Pentagon Attack

Interview with Steven Carter
November 19, 2001

Putney: This is an oral history interview with Mr. Steven Carter. He is the liaison for the renovation and recovery of the Pentagon. It is November 19, 2001, and we are in the Building Operations Command Center in the Pentagon. [The interviewer is Diane T. Putney, OSD Historical Office.]

Mr. Carter, what was your position on September 11 and please describe your key responsibilities.

Carter: I was the assistant building manager of the Pentagon, and my duties were the operation and maintenance of the Pentagon facility.

Putney: Had you been concerned about threats against the Building or some kind of terrorist attacks before September 11, months or years before, and what was done, thinking in those terms?

Carter: Over many years we have had increasing concern about terrorist threats to the Pentagon and many other government buildings. Because the Pentagon is the symbol of the nation's defense, we knew we were a prime target, as well as the Capitol and the White House. We have been conducting drills and training sessions over at least the past five years. For many of them, called table-top exercises, we go through actual scenarios of terrorist attacks against the Building, how we would handle them, and how the Building would respond. These have included hostage takeovers, bombs planted within the Building, fires set, demonstrations, civil disobedience. It is a wide spectrum of things that we have looked at. At one point we even looked at a small plane being

crashed into the Pentagon, but nothing of the severity of what we experienced on September 11.

Putney: Was that an accidental small plane air crash or deliberate?

Carter: We looked at it both ways, a plane coming out of National Airport and, due to losing an engine or something, crashing. I think we had one in which a helicopter was involved, but not a commercial airliner full of people.

Putney: On September 11 was there any kind of emergency plan that was fully or partially implemented?

Carter: We have various plans for different scenarios that have been drawn up, evacuation plans that are published from the Building Manager's Office, event procedures worked out with the Defense Protective Service. These were established and in place at the time.

Putney: Could you describe what you were doing that morning and how you heard about the attack on the Pentagon?

Carter: We had assumed the watch at the Building Operation Command Center (BOCC). Everything was normal. We were conducting normal routines, when one of the BOCC operators, Kathy Greenwell, advised me that one of the Twin Towers in New York City had been struck by a commercial aircraft. We were watching that on CNN in the BOCC, and as we watched, a second aircraft struck the other Tower. At that time, it was my opinion that the probability of two accidents of that nature was slim to none, and I immediately contacted the mechanical and electrical staff of the Pentagon Building Management Office and ordered the immediate lockdown of all mechanical and electrical rooms. That was to ensure that unauthorized people were not in them,

that contractors were not working in the spaces, and that the spaces were locked and under control. I then started notifying my chain of command, including the building manager, the director of the Federal Facilities Division, and the deputy director of Washington Headquarters Services (WHS). I also notified the DPS communications room that a probable terrorist event had occurred in New York City and that we were doing a lockdown of all mechanical rooms. We continued to watch what was happening with the Twin Towers, and Kathy advised me of the first Tower's collapse. My supervisors had come down to the BOCC to review what was going on and the steps we were taking, and that we probably would be going to a heightened state of alert and things that we should be doing on our part. They had just left the briefing at the BOCC when I got a message back from DPS stating that threatcon conditions were normal at the time but they would advise me of any change, leading me to believe they were looking into the situation further. Minutes later I felt a jolt, I was seated at my desk and heard a large boom with associated crumbling noises on the ceiling of my office. As I went to the door the fire alarm system for the Building was sounding in a massive area of Wedge 1, and there was smoke and fire and flow from the sprinkler system. It caused me to pause for a fraction of a second trying to take in the situation. At that time it did not cross my mind that we might have been hit by an aircraft. I thought possibly it had been a truck bomb or briefcase bomb. The number of fire alarms coming in showed 355 alarms and climbing, so I was leaning more toward a truck bomb. I told the staff to continue taking phone calls, and that I would try to make a determination as to the extent of what was going on.

Putney: You are seeing these alarms through your computer systems. Could you briefly describe those?

Carter: We have five 90-inch high-definition rear-projection screens that monitor various systems—the HVAC system, fire alarm system, leak detection, gas detection, locking system, two screens which we had up for fire alarms. Those were the ones that immediately went off. We started getting alarms in on the HVAC system also, where different systems were knocked out by the impact of the aircraft.

Putney: That's heating, ventilation, air-conditioning—HVAC systems. It gives you a visual signal. Do you hear something, too?

Carter: Yes. You start getting a beeping that is predominant from the fire alarm system. In the background we could hear the fire alarms going off in the area telling people to evacuate the Building.

Putney: You are part of Wedge 1?

Carter: Yes, we are in 1A366, which is part of Wedge 1.

Putney: The aircraft is going to hit into part of Wedge 1, the other end.

Carter: Yes.

Putney: So you are rather close to the impact area.

Carter: Not far.

Putney: Then what happened?

