

September 11, 2001: A Thermographer's Experience at Ground Zero

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Abstract

As practicing thermographers, we expect each day to provide new experiences and teach new lessons. September 11, 2001, taught every American a life-altering lesson. This paper presents an account of that day by an ordinary thermographer who was working across the street from the World Trade Center that morning and suddenly found herself in an extraordinary situation. This paper details the thermographer's thoughts and experiences while making the long journey home.

Introduction

It was Tuesday. The sky was an incredible shade of blue without a cloud to be seen and the haze that so often hangs over the New York/New Jersey metropolitan area was gone. The temperature was comfortable, the humidity was low. It was an absolutely gorgeous day. It was September 11, 2001.



I had worked in lower Manhattan the day before, starting an infrared electrical survey which would be finished by noon on Tuesday. It made me particularly happy to know I would be beating the rush-hour traffic leaving Manhattan that day. I was working in a building situated on the corner of Church Street and Barclay Avenue – about a block north and across the street from the twin towers of the World Trade Center.

Built between 1966 and 1973 at a total cost of \$400 million, the North Tower - One World Trade Center and the South Tower - Two World Trade Center, were 1,368 feet and 1,362 feet tall, respectively. The World Trade Center towers were the two tallest buildings in the world until the Sears Tower in Chicago was completed in the mid-70s. Each tower had 110 stories, 104 passenger elevators, 21,800 windows and roughly an acre of rentable space per floor. Because the towers were built on six acres of landfill, the foundation of each tower had to extend more than 70 feet below ground level to rest on solid bedrock.

The easily recognized communications antenna was on the North tower; from the observation deck on the South tower, it was possible to see 45 miles in every direction. Each tower swayed approximately three feet from true center in strong winds.

On Friday, February 26, 1993, a bomb was exploded in the underground garage of One World Trade Center, creating a 22-foot-wide, five-story-deep crater. Six people were killed and more than 1,000 were injured. The towers were cleaned, repaired, and reopened in less than a month.

The resiliency of the North tower after February 1993 made both towers seem invincible...

Normal Becomes Surreal

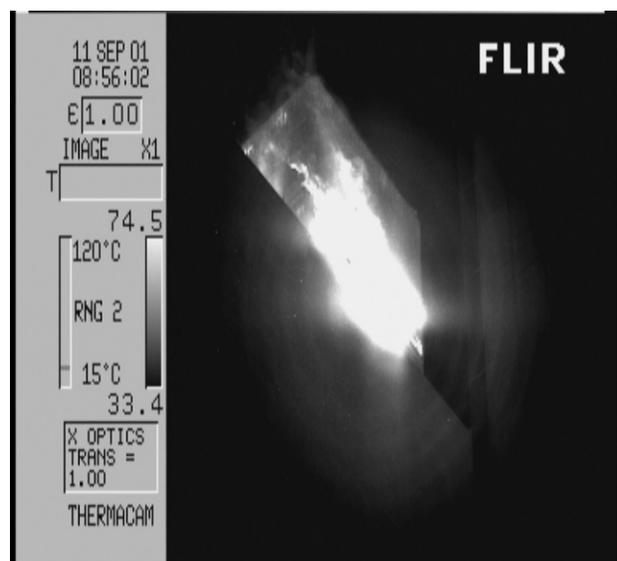
I was on site and ready to begin the day at 7:35 a.m. As normal, I took my equipment from the truck, grabbed my lunch bag and walked in the side entrance of the building. I signed in with security and took the elevator to the 2nd basement to get set up. We got started around 8:40, going to the lobby level where we had left off the day before. The elevator doors opened and someone said, "Hey Bob, did you hear that?" Neither of us had heard anything, so we just chalked it up to a big truck going a little too fast. A common happening in New York – most people who spend any time there don't even hear it. I distinctly remember looking at the clock in the lobby – it was 8:44 a.m. We went into an electrical closet and I scanned the open panels. Bob told me he was going to go check out the noise. I told him I was done scanning and was curious too, so I'd go with him.

