and the doctor assumed that those people were in an inner office that was engulfed in flames.

So I grabbed the guy and put his arms over his head and grabbed his forearms and tried to pull him out of the room. As I tried to do that, he was burnt so bad that where I grabbed his skin it pulled away from his forearms. His shirt was still intact so I grabbed the back of his shirt and we started low crawling out of his office and into the hallway. We just kept moving up the hallway until I was halfway up . . . The firemen showed up with a paramedic. Between us we got him out of the building and got him outside and got an IV into him.”¹⁵

This man was the last victim to leave the Pentagon. He was evacuated to a local hospital and lived.

Meanwhile, Erckenbrack and three others grabbed a nearby stretcher and went back into the building. While they were looking for casualties, they reached a breezeway between the B- and C-rings. Erckenbrack looked to his left and saw a huge hole that the plane’s landing gear had made in the C-ring wall when the plane came to a stop against the back wall of the B-ring. Nearby in the breezeway was a “four or five-foot high [by] ten-foot wide pile of debris . . . It was like somebody had taken the plane and turned it into a syringe and everything that had been in the plane moving at 300 miles an hour had come to an immediate stop and shot forward.” Part of the debris was burning. It included airplane parts, people, plastic, brick, and other materials.¹⁵

Because Erckenbrack was the only one with a respirator, he went into the hole in the backside of the C-ring looking for survivors. The smoke was so thick it hurt his eyes, so he crawled on the floor often with his eyes shut just listening for the sounds of people in need. But all he could hear was the crackle of electrical wires crossing one another. Finding no one alive, he “shimmied back out of” the hole.¹⁵

While this last desperate effort to find more live victims was underway, Chief White, in coordination with EMS officers and military medical personnel at the underpass, made plans to reestablish operations at the crash site after the all clear.

Captain Blunt was to take command and Captain Dorn was to serve as his deputy. Chief Glen Butler of Metropolitan Washington Airports Authority would be treatment officer, and paramedic firefighter David Herr would be transportation and disposition officer. Chief White placed Dr Vafier in charge of forward assessment, which was located on the pavement between corridors 3 and 4. Firefighters were to take victims to military stretcher bearers, who were to carry them to the forward assessment area for injury evaluation and assignment to appropriate treatment zones.^{2(pA-14)}

CONTINUING THE RESPONSE: DiLORENZO TRICARE HEALTH CLINIC

Medical responders on the west side of the Pentagon had no idea what was going on in the center courtyard, which was cut off from their view. By 1010, General Carlton, who had returned to the courtyard after his rescue efforts, took command from Captain Glidewell, who was pleased to relinquish it. She and the medical teams continued to treat patients in the holding area in the courtyard. Other rescuers, such as Colonel Baxter, Colonel Durm, and Sergeant Rosenberg, also returned to the center courtyard to offer assistance. They were there only a short time when they received orders at 1015 to evacuate the building because of an approaching aircraft. Medical personnel and rescuers began gathering up supplies and moving patients out of the courtyard through corridor 8 to the north parking area for evacuation to local hospitals. Critical patients needed to be evacuated, but there was a shortage of stretchers. Rescuers carried a woman who had jumped out a window and broken her leg to north parking on a door. A woman with an inhalation injury who was having difficulty breathing was transported in an orange construction vehicle. The number of critical patients with breathing problems was General Carlton's "biggest concern." He feared he would lose them because he lacked equipment in the central courtyard to keep their airways open. However, once the patients got to north parking, doctors were waiting with intubation equipment to open airways. Shortages of morphine, however, made this procedure almost impossible, and patients had to wait to have their airways opened at the hospital. Captain Glidewell was one of the last people to leave the center courtyard. Assured that no more survivors were coming out of the building, she and her team exited through A & E Drive, an ambulance and evacuation route that ran along the outside of the Pentagon close to corridor 8.^{17,19}

In leaving the DiLorenzo Clinic, after the warning about the second plane, Major Brown asked her people to grab supplies as they went out. They broke into the "omnicels," a computerized supply system, because the medics who knew the codes to open the supply cupboards were at the crash site. DiLorenzo staff threw supplies into blankets and moved outside to north parking, evacuating patients as they went.⁶

At north parking many patients went to the casualty collection point outside the Pentagon Officers' Athletic Club on Boundary Channel Drive. DiLorenzo staff had already established red, yellow, and black triage zones there. Medical personnel, wearing blue vests, assessed the patients, obtained equipment for treat-

ment, and reassessed them for evacuation. Physicians with intubation equipment stood ready to accompany those with compromised airways to local hospitals.

DiLorenzo staff carried out their work on the north side of the Pentagon with little interaction with the rescue organizations on the west and south sides. Normal procedure was to go through DPS for contact with EMS units, but after the police evacuated the building, the clinic had broken communication and had no response from them regarding air or ground evacuation assets, especially after the call for a second evacuation due to an incoming plane report. This lack of coordination between the DiLorenzo staff and EMS units during the first hour resulted in civilian ambulances going to the crash site, where there was a tremendous need, but on the north side only two ambulances, from Walter Reed, were left to evacuate dozens of seriously injured patients. Therefore, military medical personnel, including Walter Reed emergency physician Lieutenant Colonel Edward Lucci, who came with the ambulances and stayed to help coordinate the stabilization and evacuation of critical patients, commandeered government and civilian vehicles to serve as ambulances. At one point, to get people's attention and for a better overview of the situation, Major Brown stood on top of a car and shouted, "Anybody with an SUV, or a van . . . if you've got your keys, bring [them] here." As cars and drivers came forward, DiLorenzo staff and Colonel Lucci moved quickly to place litter patients and a doctor or medic in each vehicle, which then departed to a local hospital.^{2(pB-6),6,8,15,39,40}

After the all-clear at 1038, when all the patients in the north parking area had been evacuated and fears of a second plane had disappeared, Major Brown focused on creating more medical teams, collecting medical supplies, and moving back to the center courtyard in order to reestablish a triage area. She was aided by General Carlton, Sergeant Charles Hawkins from the Flight Medicine Clinic, Rear Admiral Mateczun, and her own DiLorenzo staff. They and other volunteers prepared to treat patients, but no more came out of the building.⁶