Carter: I stepped out into the hallway to see what was involved. I saw a slight hazing of smoke as the smoke doors were closing at the time. I went off to the A-ring, into the atrium, where people were moving rather quietly but with a purpose at a good clip, but not running. There did not seem to be a large amount of panic. A large group of

people entered back into the apex from the outside looking for fire extinguishers and saying that there were people trapped. This was confirmed by Kathy, who had called over my radio. She was telling me of people calling in trapped, in the area of Wedge 1, 4th and 5th Corridors. We did not have any fire department personnel, this was within minutes. I walked down to the A&E drive area of the fourth corridor where I could see the double doors of the electrical vault had been blown out, and there was smoke coming out of it as well as water pouring out into A&E drive. Looking up into the windows on the second and third floors, I could see people in the windows banging to get attention or to get out, but the windows were not breaking. They were pulling people out of the electrical vault because the back wall had blown off, and it had become the only escape for some people in that area. As people were reaching and helping others get out of the electrical vault, it was fully loaded at the time, 13,800 volts of electricity on four different feeders. I went into the 4th Corridor to see the condition of that, at which time one of the generator responding folks, I believe Matt Morris, went in and disengaged all four of the main feeders. There was heavy dense smoke in the 4th Corridor with water pouring out into the hallways. Visibility, even at the doorway, was maybe two feet, I don't believe I could even have seen my hand at the end of my arm. There was a definite feel of heat coming through the area, but the overwhelming thing hitting my senses was the dense acrid smoke. I backed out of that area and assisted a few more people being removed. There was a large contingent of Pentagon occupants dipping their shirts into the water that was accumulating in A&E drive and putting them over their faces and attempting to reenter the Building to help get people out. With Kathy's continued calls that she could not find where the incident scene was

being set up, being unaware whether the fire department people were set up yet, and people continuing to call in about being trapped. I felt it best to continue to try to find out the extent of what was going on. Farther toward the 5th Corridor, on A&E drive, there was another set of double doors to another emergency power area. The doors were ajar and smoke was coming out. I went over to a stairwell entrance, and I could feel the heat on the doors and see the scorching of the windows and up the stairwell, and it was so heavy with smoke the glass appeared to be painted black. I went farther down the 5th Corridor where there was a hole in the wall and the wheel of a plane was sitting there. Looking into the hole there was again heat and the acrid black smoke. I could see the destruction of the walls, the ceiling caved in, and debris hanging from the ceiling and no apparent pathway into these. I could see through the smoke and the fire but no movement, no voices, or anything like that. On a previous hole there were people gathered around trying to yell to see if there was anyone else. It was just disarray. As I went down and tried to enter into the 5th Corridor, I looked to the left where there was normally a clinic, it was totally decimated, and the smoke and heat was prevalent. People were forming up to see if they could get anyone else out. I cut from there back into the center courtyard to see if the fire commander had arrived, and he had not. They were using the center courtyard to stage a triage area for injured people. They were putting them all around on the grass. There were medical teams that were bringing in equipment as much as possible, but there were very few supplies out there and a whole lot of people. I can't remember at this time whether part of the fire department arrived or not, but I remember them calling in another series of aircraft headed toward the Pentagon. At that time the triage people started rapidly moving

people out of the center courtyard to get them out of there. I believe the fire department was there, and they were pulling off because of the additional inbound aircraft. We divided the mechanical and electrical response crews into two teams, sending one underneath the tunnel at I-395, South Parking, and the other over by the day care center, so we would have staff available if the plane impacted to be able to respond or if it hit one of those areas, we would be far enough divided to still have response people available. Six people stayed within the Pentagon at the center courtyard where we were shutting off chilled water, because we had gotten word that the chilled water plant had gone off line due to massive loss of water, which we estimated at half a million gallons in those few minutes. The six of us continued to shut down domestic water, chilled water systems, steam systems, in Corridors 1, 2, 3, 4, 5, and 6, to get the water pressures back up, which we did, and the plant was able to get back on line. We had drawn the city water pressure in Arlington down to 15 pounds of pressure, and the water pressure from Dalecarlia was at 18 pounds pressure until we got those systems secured, and then we built up about 50 pounds on the system, still leaving the fire water pouring into the area, that cooled or extinguished flames where possible. Down in the tunnels the smoke was so dense your body did not want to swallow. There was a choking; the only relief was to take my suit coat and breathed from my arm area to filter out some of it. We then went back up to the center courtyard where they were announcing ten minutes until impact from the additional aircraft. We divided up into two groups of three and went to opposite sides of the center courtyard to maximize our chances of one or both of our groups being able to survive if it impacted the center court or another area of the Building. At that time it was a real eerie silence.

There was no one else left in the center courtyard, and we could hear the fire alarms going off in a massive area of the Building. Back somewhere I had ordered the shutting down of any air handler in Corridors 3, 4, 5, and 6, with air barriers to be set up in Corridors 1, 2, 7, and 8 shutting down the exhaust and opening up the intakes to full so that we could pressurize those to keep smoke from traveling any farther in the Building. We were getting reports of smoke throughout the whole Building and wanted to minimize this. We maintained that pressurization later, even bringing it over to the 6th Corridor for a while, and were able to stabilize the Building. The subsequent aircraft reported did not appear, and we got an "all safe," but we got a report that it crashed in Pennsylvania. We did not know if it was shot down. We had seen a military aircraft with missiles under its wings cross over top of us and that's the first time I took a calm breath, feeling that nothing else was going to be able to get to us and that we were covered.

Putney: Where were you when you had to breathe through your suit coat jacket, and what were you trying to turn off?

Carter: When I tried to go down the 5th Corridor, that was the only way I could swallow. The smoke felt like a solid sponge, and my throat closed off, so I put my coat up there to breathe through. I used it again when I went down into the tunnel areas and center courtyard tunnel when we were trying to shut down the major shutoff valves.