We walked through the lobby and outside onto Church Street. For anyone who has never been there, the streets in lower Manhattan are not very wide and it really is like a concrete canyon. Everyone on the sidewalk was looking up at the north tower of the World Trade Center. As I looked up, I saw fire and smoke coming from a gash in the side of the north tower as well as a lot of paper floating down to Church Street.

Because the Trade Center Towers were just over 1/4 mile high, looking up from the ground made what you were looking at appear small. No one in my surrounding area knew for sure what had just happened. There was talk that a small plane had grazed the building or there had been some sort of explosion. None of us felt particularly unsafe. After all, this is America and nothing resembling what happens in war-torn countries ever happens here.

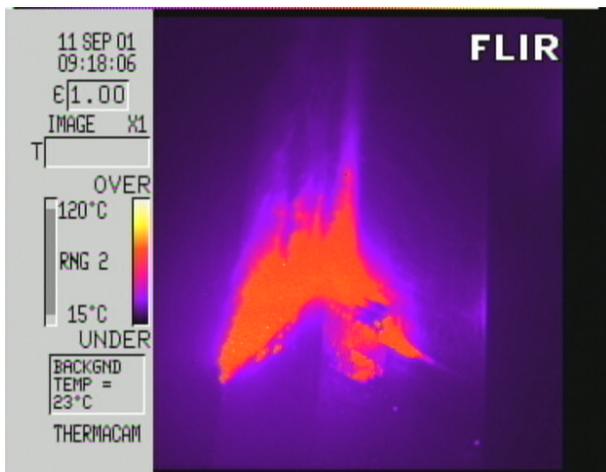
It finally occurred to me that I was still wearing both an infrared imager and a camcorder and should tape what was going on. I recorded for awhile, then decided to see if I could take a thermal image. Due to the heat I was not able to get a temperature or even a good image, but I snapped two thermograms from ground level anyway.

At about 8:59, I decided it was time for me to stop wasting time and get back to work. I knew it would be a long day for the firefighters, but I had a job to finish. I worked my way through the crowd and back inside the building and was told to meet Bob in the 2nd basement.



It was at that moment - no more than a minute from the time I walked back into the building - that suddenly people were stampeding up the streets. I saw this through all three sets of lobby doors and wondered why people were all of a sudden running. Still not comprehending what was going on, I got on the elevator and went downstairs. When I got there, everyone was gathered around the TV. They said the report was there had been an explosion in the south tower. We watched, but from the vantage point of the newscast, we could not see it was a plane that had been flown into the tower. I didn't find out for sure what had happened until much later.

I said I'd like to get a better look - but not from the ground. Everyone else in the room agreed, so we took the elevator to the 11th floor and went onto the roof. There were about five of us there - just watching. We were all trying to use our cell phones, but the circuits were jammed, so no one was really sure exactly what had happened. As we watched, people were jumping or falling out of the north tower. None of us could understand why. We saw a few people at about the 105th floor waving a white cloth out of the window. They seemed so far away, but when you realize that although it's only a block away on ground level, the towers were just over 1/4 of a mile high. I began taping again but didn't fully understand the horror that was going on right in front of me. Everyone on that roof felt as if they were watching a movie. We still didn't feel we were in imminent danger.



As a thermographer, I felt compelled to add some thermographic images to my tape. In addition to the running tape, I snapped two more images: one of the north tower and one of the south. It did not occur to me, until someone said it later that day, these might be the only thermograms in the world of this event. The world had taken a turn for the surreal - it now seemed as if we were in the movie - not just watching.

