

Mysteries of the Twin Towers

A Survey of Available Evidence On the Collapse of the World Trade Center Towers

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The WTC Complex [1]

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Background

According to media reports, American Airlines Boeing 767 Flight 11 crashed between floors 94 and 98 of the North Tower at 8:46 a.m. The North Tower collapsed at 10:29 a.m. According to media reports, United Airlines Boeing 767 Flight 175 crashed between floors 78 and 85 of the South Tower at 9:03 a.m. The South Tower collapsed at 9:59 a.m. Crash and collapse times are based on seismic data from the Lamont-Doherty Earth Observatory in Palisades, New York. US Department of State times were essentially identical, except time of collapse of the South Tower was given as 10:05 a.m., rather than 9:59 a.m. According to the State Department, 92 people were on board Flight 11, and 64 people were on board Flight 175. [2]

Architect Minoru Yamasaki was commissioned to design the World Trade Center with the New York firm of Emery Roth and Sons. Structural engineers John Skilling and Leslie Robertson of Worthington, Skilling, Helle and Jackson (WSH&J), the Seattle based World Class structural engineering Firm of Record, worked on the project. This firm is responsible for the structural design of many major modern structures, including Columbia Center in Seattle. [3]

Some sources have suggested the new “tubular” design of the WTC Towers made them structurally suspect [4]. Others have suggested the WTC towers were otherwise “vulnerable.” [5] However, their “tubular” design creates a very strong and resilient structure, and continues to be very successful. [6]

The horrific “collapse” of 1 and 2 World Trade Center, the “Twin Towers”, was the key event of the attacks which has provided the Bush administration almost limitless power to do as it pleases, merely by

invoking the phrase "Remember 9/11". That power was solidified by the passage of S.J. Resolution 23 on September 14, 2001, authorizing the President to "use all necessary and appropriate force against those nations, organizations, or persons he determines planned, authorized, committed, or aided the terrorist attacks that occurred on September 11, 2001. [7] We now have perpetual war, wiretapping, extraordinary rendition, torture, the "Unitary Executive", the Military Tribunal Act (which effectively creates an American dictatorship), billions in profits for the military industries, and world-wide angst.

So, why did the towers collapse? By now, six years later, we should have a definitive answer, but we do not. We have the American Society of Civil Engineers (ASCE) study, the Federal Emergency Management Agency Building Performance Assessment (FEMA BPA), the Silverstein reports, the 9/11 Commission Report; the National Institute of Standards & Technology (NIST) reports, the so called "Purdue Study," and ARUP commentary.

Although these reports vary in details, and in some cases contradict one another, what we finally have is the Official Story, quoted verbatim by the US media: the impact of commercial aircraft and the ensuing fire caused by aircraft fuel led to the collapse of WTC 1 and 2, the North and South World Trade Center Towers, on September 11, 2001. The truth of the Official Story has never been proven but has been implicitly assumed by all of the "Official" investigation reports. David Ray Griffin's book *The 9/11 Commission Report: Omissions and Distortions* discusses this concept as applied to the 9/11 Commission Report. [8]

This paper does not presume to know what happened on 9/11. It merely collects and organizes available information. Although some analysis is provided, it is up to the reader to decide what it means. Section 8 provides a brief list of relevant questions. (Please note that a lot of information is provided in the end notes, which appear in a separate file. Also note that mainstream articles are disappearing from internet archives, so links to original articles may not work. This is especially true for the New York Times. In these cases, links to copies of the articles are provided wherever possible.) Similar studies on 9/11 aircraft may be available at http://seattle911visibilityproject.org/911_aircraft.htm

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ATV Units assist in cleanup September 11 2001 – June 12 2002 [9]

1.0 The Case for Controlled Demolition

1.1 First experts suggest explosives were used.

On September 11, 2001, American explosives expert Van Romero said: "My opinion is, based on the videotapes, that after the airplanes hit the World Trade Center there were some explosive devices inside the buildings that caused the towers to collapse." *The Albuquerque Journal* further noted:

"The detonation of bombs within the towers is consistent with a common terrorist strategy," Romero said. "One of the things terrorist events are noted for is a diversionary attack and a secondary device," Romero said. "Attackers detonate an initial, diversionary explosion that attracts emergency personnel to the scene, then detonate a second explosion," he said. Romero said that if his scenario is correct, the diversionary attack would have been the collision of the planes into the towers. [10]

The next day, Mark Taylor, demolition expert noted in *New Scientist*: "it cascaded down like an implosion." [11]

Webster Tarpley notes European expert sources who immediately suggested the possibility of explosives in the towers. On Sept. 12, the Danish "bomb expert" Mr. Bent Lund stated: "an estimated amount of circa 1 tons of Extra high-explosives Bombs must have been detonated inside the World Trade Center complex in order to make the Towers collapse in the manner they did." [12] Jens Claus Hansen, a high ranking officer of the Danish Military Academy, on 9/11/01 stated in an interview: "Additional bombs must have been placed inside the WTC towers--otherwise they would not have collapsed as they actually did." Former NATO General Keld Hillingsoe in the same interview stated: "Additional bombs must have been installed inside buildings." On Sept 13, 2001, Hugo Bachmann, Professor Emeritus of building dynamics and earth quake engineering at the Swiss Eidgenossische Technische Hochschule in Zurich saw two possible scenarios, and felt that both should be investigated. The first was fire and its effects on the steel supports; the second, an additional terrorist action. The article quoted by Tarpley noted that Bachmann "could imagine that the perpetrators had installed explosives on key supports in a lower floor before the attack." [13]