Putney: What valves were these, and who was with you?

Carter: There were six of us shutting off the valves. There was Dan Murphy, an electrical engineer; myself; Bob Candido, the assistant building manager in training, it was his second day on the job. Kathy Greenwell reporting from the BOCC, Dave

Brown, possibly Tony Freeman—I believe he was trying to get the air handlers going; Dennis Smith was down there assisting with the valves.

Putney: These valves control what system?

Carter: All the chilled water going into those areas of the Building, the 1st and 2nd Corridor, 3rd, 4th, 5th, and 6th; the domestic water—drinking, toilet flushing water, sink water; then the steam coming into the Building. We felt that the other pipes had broken and there was a good chance that there was live steam pumping into the area, and we wanted to get it shut off to minimize the danger to people.

Putney: What function does the chilled water serve for the Building?

Carter: The chilled water is provided to the Building to go to the air handlers, and it cools the air—it's your air-conditioning. At the heating and refrigeration plant across from us, they provide the chilled water at about 42 to 45 degrees. It runs through our air handler units to cool the air and then returns back to the plant; it's a closed loop system. It goes through major risers to the fifth floor, also some on the first and second floors, and we also use it on stand-alone units throughout the area. In the Wedge 1 area there are air handlers at every ring on every floor, and that's where we had massive pipe breaks.

Putney: Is the chilled water important to keep certain large computer systems up? Do we need air-conditioning for some of our telecommunications and computer systems?

Carter: It's widely used throughout the Pentagon in all of the telecommunications, the command centers, communication centers, as well as providing the ability for the secretary of defense, the Joint Staff, the Navy command center—which had been wiped out—the Army command center, the Air force command center, the National

Military Command Center, all of which were up and operating at peak. It was important for us to get the system restored so they could continue performing their functions, especially with the attacks on New York City and here. Those offices were operating at maximum potential, at least that's what we feel. In our priority system, those are the areas we are set to protect, to keep them functioning as long as possible.

Putney: When the plane hit, these pipes were large, and the water was gushing out, so you had to find the key valves to stop wastage.

Carter: Because of the inability to access those areas due to the fire and smoke, we went down to the tunnel to cut it off where it feeds, the major shutoff valves. Some of the chilled water valves that were shut were as large as 24 inches. I don't know if they shut the 36-inch valves or not. They were the isolation valves to keep it from going down into the "spokes." The center courtyard is a complete loop that feeds it. We were shutting at the beginning of each spoke so it would completely shut off the water to that area. That way we could do it with a minimum number of valves and very rapidly, keeping people in harms way the minimum amount of time. It was strategically important, without that chilled water we would lost the communications centers due to the heat picking up in the spaces, telephone dial tone, as well as our ability to keep in control of the defense of the nation.

Putney: Does all your staff know where the valves are and how to do this or are you the critical person? Does someone else know what needs to be done?

Carter: There is not a mass group running trying to do things. We coordinated. My position also serves as the incident point-of-contact POC for the building management. We take the Building to the most stable position and also work with the fire incident

commander on any system that they want shut down. If they want electric pulled out of an area, we do that. Generally, I call the coordinates of what systems we shut down. Oftentimes I don't designate a certain air handler to shut down, I identify a complete area or zone, and the staff knows which individual air handlers have to go down. On some occasions, when we are trying to do something specifically to a certain area, we call very specific information, but most of the time it is general in nature. The mechanics working with the systems over the years and also on previous occasions or drills, are knowledgeable and aware of how we activate and operate. The staff is familiar with valve locations and what air handlers serve what area of the Building.

Putney: How long was your Building Operation Command Center up and running, and from this facility, what can you do to minimize the damage?

Carter: Under normal circumstances, we can control any air handler and area in the Building from here on the HVAC system. We can also control or be able to use the eyes of the fire alarm system. We found out later that when the plane entered, it hit the emergency generator and the fuel tank that was sitting out by the heliport and took all emergency power out of Wedge 1, with which the operations command center is backed up. It also took out the C-4 vault, the double doors blew off, and I was aware because I could see where the transformers were actually twisted off their foundation. We knew we had lost the power over there, but I didn't know why we had lost the emergency power at the time, other than we just did not have it. We kept the Building Operation Command Center open for about 80 to 100 minutes into the event, but we had to pull the power out of the C-3 vault because we had firemen entering the area and all the electrical damage due to lighting, plug loads, and walls that had sheared. It

was becoming an electrocution hazard for the fire department, so we had to pull the last vault off the line, which shut down the BOCC. At that time Kathy moved to a backup BOCC location at 2B200, which has a lot less capability but is still able to maintain telephone contact, radio relay. At that time our people were divided in different areas so that we could continue to respond. They did a lot of the radio relay from me out in the center courtyard to that, to people on the outside of the Building.

Putney: When you turn out that electricity in that vault, can it be done from the BOCC or do you have to go to the vault?

Carter: The design at the time did not allow us to open breakers in the electrical system. We are changing the feeders with the control system because there was concern that someone could inadvertently do it or break in and do it. The same way with shutting the valves. We had some automatic operators installed in Wedge 1, but with the power out, they didn't work. It is our intention to expand our capabilities because of the number of people we had to put in harms way to operate this equipment. We are expanding the areas in which we already had the automation and did not have to send people in harms way. The last thing we want to do in an event like this is to lose additional people.