The real world broke in and my pager went off. Someone from my office was trying to reach me, but I just wanted to watch what was

happening and knew I would have to go down to the basement to get a land line. Five minutes later, my pager went off again - this time 911. It finally occurred to me that I should let my office know I was safe. I went back down to the basement and was able to get a land line to call the office. It was decided to call it a day and arrange to return next week to finish the job. It was decided I should take the equipment with me, make arrangements to leave the truck overnight and walk over the Brooklyn Bridge, where I'd be picked up. The intention was to go back up the next day and retrieve my truck. A co-worker of mine was in the Bronx that day, so the plan was for him to drive into Brooklyn and pick me up or, as an alternate, I would take a taxi and meet him in the Bronx. I was asked to notify the office when I was on my way. Knowing cell service was hard to get - if not completely down, I told the office I'd call when I could get a line.

As I was packing up my equipment, someone ran into the office where I was and said an airplane had just hit the Pentagon. Hearing that, I began feeling a little nervous but was not in a panic or in a great rush to get out of there. Remember, no one there was sure a plane had hit the north tower and we all still thought the south tower was burning due to an explosion. I was told the only way out of Manhattan now was on foot. The announcement to evacuate the

building came over the PA, so I got my gear together, washed up and took the elevator to the lobby, which was swarming with FBI agents. I remember wondering how so many of them had arrived so quickly. An agent had blocked off the exit I needed, so I told him I had to make arrangements to leave my vehicle which was parked across the street. He told me to go -- but be careful. I exited the building and crossed the narrow street over to the parking lot. The noise level on the ground was much higher than it had been on the roof, but I still didn't feel as if I was in much danger. It was about 9:55 a.m.

The lot attendant saw me and came over. That day happened to be election day in New York, so there were only a few cars in the lot. He said I could leave the truck overnight and retrieve it in the morning. He only asked that I move it against the back wall. Before going to move the truck, I changed from my work boots into my sneakers – something I always do, which was a very lucky thing that day, I was soon to discover. The attendant walked back to me and said that they were letting people drive out onto Church Street going north so, if I left immediately before the area was overrun with emergency equipment, I could drive north and find some way off the island. I opted to go with that plan and locked the equipment in the box of the truck and opened the door. An FBI agent was yelling for quarters for the phone – funny how loss of cell service affects everyone – even the FBI.

The South Tower Falls

It was about 10:00 a.m. when I opened the driver's door and was ready to get into the truck that I heard an unbelievable cracking sound behind me. I turned toward the sound, and the only thing I could see from the lot was the southeast corner of the south tower. I watched it buckle and start to fall. It looked as if it were coming directly towards me, in slow motion. It finally dawns on me I am really in danger and the adrenaline kicks in along with reflex actions. The reflex was to run – I remember thinking the building was tipping over – not coming straight down. I ducked under the sideview mirror and ran east on Barclay Street. There were about a dozen people on that little street with me and we all starting running.

I still had plans of using the Brooklyn Bridge, but as I got to the corner of Broadway and Barclay, I would have had to go straight. I looked south down Broadway and saw an extremely high, billowing cloud of smoke and debris coming towards me like a tidal wave. I stopped to consider whether I should go across Broadway towards the bridge or duck into a doorway that was directly in front of me. I then looked down Barclay and into that same cloud. There was no time to think – the survival instinct kicked in. Someone screamed to run north, so I took off up Broadway with the debris cloud closing in fast. It was like trying to escape from a runaway freight train. When the cloud caught up, breathing was nearly impossible. The smoke burned my eyes and my throat. I had my fist over my mouth and nose trying to catch a breath of air that was not thick with debris or smoke. Every



so often, I came into a void area in the smoke and was able to get a whole breath, but then the void was gone and I was back in the cloud. This lasted for what seemed an eternity, but in actuality was probably about two minutes. There were people all around me, but I felt completely alone until I could see again. When we emerged from the cloud and started walking, the police were yelling for us to get into the street and keep running. I asked why and was told we were in front of the Federal Building and were still in danger. I ran a total of about eight blocks and then slowed to a walk. There were many people on Broadway with me – the sidewalks and street were full, but there was no panic. Almost everyone I saw looked single-minded. Our goal was to get off the island of Manhattan. I considered going back for the truck but thought better of it. There were rescue personnel passing me going down Broadway with that same single-minded look.