Corridors 3, 4 and 5 collapsed 50 minutes after the attack. The walls had stood long enough for survivors to crawl out and for rescue teams, medical personnel, and other individuals to enter and bring out casualties. The corridors lasted that long because of the new construction, the use of steel beams to reinforce weight-bearing columns, and the insertion of Kevlar in the E-ring's outer walls, which strengthened them. The death toll surely would have been much higher but for these new security systems. As it was, although 125 Pentagon workers in the newly renovated wedge were killed on 9/11, 2,500 men and women working nearby were spared.^{3(p139),4(pC2),6}

With no more casualties appearing, medical responders in the center courtyard treated rescue workers for minor injuries and took care of firefighters with smoke inhalation, fatigue, and heat problems. Still hoping for more survivors, medical personnel spent the next several hours organizing their triage area, obtaining more equipment, and preparing for any eventuality. General Carlton, Major Brown, Captain Glidewell, Colonel Durm, Sergeant Rosenberg, Admiral Mateczun, Colonel Lucci, and others moved between the center courtyard and the crash site to offer assistance during the afternoon of 9/11. It was frustrating and sad for every-



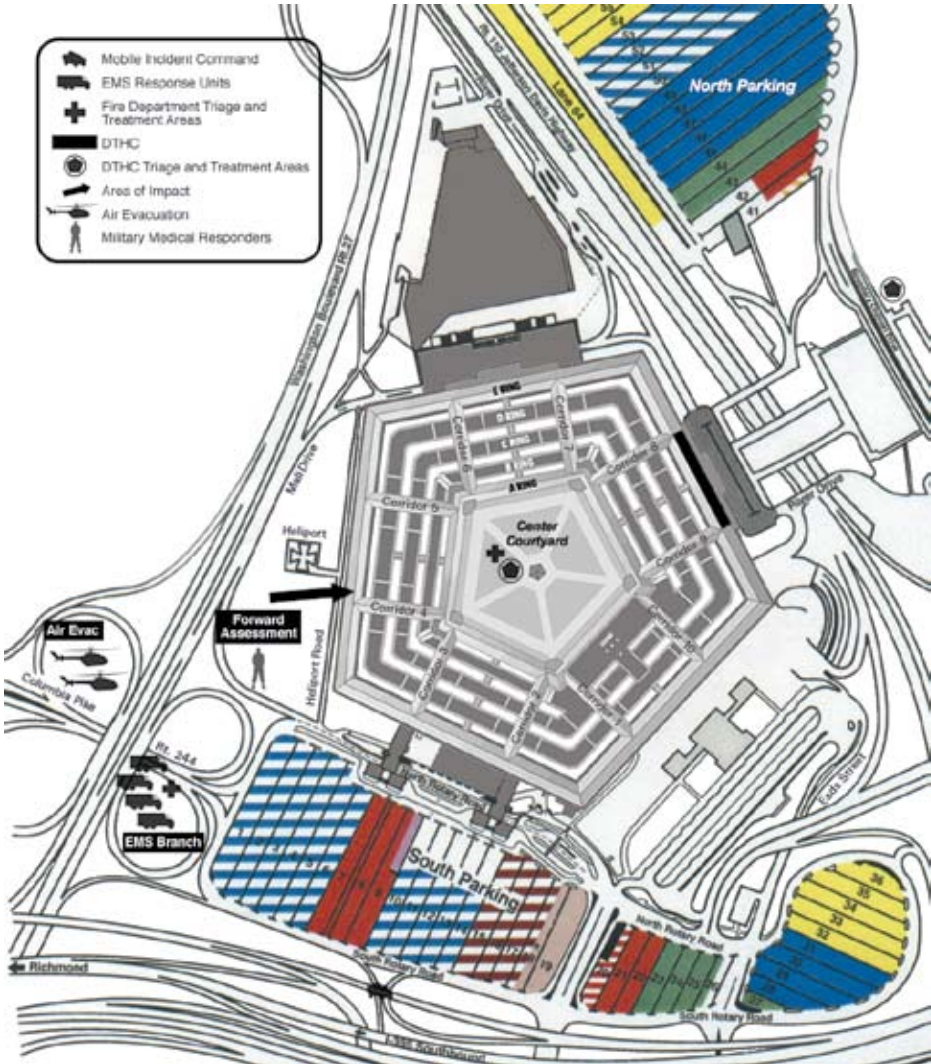
After the all-clear, emergency medical service personnel and military volunteers, their equipment strewn on the lawn near corridors 3 and 4 in the central courtyard, wait for casualties to come out of the building. A van, an ambulance, and a truck that had delivered soft drinks stand nearby. Photograph: Public Affairs, Office of the Surgeon General, US Army.

one not to have more rescued people to care for.^{6,17,19–21}

Major Brown estimated that her medical staff treated eight patients in the clinic. Clinic staff handled about 40 more, half of whom were ambulatory and the rest moderately to severely injured, at north parking. There were also about 50 patients in the center courtyard. Of the latter, 14 were critical cases evacuated to Virginia Hospital Center–Arlington. Severely burned Colonel Birdwell, who was taken to Georgetown University Hospital, was later transferred to the burn unit of the Washington Hospital Center. The highest percentage of injuries were burns because of the huge fireball kindled by jet fuel. Flying debris, such as cement, glass, and engine parts, caused head injuries and fractures. So did the jumps some people risked from second and third story windows.^{2(pB-14),6}

AFTER THE ALL-CLEAR: WEST AND SOUTH SIDES

Following the all-clear at 1038, medical responders on the west side of the Pentagon emerged from the tunnel and returned to the grassy area near the guardrail in front of the Pentagon's west entrance, where they set up operations between and under trees. They returned the red area to the back portion of the guardrail that centered on the crash site, and placed the green zone next to the red area, which made the guardrail a central point. They decided to leave the well-organized yel-



Evacuation, triage, and treatment sites after the all-clear. DTHC: DiLorenzo Tricare Health Clinic; EMS: emergency medical services. Graphic by Annita Ferencz, Office of Medical History, Office of the Surgeon General, US Army, March 2010.

low zone in the tunnel. Captain Feerick turned over responsibility for medical assets there to Captain Frost, who had become yellow team commander when Dr Nguyen left the underpass to help outside. Captain Feerick remained in charge of medical assets outside the tunnel.^{2(pA-1),30,35}