Putney: So you have to manually turn off that electricity in the vault area?

Carter: Yes. They are called high voltage disk connects. The arms on them are about 3 feet long and you have to go in. The disconnectors themselves are 6 feet tall. People have to go in and one by one pull them out of position, with the water pouring through the space and the smoke going through the space it would have been a highly

hazardous job. The motivation was that that was the area they were pulling a lot of people through, seriously injured people.

Putney: Was the Pentagon's permanent electrician staff doing that or contractors?

Carter: They were government employees, Pentagon staff. The one that disarmed the C-4 vault was a generator supervisor, who worked on the emergency generators in the Building. The assistant general foreman, the foreman, and other electricians were going into the high voltage vaults and disabling them from a little farther away than actually happened, because some of the vaults were just non-accessible. For example, the E-5 vault down at the E ring on the fifth corridor. I made it to the C ring and then had to back out, it was so bad.

Putney: How many electrical vaults were destroyed by the crash?

Carter: The ones affected were the C-3 and C-4 vaults. The E-5 vault was torn up also. In order to get power out of the area we also took care of the E-5 vault—disabled the power off of that. I don't think we had to pull any others.

Putney: With the smoke spreading throughout the Building, how successful were you through this center in using the ventilation system to contain the smoke to that area?

Carter: Once we find the area it is extremely effective. We were also having smoke wrap around the roof, so much that the center courtyard looked like it was under a heavy fog. When it is doing that, we have problems, because the outside air is being pulled in, and it is smoke from another source. When the wind direction is good we can open up and pressurize. I would say at the times the smoke isn't wrapping over the top of the Building we would be about 97 percent effective at stopping the smoke. It takes a while to work it out, and while we were assessing how far it went, the smoke was

rapidly traveling, especially through the fifth floor mechanical rooms and such, which were then pumping smoke down into other offices. Once we got the air barrier put up, it cleared up rather quickly. There were still problems with smoke infiltration due to the massive amounts of smoke wrapping around the Building.

Putney: For the lay person would you explain how you change pressure to direct air to flow?

Carter: We find where the smoke producing area of the Building is and try to put it at a negative. Often times, that negative is just shutting down all the air handlers in the area. Then, on the borderlines, we shut down the exhaust fans, removing air out of the Building and just bringing air in. By bringing air in and not taking any air out if becomes positive air pressure. The area where the smoke is produced from becomes negative, so it flows from those areas into the problem area, which then protects all the other areas because of higher pressure of the outside air coming in and pushing toward the problem area.

Putney: When you were near the second and third floor area by A&E, you saw people banging on the windows? Were they the old or new windows?

Carter: They were the new windows in Wedge 1. I don't remember the ones in Wedge 2.

Putney: People could not break the windows—were these the blast resistant windows?

Carter: From what I understand, there are three different levels of blast resistance, the strongest being on the outside of the Building, the E ring, the next strongest being center courtyard, and the inner areas are not really called blast windows. It seemed to me, later on when some had finally broken, they appeared to be two pieces of glass

with a laminate in between. I saw people banging on them with their fists, and I heard at least one window being struck with something else, but they weren't cracking or breaking. On the A ring, I watched a very large fireman with a fire ax striking a window over 20 times before being able to peel even a small area at the base of it. They were doing that to gain ventilation.

Putney: Kathy was getting calls from people who were trapped, because this is where calls come for problems with the Building?

Carter: Yes.

Putney: These were relayed to you via radio, when you were in the courtyard or doing other tasks?

Carter: Once the fire commander was there, when we got the calls we passed the locations to them and showed them a rough outline of the Building areas so that they could put folks with equipment in those areas.

Putney: How soon was it before someone from the fire department arrived? At some point you linked up with a fire official in the center courtyard who was in charge.

Carter: Once he arrived, I immediately met up with him in his vehicle. It's like a suburban vehicle with Battalion Chief written on it. By our written plans that is the incident commander for the whole incident. We were unaware that at this time the plan had changed. Although the vehicle was the same, the overall incident commander in charge was actually located outside the Building. We didn't make it outside the Building until 11:30 or so that evening, to see what had actually happened. We had finally heard it was a plane that had collided. We had thought there was a small plane with explosives, and later heard it was a fully fueled 757. We were getting bits and pieces

from the news. At one point they were saying well over 1,000 people were missing and presumed to be trapped. We didn't get any more calls after the first half-hour, which in itself became very solemn. I think the fire department had just gotten there and then pulled off because of the additional incoming aircraft

Putney: You were hearing these incoming reports from security police?

Carter: We were hearing it over the radio, they would pass all the radio traffic to us.

Putney: With instructions to get away from the Building?

Carter: They were evacuating the Building due to additional incoming aircraft.

Putney: What kinds of things did you do with the incident commander? What needs did he have? I gather it would be identifying certain areas to turn off electricity. Were you talking to anyone else up the chain on the radio?

Carter: Calls would come across my cell phone from time to time, my chain was asking what was going on.

Putney: Through your cell phone, they could get through?

Carter: Yes, after about four hours. Kathy got a message to my family that I was OK. Several families had been calling in. Kathy was advising them of the ones that we had seen. The mechanical and electrical shops immediately did a muster to insure the correct count and via radio they were finding others in the Building and telling them the rendezvous points. As Kathy would hear different ones responding she would inform their families as they called.