Getting Home

Many of us were walking backwards, just watching, but all we could see of the north tower was the antenna on the roof. I got to Canal Street and stopped for a minute to catch my breath and considered heading back down and over the Brooklyn Bridge. However, we were still being herded north and I found it hard to think of anything other than what had just happened. I finally decided to meet up with my co-worker, Dick, in the Bronx.

I knew I had to check with my office because they would have known the south tower fell around the same time I was supposed to have been on the street. I was at 4th Street and felt there was no possible way for me to walk all the way to the Bronx, which I knew was in the 130's block, but I figured I'd walk awhile and then get a cab.

At about 10:15, I turned around and could still see the antenna on the north tower. Around 10:20, I looked back down Broadway and could see the Woolworth Building, which was just behind where I was working. The whole bottom half was covered with the debris cloud, but the upper section was visible -- then it wasn't. I thought the north tower had collapsed but was not sure. No one on the street knew. I felt utterly alone in the middle of a huge crowd but also knew I was now part of the one being which the whole city of New York had become that day. People were parked on the street with their car doors open and their radios blaring the latest reports. We would gather and listen for a minute, then move on. Around 10:25, I gave up trying the cell phone and decided to stand in line for a public phone to call the office. Once I got a phone, all I could get was the fast "all-circuits-busy" signal. I continued walking north on Broadway, which turned into Park Avenue.

My lungs were full of dust and I knew I needed some water, but I just couldn't make my feet stop for that. The Empire State Building was now to my left and the MetLife Building and Grand Central Station were directly in front of me. Knowing they are also prominent buildings in Manhattan, I really started to feel unsafe and needed to get off Park Avenue. I had thoughts of going to Grand Central Station and getting a train or taxi north but just couldn't do it. I stopped just short of Grand Central and finally got a bottle of water from a street vendor. I turned right and walked to 3rd Avenue.

I stood in line again for a phone and was able to get a line on the first try. I checked with my office and let them know I was safe and at 54th Street. I told them I'd try to catch a cab and meet with Dick in the Bronx. As it happened, that was much easier said than done. The traffic, which had been mostly pedestrian, was suddenly bumper to bumper vehicles – all gridlocked. I

figured I was better on foot anyway. Once the traffic thinned out, every cab that passed me was either taken or off-duty.

By now, I was running on autopilot – I'd look back downtown every once in awhile and just see the smoke in the air. Some people were in the street aiming cameras downtown, but there was only a distant cloud of dust to be seen. I went past numerous subway entrances but couldn't even entertain the thought of going down there. Besides, I was pretty sure they were still not running. By the time I got to 82nd Street, I was starting to get out of midtown. I still couldn't catch a cab and thought I might have better luck on Park Avenue, so I walked over there.

At about 1:00 p.m., at the corner of Park Avenue and 85th Street, I thought I'd try my cell phone again because I still had to let my ride know where I was. To my relief, cell service was back up. I told him where I was and he said to find a place to sit and wait. He'd drive into Manhattan and get me. There was a church on the west side of Park, so I sat there on the steps, in the shade. I called my mother and my son to let them know I was safe. They were able to give me bits and pieces of what had happened and what was currently happening, but I wouldn't get the full story until later. My ride called me around 1:50 and gave me the bad news that no one was able to drive into Manhattan. I would have to walk out. We decided I'd walk to the 3rd Avenue Bridge.

Every so often during my walk, I would hear F16 fighter jets overhead. This sound made me stop – it made everybody on the street stop and very nervously look up and cringe. It was then that I realized an F16 and a falling skyscraper make a very similar sound. I found out later that they were flying circles over Manhattan trying to protect the airspace from any further attacks. I was now in Harlem and was starting to hear snippets of conversations from women complaining about how many blocks they'd walked from midtown after an aborted shoe-shopping trip. It seemed odd they were talking about buying shoes. I stopped and got another bottle of water. It seemed no matter how much I drank, I literally couldn't get the taste of the World Trade Center out of my mouth. Reality was starting to come more into focus and I realized my feet were screaming and I had sharp pain in my side, but I kept walking. The need to get out of Manhattan overrode any discomfort I was feeling.