In some respects, there was good coordination of agencies and responders. The Vafier-Horoho team is a good example of excellent teamwork from separate or-

ganizations. But there also was chaos and confusion because the responders were dealing with a disaster, and a disaster, by its very nature, brings with it chaos and confusion. The chaos and confusion of the immediate response, when there were fewer agencies, became worse after the all-clear because a multitude of responders from many agencies and organizations descended on the Pentagon. Agencies with their own chain of command gave orders to the responders. The Arlington Fire Department, which was officially in supreme command, did not want anyone in its way or in harm's way. The FBI was still controlling the security grounds. The Pentagon police and local police had their own agendas. These organizations were telling the medical people not to move here or not to move there or to pull back. The many conflicting orders reached a point where no one knew whose directives to obey. The Vafier-Horoho team had no radios and were unable to communicate with essential personnel at this time. The team also disagreed with EMS personnel over how to reestablish triage. There was confusion about who was in charge of the medical response because Dr Vafier had been made medical commander before the all-clear, yet Chief White had another plan for the all-clear period. With no casualties to care for, the many volunteers meandered about in a disorganized fashion, which added to the chaos. Finally, there were frequent reports of air and bomb threats, which resulted in everyone scrambling away from the building just when they had everything organized.^{12,30}

To reimpose order, the Vafier-Horoho team took a number of steps. They made agreements with the EMS units, the fire chief, and the police to give the medical team the authority to give orders on medical matters. To clarify its knowledge of the situation, the team roamed between the forward assessment area and the guardrail and talked to key people about the medical plan. Sergeant Sepulveda then grabbed a bullhorn and used it to organize groups of litter bearers among the volunteers and to call upon the medically trained to help set up the casualty collecting points and triage areas. By those means, the medical responders were able to reassert their control.^{12,30}

In the end, although the medical command was technically under Arlington County, the operation on the ground at the Pentagon was being run by Dr Vafier, a civilian City of Alexandria medical director, and Colonel Horoho, a US Army nurse. This was a testament to Chief White's flexibility and to the professionalism, determination, and efficiency of Dr Vafier and Colonel Horoho. As command physician, Vafier ran the medical response on the west side for the first 10 hours on 9/11.^{30,33,40,41}

The medical personnel completing the reestablishment of the red section in the central portion of the guardrail opposite the crash site placed an orange flag on top of a fire truck so people could locate the main triage area among the vehicles, debris, equipment, and people in the area. They also positioned a strip of yellow tape from the impact area to the triage zone to make treatment easier to locate. If firefighters found more victims, litter bearers would bring them to this central triage area. There would be no evaluation of victims inside the building or by nonmedical personnel. Either a trauma nurse, a doctor, or someone on their team would decide whether the patient was going to be immediate, delayed, or minimal. By noon, all



After the all-clear, medical personnel and police gather at the triage area under and between the trees by the guardrail in front of the Pentagon's west entrance. A strip of yellow tape stretching from the impact area to the triage zone made for easy location of treatment.

Photograph: Public Affairs, Office of the Surgeon General, US Army.

of the triage areas were functioning and ready to receive patients.³⁰

Across the road beyond the guardrail, about 50 four-person litter teams had been assembled and stood ready to collect and carry victims from the crash site to the treatment areas. Construction debris and the guardrails would have been a problem for the litter bearers had not construction workers who had been renovating the Pentagon been allowed to return to help. The construction workers worked closely with Horoho and Vafier to remove barriers to litter transport, including dismantling construction barriers and sawing through guardrails.³⁰

The medical team wanted to know if there were patients someplace else. They had not been able to communicate with the central courtyard, but by this time Major Brown, who had run around to the impact area to find out for herself what was going on, reassured the team that no more living victims were on the other side of the building or in the courtyard. They also wanted to move the temporary morgue away from the scrutiny of the media. Horoho took Vafier to the military on-site commander, General Wheldon, who not only agreed to move the morgue, but also provided him with the assistance of two aides who would report back to the general what the physician needed. The aides became Vafier's runners, since he and Horoho were still without two-way radios. Communication came down to the least common denominator: the use of runners to obtain and to give information.³⁴

Because of the hope that more victims could be rescued from the building as the

day wore on, additional Arlington and Fairfax EMS teams arrived, bringing with them more equipment and supplies. Duplicate triage zones were established near the guardrail. Later, when it was decided to consolidate the yellow zones, Captain Feerick brought Dr Vafier to the underpass to show him what Captain Frost had created. He “had built himself a fleet hospital down there,” recalled Captain Feerick. “You could have done open heart surgery.”³⁷ The entire area was organized to handle many casualties. Had there been many more survivors, it would have been “the busiest place in town.” Dr Vafier declared after examining the set-up that “There is no way I am going to change this. Leave it as it is.”³⁵ The consolidated triage areas, which were initially quite rudimentary, had become so sophisticated they resembled an outdoor medical center.^{20,34,35}

All told, about 150 medical personnel, including volunteer doctors, nurses, physician assistants, and corpsmen, had responded to the crisis. Those unneeded for casualty care joined 50 to 100 people on the southwest side of the Pentagon who were helping with logistical problems. Dr Vafier, who had received authority over all medical assets, including volunteers, from Chief White, relied heavily on Captain Ferrick, who had already undertaken the mission of coordinating medical personnel and equipment. At Vafier’s request, Feerick kept track of people, equip-



Volunteer litter bearers stood ready to carry victims from the crash site to the treatment area. Photograph: Public Affairs, Office of the Surgeon General, US Army.

ment, and supplies. Ferrick relied on Colonel Craig Urbana, assistant deputy for healthcare policy at the Pentagon, for information about whom to contact for needed items. Urbana also was a source of strength to Ferrick personally. Although uninvolved with patient care, Ferrick had tactical control of the situation with a staff and a chain of command to help. His position was not authorized by any order but received tacit approval of the Arlington Fire Department and the EMS officers.^{12,30,35}