Putney: All your Building staff were okay?

Carter: Yes. We were so lucky we didn't have any person even scratched.

Putney: You are located in Wedge 1, your people are always all over the Building.

Carter: Yes, and we were responding into the area.

Putney: Getting very close to the destruction, but no one was seriously injured?

Carter: No.

Putney: As the morning wore on, what were the other kinds of things you were doing?

Carter: Basically supporting anything the fire department needed or wanted to know about how different systems were run in the Building. We continually had problems with electrical sparking in the area, and we had all the systems feeding into the area but with agency modifications, they had pulled power from other areas and brought into there, so electricians were busy trying to locate the sources of the power and secure them. We also had an uninterruptible power system (UPS) that was very significant, supplying the Navy command center that was broken up, and continuing to produce power into that area into the second day before we realized what we were really up against and were able to get that secured. They were asking for changes in ventilation patterns, plus we were doing that based upon reports from certain areas where smoke was coming in. The National Military Command Center was actually manually operating the outside air louvers. We had moved the Building to a high positive outside air to try to lose any smoke in there, especially as the fire minimized, we maximized the outside air. Of course, it burned for several days. I guess the final result was that three-fifths of the Building was the space we kept on line, and any evacuation that was done was called by DPS for reasons of additional incoming aircraft. They did not have to evacuate it because of danger of the fire or smoke or hazardous air. We were able to stabilize and keep roughly four [million] square feet fully functional throughout the whole event.

Putney: Would there have been a scenario where you would not have been able to control the pressure in the air ventilation system, and smoke would have gotten throughout the Building? The Building would have had to be closed down then. Was it luck or design or was the Building so big?

Carter: It was a combination of all of those, because we are 7 million square feet of Building located roughly on five floors, so we have a lot of horizontal distances that we can move people. The original Building design, where it was treated basically as five separate buildings with redundant feeds, enabled us to do that. The tabletop practices and procedures that we had developed and tested came into play. It was kind of all of the above and a blessing from God that it wasn't requiring more power to be pulled off. Electricity is the thing that keeps everything going, so had we lost major feeds coming into the Building it could have been different. In our minds, we are going to keep those areas up. I think one thing that helped was that we had a fire about three weeks before over in the aeromark (?) area, the laundry that serves the cafeteria. They had a duct fire with a lot of traveling, heavy smoke. We were able to isolate that very rapidly from the rest of the Building, going through the desmoking and all of that. Our people were with the fire department doing their normal procedure, showing them systems and helping them get around. So we had kind of a good preparation happening a few weeks before. That was very fresh in everyone's mind, and we had gone over what we could have done differently, and the effectiveness of what we did. So when this happened, it was scaled a thousand over, but basically the same type of procedures.

Putney: Had your staff not done anything, perhaps because of injury, would the smoke have penetrated the entire Building?

Carter: Rapidly. It had in minutes before gone around the Building. We were getting calls that there was heavy smoke in other areas. By getting the air barriers up we were able to dilute it out. But had we not been able to respond or been forced to evacuate the Building, I could have seen many scenarios that would require much larger evacuation, including the whole Building. We got calls from both the Secretary's office and the Joint Staff offices and were constantly on the phone with the NMCC about conditions. Were we going to be able to hold or would it get worse? Was the fire going toward them and were we looking toward evacuation of the entire Pentagon? Our answer to that was "not on our watch." We felt we had stabilized, notwithstanding evacuations they were doing because of additional incoming aircraft. The Secretary of Defense, the Joint Staff, the NMCC, and the other operations and command centers were apprised of those situations. That was a separate decision altogether whether to stay, but the fire and everything going on in the other section was not compelling them to leave the Building.

Putney: Early on that day through the national news, people knew that the next day the Pentagon was going to be open. Was that decision made after discussions with you and your staff?

Carter: It was done on a higher level. At one point, I believe it was a determination that wasn't announced. This was after, what would have been multiple hours, we had stabilized the Building. I would imagine part of what was taken was that it was not that bad in here, and again, we are a symbol not only to our nation, but to the world. When people turned on their television and saw smoke pouring out and heard talk about dead and injured, I can only equate it to when Kennedy was shot and the fear of what was

going to happen next was going across our nation rapidly. Being able to put out the information that the Pentagon was still operating, and we were still calling the shots allowed people to feel a sense of security. I think not only our people, but around the world because of the symbol of the defense of the free world. I think that was important. The message going around the world and the secure feeling of the people because we were still operating was absolutely necessary. We got a bruised eye, but that was it, and here's back at you. I'm totally impressed with the way that this Building was designed some 60 years ago and its ability to take such a horrendous event and continue to function. The slab that held up for no reason, with the columns knocked out from underneath it. The area that did collapse held for from 25 to 55 minutes. I've heard testimony that that allowed egress. One general said over 200 of his staff were able to get out of the area because it did not collapse immediately. I believe that is attributable to the quality of construction from that period of time, the design, and also I give all due credit to the grace of God. I don't think there is as much separation of church and state as others do.

Putney: Also, to keep the Building up and running, you had to contain the smoke to that area, and your staff was hard at work doing that. The chilled water had to be there to keep the systems up and running. People couldn't have been there doing their job if the systems were down.