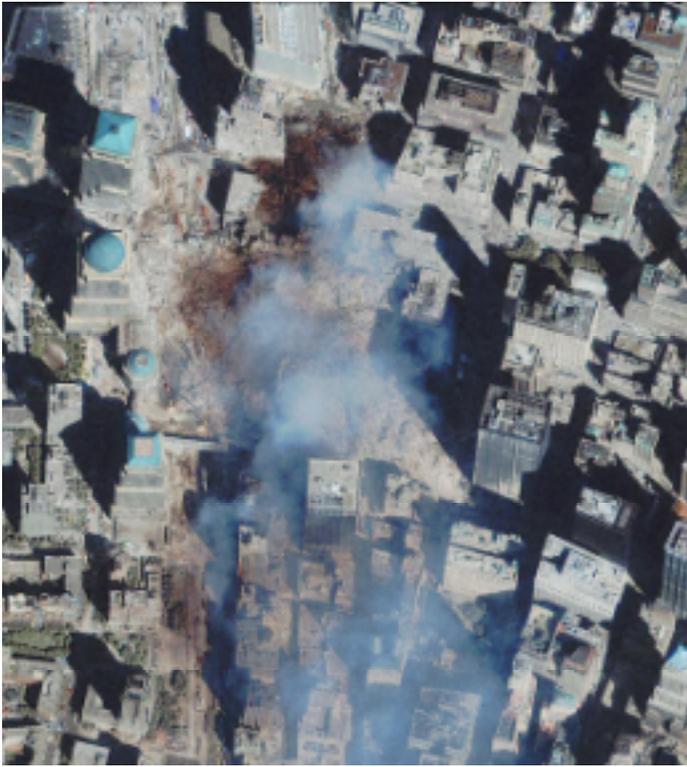
Where 3rd Avenue starts to go over the bridge, there is a parochial school. The students and teachers were out on the sidewalk passing out little cups of cold water. That struck me as so un-New York like. It seemed to me that they thought they were doing the only thing they could. It was foot traffic only on the 3rd Avenue Bridge, and the nearby Triborough Bridge was open to outgoing traffic only but was severely gridlocked. At 2:30 p.m., I crossed the 3rd Avenue Bridge and met my rescue driver, Dick. I'd never been so happy to see a familiar face.

The street sign read 3rd Avenue and 135th Street. I had walked about eleven miles in just under four hours. I remembered standing at the corner of Broadway at 14th thinking there was no way I'd be able to walk into the 100's block, but here I was. I worried about the men I had left at the job site. It wasn't until the next day that I found out the building was still standing. We sat in the car for a few minutes trying to figure out how to get out of the Bronx. Traffic cops had no idea what was open and what was not, but we hoped the Tappan Zee Bridge, being farther north, was open. It was and we got home in record time.

No matter what you think you would do in a certain situation, until you are faced with it, you just don't know. My instinct was to run and save myself. Luckily, I was able to do just that. My number wasn't up on September 11 and I got to go home. Too many others did not.

The Day After

I was back at work the next day because I needed to be around people. That same day, my manager went into lower Manhattan with the plan of seeing whether an infrared imager would be of any help in locating victims. Unfortunately, it wasn't. There were too many mountains of



concrete and debris and too much heat. He was, however, able to retrieve the truck and equipment I had left behind. He says he came around the corner and there it sat...intact, covered with dust and debris, but intact. It started right up but was so clogged with concrete dust and debris that the air-conditioning fan wouldn't turn. The truck spent a week in the shop being cleaned and fixed but is now running fine. The equipment that had been locked in the workbox was not damaged at all.