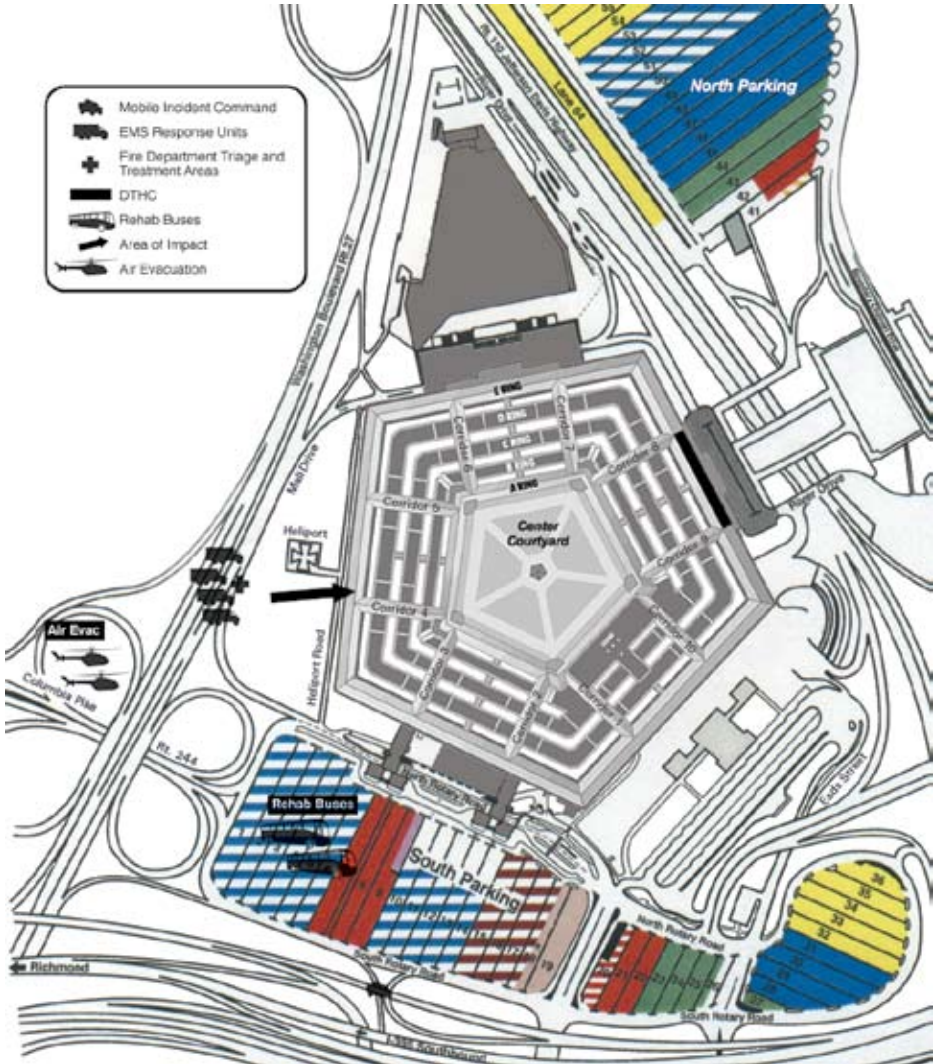
To correct the evacuation problems that occurred earlier in the day, when patients were taken by private vehicles to any hospital regardless of type of injury, the team put into place a system that informed the incident commander who was going to be evacuated, based on levels of severity, and to what hospital, in order to not overwhelm one medical institution. By the time medical personnel got everything set up, however, there were no more victims to take care of, so they shifted their focus to helping rescue personnel.³⁴

TRANSITION TO RECOVERY

While medical personnel established forward treatment areas outside the tunnel and improved medical command and control, more explosions in the Pentagon created another fire-ball and thick black smoke. Even firefighters could not go back into the building. It became evident that no more people would be rescued, and medical personnel would have to prepare to treat workers involved in recovering the dead. That endeavor would require extra personnel for extended hours and more logistical support. Thousands of recovery personnel would need communication, food, tents for shelter, portable toilets, and generators for electricity and lighting. Responders also needed to start planning for future contingencies while taking care of simultaneous current operations. Colonel Horoho and Sergeant Sepulveda went to a roped off section at the crash site where Commander Schwartz, police chief John Jester, fire chief Randy Gray, other key personnel including General Van Alstyne, the deputy assistant secretary of defense for military personnel, and the commanding general, General Wheldon, were standing to discuss the situation.³⁰

General Wheldon took action almost immediately by requiring that General Jackson activate the Military District of Washington, one of 19 commands of the US Army. With headquarters at Fort McNair, the military district included five installations, including Fort Myer, Virginia, the home of the 3d Infantry Regiment. In addition to its combat role in defense of the national capital region, the command was responsible for ceremonial tasks. Jackson provided about 100 soldiers from the 3d Infantry Regiment (the Old Guard) for the recovery operation. Wheldon also made sure there was a contract for portable toilets and obtained large tents for rescue and recovery workers. One tent was to be used for the morgue, one for shelter for personnel, and one for an operations center for Jackson's soldiers, who were to join the recovery effort at 1600. He obtained generators for the morgue, the Red Cross area, and the chaplains' sections because those areas would be open all night.³⁰

Meanwhile, rather than "huddling together [outside] in one place" the medical



Last triage, treatment, and rehabilitation sites. DTHC: DiLorenzo Tricare Health Clinic; EMS: emergency medical services.
 Graphic by Annita Ferencz, Office of Medical History, Office of the Surgeon General, US Army, March 2010.

team situated itself in a blue-and-white domed tent equipped for use as an operations shelter. Chief White, Dr Vafier, Colonel Horoho, and Sergeant Sepulveda used the communication equipment that came with the tent and acquired a blue-print of the Pentagon to help in the rescue and recovery effort.³⁰

Other tents were going up. At about 1300, the Arlington County Fire Depart-



Responders to the tragedy gather near the blue and white domed tent that served as a medical operations center on the west side of the Pentagon on the afternoon of 9/11. An Arlington County ambulance, a bus, and vans are situated nearby.