Carter: In some cases, the equipment can't operate with heat, especially a lot of the sophisticated heavy-duty computer systems or communications. You have to get the heat out of the spaces or they overheat and shut down. I would imagine that at the rate some of the systems were being used during that time, the heat was heavy. I have

been in conditions before where we had to shut down the chilled water just to repair a leak, and we had to bring in every portable air-conditioning unit we could rent between the Virginia and Pennsylvania borders just to keep critical areas going. A lot of those are such that in a matter of less than an hour, if they lose the chilled water, they are down. Now communications are our eyes to the world, our ability to communicate.

Putney: Those two critical missions your staff performed. You cut the hemorrhaging of the chilled water so it could still circulate in those areas that needed it, and you contained the smoke.

Carter: We also kept all the redundant feeds going by being able to isolate them at the spokes. We could have taken additional damage and been able to backfeed through many areas. The plant getting back up within 18 minutes of dropping the load—I knew how we were reacting, but the plant was supporting us with everything they could possibly do, ensuring that we were able to deliver the chilled water and keep the mission going. That wasn't by accident, but a conscious thought of what was going on, of the intensity of what was going on in the occupied halls and what we imagined they were trying to do, to take off part of their worry about whether they needed to get out of their offices. As soon as they were comfortable that they could stay there, then 100 percent of their focus wasn't on what they would do from there. It was our intention to allow them to focus their time on other than the Building events; we would take care of those.

Putney: When the plane came in, it hit that generator by the helipad. That wasn't in operation at the time, it was a backup emergency generator for Wedge 1?

Carter: Yes.

Putney: Was Wedge 1 hooked up to the rest of the power systems in the Building? In five days something was going to happen that was significant, the end of Wedge 1 construction, were the contractors going to do something?

Carter: It may have been completed and the major contractors moved out, but that shouldn't have changed any of the power configurations. We are now building 20 megawatt backup power stations, but they have no connection into Wedge 1 and it will probably be a couple of years to have that activity.

Putney: Wedge 1 was up and running, with lights and power, operating offices, and it was tied into the rest of the Building. There was that emergency generator out there in case Wedge 1 lost its power. Was it just for Wedge 1?

Carter: Yes, it is the life safety power that is necessary to have to occupy the area. If it is lost, it means that your egress lighting to get people out of the Building, backup power for critical systems to keep them operating, backup power for the telephones, communications, your data room, are lost. That's why when it went, there were massive areas that were totally dark. Even exit lighting was knocked out, because the generator went first.

Putney: Does each wedge have its own backup power system?

Carter: In the old Building configuration each wedge has its own. We are moving toward having a central backup power plant that will provide all of this, and the locker that feeds this will be protected and the generators won't be sitting out in the open. All the others are within hardened areas of the Building.

Putney: As the afternoon wore on, what did the center court look like? [End of tape on side 1]

Carter: The center courtyard was strewn with debris. We had brought out the response team from the Building Manager's Office to decontaminate and collect any medical supplies that had been left. We were trying to get liquid for the fire department and the people. We had already gone through the small supply that we keep on hand and the Defense Protective Services' water. They had opened up soda machines and everything they could to get fluid for firefighters and response personnel. It was very tense, but also kind of numbing. After a while it gets surreal, wanting to do things rapidly but there isn't anything to do rapidly. We started staging stuff and getting it ready so that anything the fire department needed we were off and running. Kathy Greenwell and various people were distributing hard hats for anyone in the area. That was the first time I noticed the bits and pieces of debris of the plane that had blown all the way into the center courtyard and were marked and tagged. Hearing the fire department and all the communications back and forth . . .. There was a tremendous sense of loss or indignity that something like this could have happened. Also, we were trying to reassure people on our staff that things were okay, and some were trying to get out to get a call home to let people know they were okay. Doing fine tuning types of stuff, identifying areas that people had pulled pull stations and gone back and resetting them. Trying to get assessments—some of our people, Dennis Smith and Charlie McCormick were calling in assessments from where they had suited up into their fire gear, trying to get down in the steam rooms to try to get an idea of what was going on. Making sure we didn't lose any other critical systems due to the water pouring in on them; making sure there was no further damage; assisting fire personnel in different areas; going through the maps for the layout of the Pentagon, different areas that they

were looking at or questions that they had. We were starting to set in for what we knew would be a long affair.

Putney: What function does the steam have for building operations?

Carter: The steam provides hot water for sinks, showers, cafeteria, kitchens; also some steam is used for humidification and dehumidification cycles on the air handlers and equipment. We also have the hot water units used to knock the chill off the air in the morning, basically hotel service.

Putney: Is the steam connected to that air ventilation system? If the steam system is badly damaged could that affect your ability to control the smoke?

Carter: If we had to shut down an air handler because a coil had ruptured or something, until we got it isolated. We were more worried about where pipes passed through areas that might have broken and be spraying steam, because steam displaces oxygen. Also, the chance of the firefighters going in with steam pipes broken and be injured.

Putney: So that was your primary concern about that, near the destruction area, making it less difficult for the firefighters do to their job or even the search and rescue people going into that area.

Carter: Yes, especially when you can see where pipes had dropped out of the ceiling, maybe they weren't leaking but someone could bump one and get live steam. It's immediate to get that out of the area, it's not needed for anything in that area under those conditions.