Things get easier as time moves on. Many memories of that day still upset me, but I'm thankful both that I'm alive and that the towers didn't come down immediately. If they had, I believe the death toll would have been in the tens of thousands because I remember how many people were running from the area for the hour before the south tower fell.

My Return to Ground Zero

By mid-October, my site contact was ready to finish the job we had started on September 11th. I let my manager know I wanted to be the one to go back – it had become a mission for me to complete this job. On October 25th I returned to the job site – now a part of what had been dubbed Ground Zero by the news media. As soon as I got to Broadway and Canal Street and opened my truck window, the smell hit me. It brought back all the memories of that day and again reminded me how lucky I was to have gotten out. They were wetting the streets down to try to keep the dust under control, so it made the smell of pulverized concrete even worse. I got as close as I could in the truck, then parked and walked the rest of the way. There was no problem walking into Ground Zero. The roads were all barricaded, but the sidewalks were not. Since I knew I was going to be late, I had called twice to give them my progress and when I finally walked into the building, security was waiting for me and said how happy they were to see me again. I went down to the Engineering office and met with my contacts. It was like a family reunion. The first thing they asked me was where was my tape from that day. I had completely forgotten I was supposed to send them copies.

The first thing that caught my eye in the office was a cylinder shaped object on the top shelf of the wall unit. I asked what it was because I knew it hadn't been there before. This story was to

be the first of two close calls I didn't even know I had. They said it was part of the plane that hit the south tower. They found it on their roof in the same section where we were standing. Evidently, it was there while we were on the roof but none of us noticed it. The piece was at least four feet long and was heavy. The building I had been working in only sustained minor damage - some windows along Church Street had been blown-out. Obviously, on that floor, everything had to be cleaned and/or redone due to the dust and debris. The Army Corps of Engineers had checked the structural integrity of the building and declared it safe. Those dedicated maintenance and engineering men were back in that building a week after the 11th.



Later on, my contact asked me where I had been after the first plane hit. He knew we were both standing on Church Street watching. I told him I had been on the sidewalk but went back inside the building about a minute before the second plane hit. I realized I'd had my second close call when he told me he'd been standing in pretty much the same place as I had been and was talking to a man about four feet away from him. When the second plane hit, he watched the man's white shirtsleeve go red – he'd been hit by shrapnel. Had I not gone inside, I might have been hit by flying debris or likely trampled in the ensuing stampede since my mobility was limited by my camera equipment. He also asked me where I had parked. I told him I had left my truck in the lot across the street and we came up the next day and were able to get it. He told me I was very lucky to even get the truck and equipment back – had I parked on the street, the vehicle and equipment would have been gone. Apparently, within 24 hours, they bulldozed every vehicle off the streets to clear the way for the big emergency equipment.

The silence in lower Manhattan the day I returned was deafening. There were quite a few people standing around, just looking, but all were quiet, respectful, disbelieving. Being there was something I had to do that day. There is still a part of me that doesn't believe this happened, and I saw it in person. Although I refuse to live in fear and hide under the bed, I am much more aware of my surroundings these days.

Conclusion

We, as a country, have lost our innocence, but life goes on...

We, as citizens of the world, must adjust to the new reality that America is not immune from terrorist attacks.

We, as Americans have banded together and gotten stronger – the exact opposite of the intentions the terrorist cowards had for us.

We, as human beings are now all too well aware that life, as we know it, can change in a New York minute...

Acknowledgments

The author wishes to thank everyone at Jersey Infrared Consultants for their concern and their prayers for her safety and well being that day and in the days to follow. A special note of pride and appreciation is also extended to everyone at the job site who refused to be knocked down by this and were back at work as soon as possible, and willingly shared all the pictures they had in the preparation of this presentation.

We continue to pray for those lost on September 11 and their families. We look to Heaven for strength, wisdom and guidance as we move forward more keenly aware of our daily blessings.