Photograph: Public Affairs, Office of the Surgeon General, US Army.

ment established a command post tent between two trees opposite the impact site. All organizations used it. The Red Cross placed its tent near the morgue tent and Route 27 in the grassy area on the west side of the building furthest from the crash site. The Red Cross and the chaplains worked together to provide family and emotional support. The marines and the family support effort had their own tents. There was also a tent for decontamination of people who had entered the Pentagon and were exposed to toxic materials produced by the burning plane and building. The Red Cross and the Salvation Army, whose trucks had arrived, also made sure that the rescuers and recovery personnel had food and water.^{30,38}

Local food vendors contributed pallets of water and food. Costco and McDonald's, from the Pentagon City Mall across the highway, established food and water stations. Volunteers from the Salvation Army served pizza, chicken, and coffee in the afternoon. As more tents and trucks followed, the south parking area came to be known as "Camp Unity." By 1300 communications had also improved. Colonel Horoho, Dr Vafier, Sergeant Sepulveda, and Captain Feerick conversed with one another by hand-held radios that Horoho had requested from Walter Reed. The team used code names: Army for Horoho, Navy for Feerick, Doc for Vafier and Air Force or Sarge for Sepulveda. Air Force Major Janet Deltuba, who provided administrative support and did a lot of running for the medical team, used a fifth radio. Later, because cell phone communication often did not work, the Army brought in more hand-held radios for others to use.^{30,38,42,43}

Working closely with Horoho, Vafier, and Sepulveda, Feerick spoke of Horoho as being “everywhere” and doing “everything.” She “did whatever was needed, maintained liaison, and was just a mover and a shaker.” He called Vafier the first on-site command physician: “He was superb. He was excellent; he walked on water. He was the best of the best, providing command support and assistance at all levels in reasonable, effective management.” Sepulveda was “the senior enlisted person on the site who was tireless and invaluable in his efforts to maintain communication and control between the different sites.”³⁵

When the responders’ focus changed from rescue to recovery, command changes occurred. It became clear that medical personnel would switch from evacuating the injured to treating rescuers at about 1300, and at 1315 Battalion Chief James Bonzano relieved Chief White of his responsibility for the EMS branch. (The EMS division would stand down as a unit at 1700 on 13 September, but maintained a presence until the Arlington Fire Department yielded control of the scene to the FBI on 21 September.) By 1330, Chief Schwartz had directed Chief White to establish a logistics section. At 1400, deployed by FEMA, the agency responsible for responding to national disasters, the Fairfax urban search and rescue team arrived at the Pentagon. This group took over the medical response once the fire department officially declared the rescue portion of the operation over. As the



An aerial view of the tents, trucks, and vans of “Camp Unity” on the west side of the Pentagon on the afternoon of 9/11.

Photograph: Public Affairs, Office of the Surgeon General, US Army.

key civilian authorities changed command, they informed Dr Vafier and Colonel Horoho, so that the two could continue to coordinate operations while the new people learned what to do.^{2(ppA-26,A-27),27,30}

At 1400, simultaneously with the arrival of the search and rescue team, the incident commander called for a second full evacuation because of another threat of an unidentified aircraft. Everyone at the crash site scrambled to pack up supplies and to move away from the area. Within a few minutes, the all-clear sounded and they returned.²

By 1500 FEMA personnel from Virginia Task Force 1 were able to establish a base of operations, with tents. Dr Daniel Hanfling of Inova Fairfax Hospital was the medical team manager with full responsibility for ensuring the safety and well-being of the team. He had available DoD medical assets, including a helicopter, and he worked closely with the FBI and its field medics.⁴⁴

With the advice of an architect from the Pentagon, FEMA set up several exit routes to remove victims from the building. Corridor 5 served as one route. Others ran through various tunnels on the ground floor that allowed access by electric cart. Recovery workers would convey the dead or fellow workers who needed extraction to the center courtyard, which still contained a small medical team, or to the guardrail post opposite the crash site, where Vafier and Horoho's team remained. Litter bearers stood ready in both areas to handle casualties.^{30,44}

Meanwhile, construction crews demolished concrete barriers to permit easy access to the Pentagon for police cars, motor bikes, buses and ambulances. FBI personnel and firefighters in heavy gear waited for permission to enter the collapsed portions of the building. Water from fire engines poured into the crumpled section because the fire continued to burn and would burn for several more days. The World War II building's horsehair insulation fueled the flames. Helicopters carrying commanders to and from the Pentagon circled overhead, stirring up the grass and dirt beneath them.³⁷

Military medical chiefs who had not been at the Pentagon earlier came to the crash site in helicopters and government vehicles. At 1430, the commander of Walter Reed Army Medical Command, Major General Harold Timboe, arrived with members of his staff. They went to the yellow staging area on the west side to shake hands, thank people for their help, and offer encouragement. Lieutenant General James B. Peake, surgeon general of the Army, arrived and lifted medical personnel's spirits by showing his flag.⁴⁵

Colonel Geiling, DiLorenzo's commander, returned to the Pentagon "in his scrubs and sandals"³⁷ from Walter Reed at about 1400 and took control of the DiLorenzo medical response. He also began preparations to resume the clinic's operations the next day. Upon arrival, he observed "there were a lot of moving pieces," but "nobody really had a good handle on what the medical piece was."³⁷ Although Dr Vafier and Captain Ferrick were instituting measures to improve control over medical personnel and assets, "a lot of stuff showed up," Geiling said, "whether we asked for it or not."³⁷ Besides the local civilian medical facilities, Walter Reed, Navy Medical, and Malcolm Grow Air Force Hospital had sent medical teams, equipment, and supplies to the Pentagon. Colonel Geiling

obtained accountability of his people, where they were and what they were doing, and reestablished the DiLorenzo Clinic as an organization. Geiling “demonstrated a warrior-physician ethic,” remarked Captain Ferrick, “a physically fearless and heroic behavior pattern that emboldened the troops and provided the Army people with an inside presence.”³⁷ Geiling continued to maintain liaison with Arlington EMS, which had started changing civilian physicians every 4 to 6 hours. Army medical personnel represented continuity in the response.^{5,8,35}

As the afternoon wore on, Captain Ferrick received help from Admiral Mateczun in coordinating medical assets on the south side of the building. The two visited the FEMA director in the command tent and told him about the medical stations in the center courtyard. Before visiting other response areas, the admiral asked the captain to continue coordinating medical assets, and to keep commanders informed. According to Feerick, Mateczun kept people informed, listened to them, and raised their spirits when they felt frustrated because they could not rescue any more casualties. Mateczun’s behavior “certainly helped maintain the chain of command from chaos,” thought Feerick. At 1530, Commander Schwartz held a briefing in the staging area and officially declared the rescue portion of the response over.^{28,35,37}