Putney: Did you leave the center court at any time, called to meetings with officials in the chain?

Carter: We did those on the phone. The building manager was probably in meetings, and I would imagine Mr. Haselbush and Mr. Newton and Mr. Irby were in meetings. They basically knew what was going on. I was available and I answered questions—millions it seemed like, but my job was to provide a direct one-on-one communication with the incident commander, and if they have questions I can get answers. I also know exactly what is going on with all the Building systems, and we use double verification—when I call something like shut down a system they repeat it back so I am sure that's what it is, and when it is done they repeat back that it is done, and I repeat back what I understand that they said. So at any given time we are aware of current conditions, and I am the focal point with the BOCC and service. They also had taken notes and maintained a hard copy of the condition of every system.

Putney: Did the FBI arrive on the scene soon, and did you have any interaction with any FBI personnel?

Carter: I was in a very protected inner courtyard world. I understand that was all happening on the outside with all sorts of who was in charge of who and what. Once the incident commander of the fire department arrives in the center courtyard, as far as we are concerned, he is in charge of all the systems in the Building. At one point he was unaware that we were still maintaining the section of the Building, and he was under the impression at first that we were evacuating the whole Building. Once he understood the situation, we discussed what was probably going on and the criticality of keeping those areas up, he deferred to our opinion several times on what to do with ventilation patterns, but for the most part when they come on board it is their Building; they tell us what they want and we do it.

Putney: I gather that FEMA people were on the other side. Were there FEMA people that you remember being in center court?

Carter: No. I believe we had some Red Cross and Salvation Army people there later into the day. We had a contingent of a chaplain's staff that was wandering through. I guess the FBI and all of them did a perimeter security review and wrapped up everything inside neatly. I had no idea of the extent until 11:30 that night when I finally got outside the Building to take a look. My imagination had not nearly prepared me for what I saw, and I thought it was bad. When I went in there it was horrendous.

Putney: Yes, and it was still burning.

Carter: Yes, for the next couple of days.

Putney: Did the fire department fight the fire through the night?

Carter: They pulled off because of safety. They had gone up and looked at the construction on the fifth floor on the inside and saw insulation matting material and thought that was what was directly underneath the wood on the roof and the shingles. Which, in fact, it's not, there is concrete. Once they found that out, they were much more comfortable. They felt unsure of the structure. With the intensity of the force against the Building, they were afraid to continue in there with the visibility and fire and all the unknowns, until the next day. I deferred to them on the knowledge of those things. They were concerned about putting their people in harm's way.

Putney: Did you walk out front to see it, were you with anybody, were you on your way home?

Carter: Kathy Greenwell and I were getting ready to take a break and went around to that area of the Building, with the lights over there, and all we could see were plumes of

smoke. I have a two-hour commute each way, and I don't know if Kathy slept that night. I nodded off out of exhaustion for a bit and woke up in a panic because I smelled the fire, but it was the clothes I had worn the day before.

Putney: So you got home that morning and you came in early?

Carter: I got home around 2:00 a.m. and was back on the road by 4:00 a.m.

Putney: What was it like coming back? From where you were approaching it could you see?

Carter: I was coming up across I-395, and it was bad. The lucky thing was they got us in rather nicely. Of course at that point we went to the Joint Operation Command Center (JOCC), and they moved me over to Fort Myer to continue operation of the Building. Once I got in here and checked in and got briefed, I had been through a lot of security checkpoints, but people had identified me from the day before. About midnight they had set up the JOCC, so after I was briefed they whisked me over to the operations center at Fort Myer, and we were busy getting computer systems set up so that we would have e-mail traffic plus the Building operations computer systems set up over there to provide the FBI and fire department with gas concentrations down in the center courtyard tunnel, the positions where we were bringing fresh air in, shifting stuff around, trying to pull smoke out of an area or keep an area clear.

Putney: You can do that from such a remote site as Fort Myer?

Carter: We knew we had the potential capability, we knew the system would do it, but that was actually the first time we had taken the Building to a remote location and run it.

Putney: Does this system have a name?

Carter: METASYS.

Putney: Is that an acronym?

Carter: That's the name.

Putney: What company controls it?

Carter: Johnson controls.

Putney: How long did you function at Fort Myer?

Carter: I was there for the most part of a week. I was putting eight or ten hour shift there and coming back to the Building and doing what I could here. I would slide out for a couple of hours and go back to the operation. We did that, a shift over at the JOCC, a shift over at the Building, and get a couple hours of sleep, and do it again. On the fourth day we were still having flare-ups. Things were being discussed, and they decided they wanted me back in the Building at that point to start working with the renovation to map out how we were going to run recovery. Then our people had access so we could start restoring systems in areas of the Building. That's when I rotated back. The FBI were there. PenRen had a person on shift, as did the fire department. It was a big command center for everything that was happening. On Wednesday they had the prayer service, and Fort Myer was going to fire the cannons to give a 21-gun salute. We found out a few minutes before, and knowing the current nerve conditions, we started making frantic phone calls to the people. There was also a FEMA plane coming in on day one or day two, and they called in additional aircraft inbound, the fire department started pulling out. It was actually a FEMA plane, and they had started an evacuation of the Building, and we were trying to halt it. We were getting the groundwork down, communications. The Naval Investigative Services were

there; the Military District of Washington had all the military security going on. It was the command and communications point.