Captain Feerick began consolidating medical assets at 1600. He centralized medical supplies and personnel, and when it became obvious they were no longer needed he sent people home, with the permission of Vafier.³⁵

At 1830 Chief Schwartz met with agency representatives to discuss the incident command system and the need to phase it into a unified command team, which would allow agencies with various responsibilities to participate in establishing a common set of strategic goals and objectives under one command post. At 2000, the FBI announced that a Joint Operations Command located at Fort Myer would take charge at midnight. At that time, Chief Schwartz moved the incident command to the new center.^{2,46}

Meanwhile, the military medical response gradually became a predominantly Army operation, replacing the joint Army, Navy, Air Force, and civilian activity of the morning and afternoon. During the evening, Captain Feerick turned over command of medical assets to Lieutenant Colonel John Cho, who had led the team from Walter Reed. Cho had a chain of command in place and a logistical plan to obtain needed supplies and people from the DiLorenzo Clinic and Walter Reed Army Medical Center. It was logical for the Army to take over the medical operation, recalled Captain Feerick, because the Army already had the personnel, equipment, and chain of command at the Pentagon and Walter Reed to sustain the effort.³⁵

Lieutenant Colonel George Peoples, also from Walter Reed, relieved Colonel Cho after midnight. The Army was assisted by an Air Force medical team that remained at the Pentagon that night. Full command of on-site medical assets, including the helicopters that Captain Feerick had on standby, went to Colonel Peoples. He maintained liaison with Colonel Geiling, who was the senior medical officer, even though he was stationed in the clinic rather than outside the building. Captain Feerick remained at the Pentagon throughout the night to help with

communications, leaving only the next morning, when medical assets had been cut back to one team from Walter Reed.³⁵

Late in the afternoon of the 11th many medical personnel went home. Enough personnel remained for the recovery operation. Dr Yorke Allen, head of the emergency department at Virginia Hospital Center–Arlington, relieved Dr Vafier at 2000. Colonel Horoho spent the rest of the evening working with the civilian disaster management teams before leaving the Pentagon. She got home about 0030 on the morning of the 12th.^{30,44}

Amazingly, the Pentagon was open for business on 9/12. Although “the usually familiar sounds of small talk and shuffling feet were not there,” about 10,000 personnel returned to the building to work, even though the hallways were filled with guards and the smell of smoke was in the air. Staff were able to return because of the “building’s reinforced concrete construction.” The DiLorenzo Clinic was functioning as well. Firefighters, Pentagon employees, and others sought treatment there for minor injuries incurred during rescue and recovery efforts. In preparation for new crises, the clinic focused on supplies. At nearby Fort Myer, medical liaisons to the Joint Operations Command continued to monitor the response.^{47,48}

SUMMARY

Supplies

With few exceptions, the medical response on the DiLorenzo side of the Pentagon did not suffer a shortfall of supplies during the hour after the attack, when most of the casualties were treated. Although the clinic did not have enough morphine for the number of casualties who needed it that day, it was well equipped with mass casualty items in preparation for emergencies. There were enough medicines, bandages, blankets, linens, litters, silver sulfadiazine for burns, IVs, and primary care carts to carry bandages and ice packs. Because of the inventory being conducted that morning, most supplies were already out and available. The omniceles, which contained additional mass casualty equipment, were quickly broken into when it became clear that the persons with the combinations to open the containers were absent from the clinic. A lack of two-way radios early in the crisis made it difficult to communicate with rescuers in the center courtyard and on corridors 3 to 5, especially because the area’s cell phone system was overloaded. This problem led to inadequate distribution of supplies, which frustrated Colonel Felicio, DiLorenzo’s deputy commander, who focused on logistics in the morning. Responders used backboards and even a door to improvise litters when they were not available. A shortage of morphine in the center courtyard and in the corridors made it painful, and, therefore, difficult, if not impossible, to insert breathing tubes in victims suffering from burns and smoke inhalation. The need to keep airways open was a concern for medical responders until the patients reached the hospital. Had there been better communication and coordination with the EMS

units on the west side, more morphine would have been available.^{7,17}

Having little or no communication with the DiLorenzo Clinic during the first hour, military medical personnel on the Pentagon's west side depended on EMS units for supplies, especially oxygen and IVs, until truckloads of equipment arrived from the Navy Medical Center in Bethesda and from Walter Reed Army Medical Center. Because EMS units carried limited mass casualty equipment, there were shortages of oxygen cylinders, pharmaceuticals, mass casualty oxygen manifolds, comprehensive supply systems, and wheeled gurneys. Fortunately, the Virginia Hospital Center–Arlington shared supplies with the EMS transport units and US Park Police medical evacuation helicopters. Inova Fairfax Hospital also flew an array of medical equipment to the Pentagon. Overall, medical supplies proved adequate on the morning of 9/11 because of the limited number of casualties.^{2(ppA-59,A-60)}

Both sides of the building benefitted from the large number of medical assets that poured into the Pentagon during the day. In addition to the resources of Arlington and Fairfax counties, the Army, Navy, and Air Force had sent personnel and equipment forward, and the Fairfax urban search and rescue team had its own medical supplies. This largesse helped the medical response during the recovery phase of the operation.^{2(ppA-26, A-27),28,30}

Evacuation

Inadequate coordination between the DiLorenzo Clinic and the Arlington EMS units meant that there were no civilian ambulances on the north side of the Pentagon during the first hour, when nearly all the casualties were evacuated. DiLorenzo's staff relied on the two ambulances from Walter Reed Army Medical Center and on commandeered government and civilian vehicles to evacuate the injured from the north parking area to local hospitals. The absence of ambulances in the center courtyard (A-E Drive connects the center courtyard with the outside of the building) resulted in the use of the golf cart-like construction conveyances to move casualties to north parking. Dozens of casualties were evacuated from north parking to area medical facilities in the Walter Reed ambulances and appropriated vehicles.^{6,20}

Increased security around the Pentagon and congested traffic in the Washington area caused by the many government employees released from work made it difficult for the private vehicles functioning as ambulances to get to area hospitals. DPS helped some of those vans and trucks negotiate security and traverse crowded streets. Others drove on sidewalks to reach their destinations.⁴⁹

On the west side of the Pentagon, initial evacuation was by self-referral to area hospitals. As medical personnel established triage and treatment areas, and as EMS ambulances arrived and assembled at collection points, more and more patients went to local hospitals by ambulance, though self-referrals continued. A four-person emergency medical team on each ambulance assessed the condition of casualties on their way to the hospital. Military medical

responders used the EMS system rather than wait for military ambulances to arrive to take victims to military hospitals. About 125 patients went to area hospitals from both sides of the Pentagon. Another 100 persons were treated at the site for minor injuries.^{2(pA-114),10(p314),35}

The *9/11 Commission Report*^{10(p314)} and the *Arlington County After-Action Report*^{2(pB-15)} cite 106 for the official number of casualties who sought treatment in area hospitals on 9/11. That number, however, does not include three patients evacuated from the Pentagon to Walter Reed Army Medical Center on 9/11 and admitted to the hospital. Nor does it include ambulatory casualties, suffering from smoke inhalation, contusions, lacerations, and burns, who showed up at DeWitt Army Community Hospital, Fort Belvoir, Virginia, that afternoon. Some but not all of these patients were included in the 106 figure because they had been released earlier from local hospitals but were beginning to feel pain. (See Chapter 3, *Hospitals and Clinics*, pages 85 and 86.)

Confusion resulted from the rush of casualties who escaped the building within the first hour. No one paid much attention to which hospital would receive which victim. Most of the injured went to Virginia Hospital Center–Arlington and to Inova Alexandria Hospital; very few went to Inova Fairfax Hospital, the regional trauma center, because it was farther from the Pentagon. After Vafier became command physician, he worked on the establishment of an evacuation system in which the incident commander coordinated the movement of patients to hospitals that could best meet their needs. This system came too late for the early victims of the attack, but rescue personnel received the benefit of the medical team's efforts.^{34,42}

Medical evacuation helicopters and teams were also at work early in the day and succeeded in evacuating some of the worst cases to regional trauma centers. Mutual-aid medical evacuation personnel from the US Park Police, MedStar (Washington Hospital Center), and Inova Fairfax Hospital responded to the emergency with a total of five helicopters. After the air controller at Ronald Reagan Washington National Airport notified the Park Police of the attack, they dispatched evacuation helicopters *Eagle I* at 0943 and *Eagle II* at 0951. The Arlington County Emergency Communications Center alerted MedStar of the tragedy at 1006, and one MedStar helicopter arrived at the Pentagon 12 minutes later. The Center also notified Inova Fairfax Hospital, which dispatched *Air Care I* at 1000 and *Air Care II* at 1040. During the first hour, Davison Army Airfield near Fort Belvoir, Virginia, sent two evacuation helicopters with Air Force trauma management teams on board. At 1025, two of the seriously injured were evacuated from the west side to the Washington Hospital burn center, one patient on a MedStar helicopter and another on a Park Police helicopter. Both aircraft were crewed by local Virginia civilian teams. Both the civilian and military teams rotated their assignments to keep crews rested and alert. Civilian teams also rotated the assignment of keeping one team at the Pentagon while the others evacuated casualties because civilian crews knew the fastest way to the nearest civilian hospital. All the teams provided back-up medical support.^{2(pA-45),35}

Command, Control and Communications

Early establishment of command, control, and communications are key elements in an operation's success. At the Pentagon, highly qualified persons on both sides of the building did a superb job taking command and control of the medical response: Major Brown on the north side and in the center courtyard, and Colonel Horoho, Arlington County EMS personnel, and Dr Vafier on the west side. Brown, Horoho, and EMS personnel established triage and evacuation within minutes of the attack (albeit Brown resorted mostly to private and government vehicles when no EMS ambulances appeared), and Vafier, after the all-clear, oversaw the establishment of sophisticated treatment areas and a better coordinated evacuation system. They accomplished all this under such difficult circumstances as dealing with smoke and fire, not knowing the number of victims or their locations, multiple orders being given by multiple people, organizing an abundance of volunteer helpers (all core elements in mass casualty situations), as well as frequent site evacuations due to the threat of an incoming plane and ever-present problems in communications, notably overloaded cell phone circuits, oversaturated radio channels, and shortages of two-way radios.^{6,10,30,34}



Emergency medical services personnel prepare to load two patients into a Park Police helicopter on Washington Boulevard (Rt 27) for evacuation to a local hospital. An unidentified soldier runs toward the Pentagon.

Photograph: Public Affairs, Office of the Surgeon General, US Army.



MedStar helicopter from the Washington Medical Center flies over the burning Pentagon.
Photograph: Public Affairs, Office of the Surgeon General, US Army.

Indeed, most aspects of communications were problematic during the initial response and for several hours afterward. According to its mass casualty planning, the DiLorenzo Clinic would send a representative to the DPS's emergency operations center to monitor and assist in any response to a crisis. In this way, DiLorenzo's communication channel would make a circle from the DPS's emergency operations center at the Pentagon through the North Atlantic Regional Medical Command at Walter Reed in northwest Washington, and back to DiLorenzo at the Pentagon. The DiLorenzo representative at the emergency operations center would then relay information to and from the clinic through a separate chain, enabling Major Brown to focus on other emergency matters.⁶

On 9/11, when Colonel Kaminski, chief of DiLorenzo's ancillary services and its designated representative to the emergency operations center, moved to a temporary center established in the van near the tunnel, he followed the plan to manage communications between the clinic and the DPS. He conversed mostly with Air Force Captain Joseph Ibanez, DiLorenzo's information management officer, who represented Colonel Felicio to handle medical logistics. Kaminski and Ibanez tried to help medical responders in the field; however, the center was "very disjointed" during that first chaotic hour, Kaminski observed. There did not seem

to be a structured system, and information did not flow smoothly. For example, responders took it upon themselves to go higher up to get information even though they knew who was in charge. This situation resulted from communications difficulties, frequent evacuations, and the urgency of rescuing, treating, and moving victims of the assault to the nearest hospital.^{7,8,19,22}