Putney: Yes, and you can get answers being over there.

Carter: And provide information about what areas had asbestos and what areas didn't. We could also give them CO readings in the tunnels where they had people so they would know if they needed air tanks or not.

Putney: Are there any lessons learned that you've thought about?

Carter: Many. We need an ability to be able to release some of the windows or have breakable glass. We need to treat some areas of the Building as a high rise due to the difficulty of getting fire equipment in. We need to look at enhancing our abilities to do remote operation of the Building systems, mainly so you don't have to put a person in harm's way. We know that we can't just walk away from this Building like a normal office building—just pull the utilities and walk away. If we only have one area of the Building that we can keep running, we have to be able to keep that running and relocate resources into that area. We have to encourage Pentagon Renovation to look at it from the standpoint that it is not a six million-square foot office building with a million square feet of special space, but that six million square feet support the million square feet and therefore is almost as vital as that million. Educating people moving into new areas of the Building. A lot of times we do things so that we don't encumber the occupants, do things out of their way, but we are going to be running fire drills in new areas of the Building and deploy the smoke doors as part of normal activity so that they have to use them to get around, so they are familiar with the touch pads on them to open the doors. There will be a lot more emphasis on conducting real evacuation drills instead of, "This

is what it will sound like and let us know if you don't hear it." We need to make sure that people know how to get out of the Building or out of an area. We need a big push on the review of what agencies do to space, because once it's turned over to them, many times they create their own walls, cubicles, and mazes. Now we will make sure that their area meets code, is safe, and has safe egress. We understand the value of a square foot in the Pentagon and the need to put as many people into an area as possible because everyone feels they need to be close.

Putney: I gather that was some of the difficulty for some people getting out. It became a labyrinth.

Carter: The mazes of furniture. In the new area especially, now that they have computer generation cad and can maneuver furniture to try to squeeze a person in every square foot possible, but then density levels were probably way more than what they should have been. The way they measure distances. In renovation when they turn an area over, they were measuring from the front door of the suite, sometimes that being the actual outer area into the ring, instead of measuring distances from the farthest private office or cubicle area in a space. Before it was the agency's prerogative to do this in their own space, but now we realize that some agencies have a different bottom line goal, and we do have a role in making sure that when bad things happen we can safely move people in and out of areas. That's just a few. Every time I lay my head down on a pillow I think of a couple more.

Putney: Do you see anything good coming out of this tragedy?

Carter: I am a very cynical person, and usually had the worst views of people. I am a firm believer that when a person is down, there will be a line of who gets to kick him

next. But I have seen things during this event where people were tearing their shirts off and dipping them in water and putting them over their heads to go back into a smoke-filled area after they had gotten out safely to go back in and try to help somebody. Not even somebody they knew, just anybody. I watched people with no training doing everything they could—the empathy, the sympathy. We will survive. I saw people doing good for good's sake, not for show. The big tent erected by the Baptist church from North Carolina that started setting up and producing meals around the clock for three weeks or so; McDonald's; Burger King; Home Depot opened its doors and told us to take any tools or equipment we needed; a man who owned a lighting firm in Iowa sent a lighting truck to us which arrived the first night, out of his own pocket, and continued to provide lighting for two weeks with 120-foot booms with lights that light up the whole side. He sent a second truck at the same time, but it wasn't needed so he rerouted it up to New York City to assist there. All the cards, all the sheets, with pictures, handprints, everything that schools and people all across the nation sent. The construction fence around the demo area was covered, the inner fence was covered, the fence around south parking with all the food places and the supplies were covered, the hallways in the Pentagon were covered. We heard that elementary school kids were donating any money they could. I don't ever recall in my lifetime when America rallied around each other, and for one time in my life, it didn't matter what race, religion, creed, or sex, it was an overwhelming reaching out to humanity and a pride of being American. To hear on the news going back and forth, about some high school group selling T-shirts that had "One Nation under God" written on them, the school board prevented it, and a court actually overturned the decision. In a blink of an eye or a flash

of a second I think we reevaluated a lot of our values in this country. It caused us to stop and take a breath. It was an important breath, and we refocused some of our attitudes and convictions to a point where countries aren't bad, religions aren't bad, but individuals can be very bad. Our attentions should be focused on a war of humanity against terrorists that do acts with no reasonable explanation to strike out, to kill individuals, kids, husbands, wives, for military or no military importance, such as the Twin Towers. The price we paid was great, but maybe in lives saved we will never know, whether from different construction practices, different control strategies, or different ways to respond to events.

Putney: Is there anything else that you would like to include on the tape?

Carter: I believe that, number one, the occupants of the Building performed admirably. I didn't see any hysteria, but an organized chaos that was much better than anyone could have dreamed of if someone blew up a building with 28,000 people in it. I think the staff of the Pentagon Building Management Office responded in a way that was second to none, especially after many had seen what happened in New York City and the word of the collapse of the Towers and the firemen that were trapped. Yet the result was that they stayed with this Building. We heard people talking about "she's hanging in there, it's a good Building." It was a rally around what they could put their hands on. A lot of what was done here I credit to a fortitude that people reached inside themselves and brought out, that they didn't know they had. I am proud to be associated with the Pentagon and the government employees that have been kicked around for so many years. It's like they say, when times get really bad, the American

public turns back to federal workers with respect. I've see those federal workers deserve that respect.