Those factors also contributed to poor communications between the DiLorenzo Clinic and the Arlington EMS teams. Because EMS staff were initially unaware of DiLorenzo's activities both in the center courtyard and in north parking, coordination of triage, treatment, and transport activities was inadequate between the two groups on the morning of the attack. No ambulances reached the center courtyard during the first hour, and only two military ambulances got to north parking. The absence of early contact between the DiLorenzo Clinic and Arlington EMS was contrary to the memoranda of understanding between the two organizations as established in mass casualty plans and emergency medical support agreements. Thoroughly thought-out disaster planning that included a reliable communications system would have helped. In its after-action report, the Rader Clinic emphasized the need for emergency communications proficiency between response teams, the clinic, and the ambulances. Like the rest of the nation, the Army Medical Department was unprepared for this "new type of war." It needed to adjust its policies, plans, and training to respond to a future emergency of this kind.^{2(pA-19),10(ppxv,xvi),45,46,49}

Lack of good communication between DiLorenzo and Arlington EMS, and the fact that EMS personnel, in general, did not use triage tags to identify victims and their treatment, also resulted in poor control over patient disposition. EMS staff stated after the fact that "had there been further catastrophe it would have been next to impossible to ascertain a total victim count and to identify Pentagon casualties, including those reporting to DiLorenzo's treatment stations."^{2(A-11)} As a result, records had to be reconstructed after the event using information collected from hospitals and clinics to supplement information gathered on site. Some of the data came from DiLorenzo staff members who took names and phone numbers of the patients they brought to the hospitals and gave that information to the clinic's deputy commander, Colonel Felicio.^{2(pA-11,A-17)}

Except for the first hour, when there was virtually no communication between the incident commander on the west side and medical personnel on the north side, military medical personnel from DiLorenzo and Rader adapted readily to the incident command system, accepted a support role, and took guidance from Arlington's EMS officers. In the center courtyard, military medical personnel interacted with Arlington Fire Department staff after they arrived and even went into the building with them to save people. Military medics began working with civilian EMS personnel after the all-clear at 1038, when EMS personnel arrived in the center courtyard.

Coordination of medical activities between military and civilian medical personnel was better on the west and south sides of the Pentagon. Civilians were in charge in both places; military personnel did not try to take command, but instead

“filtered in.”⁹⁷ In this respect, the military followed mass casualty strategy and the example of General Jackson, commander of the Military District of Washington, who “cooperated with the Arlington Incident Commander and provided valuable resources.”^{2(pA-48)} The agreements that Vafier and Horoho made with Arlington’s EMS, the fire chief, and the police gave the medical team the authority to give orders on medical matters. After that, medical personnel ceased to receive different guidance from different agencies.^{2,7,30,50}

After the first 1.5 hours, the DPS’s emergency operations center moved from the tunnel to the Navy Annex building near the Pentagon. DiLorenzo’s Colonel Kaminski joined it there. At about noon on the 11th the FBI set up its command post at the Virginia State Police Barracks adjacent to the Navy Annex. The FBI on-scene commander was now Assistant Special Agent in Charge Bob Blecksmith, who had just arrived and who outranked Special Agent Chris Combs. Together the DPS, Kaminski, Blecksmith, and Combs spent the afternoon preparing to activate the Joint Operations Center at Fort Myer. Command and control continued to be a challenge because of the various jurisdictions, numerous organizations, and thousands of responders and volunteers on site that day. Control of the medical piece gradually improved, however, as when Army Medical Department operations officials arrived at the Pentagon in the afternoon and reported to the DPS emergency operations center (and later to the Joint Operations Center at Fort Myer after it opened at 0600 on the 12th).^{6,51} The Arlington County Fire Department incident commander remained in charge until 21 September, the end of the fire and rescue phase. The FBI assumed command of the scene on that day. Control returned to the DoD on 28 September.^{2(pA-20)}

Despite all the difficulties, the initial medical response to the attack on the Pentagon succeeded. The May 2001 mass casualty exercise had familiarized people with their roles. This ensured that both sides of the Pentagon had color-coded triage zones, and that the DiLorenzo Clinic distributed blue vests that identified levels of training, such as physician, nurse, and emergency medical technician. Upon hearing of the assault, DiLorenzo staff, using skills sharpened by training and previous mass casualty exercises, moved into the center courtyard and north parking or remained in the clinic to treat victims. As a result, within the first hour clinic staff evacuated dozens of seriously injured patients to area hospitals in two ambulances and an assortment of commandeered government and civilian vehicles. However, the communication problems led to little or no contact between DiLorenzo and the civilian EMS units on the west side of the building during the first hour; had there been many more casualties these problems could have been disastrous.

On the west side of the Pentagon, military and civilian volunteers led by Colonel Horoho were the only medical personnel on the scene during the first 4 minutes after the attack. They established a triage site, formed litter bearer teams from military personnel who had evacuated the building, and rescued and treated casualties of the assault. Once Arlington’s EMS units arrived, military medical personnel worked with them and readily took orders from their officers.

Volunteers played an important role in the overall medical response. They risked their lives to rescue victims and served as litter bearers and runners to obtain information and supplies. Those with medical training treated the injured. Volunteerism, however, was a double-edged sword. Medical responders did not always know how to use volunteers effectively, and when there were no more casualties to treat, the volunteers added to the confusion by wandering throughout the crash site area. The Vafier-Horoho team made efforts to improve control of medical personnel, equipment, and supplies.

The medical response effectively met other challenges. Frequent orders to evacuate because of the threat of another attack necessitated the removal of triage sites to a safer place further away from the crash site and the reestablishment of treatment areas once the all-clear was sounded. New attack threats also disrupted rescue efforts. When the presence of multiple local and government agencies and masses of responders resulted in conflicting orders, the Vafier-Horoho team obtained agreements from various agencies to allow the medical team primacy in issuing medical commands. Medical personnel prepared to treat more Pentagon victims as the day wore on, and helped exhausted and injured firefighters and other rescuers. The fact that only one person died after leaving the building was a testament to the swiftness with which victims were rescued, the excellent treatment they received on the Pentagon grounds, and their quick evacuation to area hospitals. The professionalism, training, and teamwork of military medical personnel, and Army Medical Department staff in particular, who worked side-by-side with civilian EMS officers, contributed to the favorable outcome. Although Medical Department personnel were frustrated when no more survivors emerged after the first hour, had there been many more victims, medical problems and challenges would have multiplied significantly.

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