1.2 Explosives Considered

Why would explosives experts say that explosives were used? Eric Hufschmid, J. M. King, and more recently Dr. Steven Jones, have noted that the explosives theory explains very well the apparent removal of all structural support and the neat demolition-like collapse of the towers. [14]

Dr. Jones notes: “Unlike WTC7, the twin towers appear to have been exploded ‘top-down’ rather than proceeding from the bottom - which is unusual for controlled demolition but clearly possible, depending on the order in which explosives are detonated.” As first proposed by Eric Hufschmid in his book *Painful Questions*, Jones notes that explosives may have been placed on higher floors of the towers and exploded via radio signals so as to have early explosions near the region where the plane entered the tower: “Certainly this hypothesis ought to be seriously considered in an independent investigation using all available data.” [15]

Although Van Romero later “changed his mind”, he still admitted the collapses looked like demolitions [16] This is true in a number of ways. Dr. David Ray Griffin has noted eleven characteristics of the WTC collapses consistent with “Controlled Demolition”: 1) *Sudden Onset*; 2) *Straight Down*; 3) *Almost Free-Fall Speed*; 4) *Total Collapse*; 5) *Sliced Steel*; 6) *Pulverization of Concrete and Other Materials*; 7) *Dust Clouds*; 8) *Horizontal Ejections*; 9) *Demolition Rings*; 10) *Sounds Produced by Explosions*; 11) *Molten Steel*. [17]

1.2.1 Problems with the Dust

Concrete and all other non-metallic objects were pulverized to dust. Rather than a piling up of shattered concrete as we might expect from non-explosive-caused progressive collapse (“official theory”), we find that most of the Towers material (concrete, carpet, etc.) is converted to flour-like powder WHILE the buildings are falling. [18]

Danish video expert Henrik Melvang claims his four hour video shows five distinct “DUST CLOUDS” from Demolition Bombs exploding far below the point of airplane impact within the WTC. [19]

The first event in the collapse of each building was a mushroom cloud of dust above each building. Jeff King (2003), notes: “[A great amount of] very fine concrete dust is ejected from the top of the building very early in the collapse. . . [when] concrete slabs [would have been] bumping into each other at [only] 20 or 30 mph.” As King points out, dust clouds were created far above the impact zones. [20]

What is the energy source needed to produce this fine dust at the beginning of the collapses, before gravity has a chance to do anything? [21]

Using a photograph from Chapter 5 of the FEMA Building Performance Assessment, Jim Hoffman estimated that the dust cloud from the North Tower grew to about 5 times the volume of the building within 30 seconds of the start of the collapse. He then calculated the energy required to allow the observed volume of expansion of dust, and found that it exceeded energy available from gravitational collapse by a factor of 10. [22]



WTC Complex: From FEMA BPA [22]

This is in marked contrast to the official theory which, according to Derrick Grimmer, proposes that 30% of the gravitational collapse energy was necessary to create the pyroclastic cloud of debris. [23]

1.2.2 North Tower Antenna

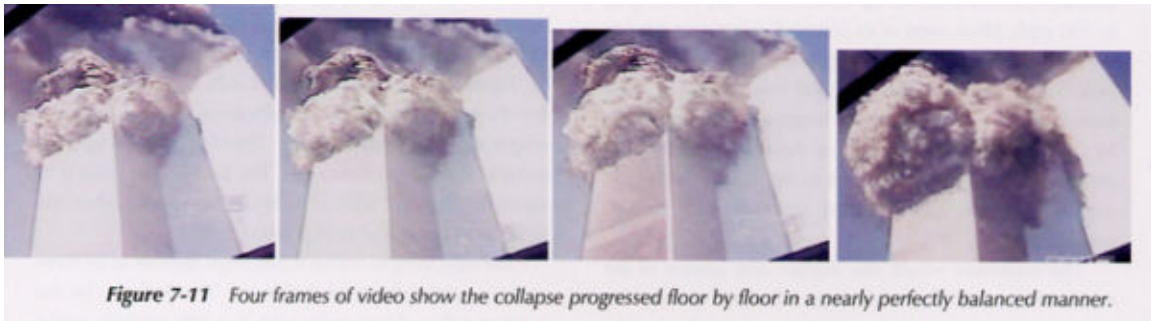
Video frames show that the North Tower antenna droops prior to the adjacent columns prior to collapse. [24] A sinking antenna suggests the building core failed, which is usually how buildings are intentionally demolished.



Frames 5,6,7: the white portion of the antenna at the top of Frame 7 is a bit longer, while the walls have not yet moved. This suggests the antenna, and thus the building core, began to collapse first [24]

1.2.3 Symmetrical, quickly, completely

The collapses progress rapidly, at almost free fall speed, so they are completed in under 16 seconds [25]. The collapses proceed floor-by-floor in a nearly perfectly balanced and symmetrical manner, with debris falling largely within a symmetric boundary around the buildings' footprints. [26]



S. Tower “Collapse”: From Hufshmid [26]

1.2.4 Sliced Steel

Griffin has noted that in controlled demolitions of steel-frame buildings, explosives are used to slice the steel columns and beams into pieces of desired lengths. [27] Controlled Demolition Incorporated, the company selected to remove the rubble from the bombing of the Alfred P. Murrah building in Oklahoma City, was also selected to cleanup rubble from the WTC. CDI advertises its ability to demolish steel columns into pieces matching the lifting capacity of available equipment. Interestingly much of the WTC steel rubble could be stacked conveniently on standard flatbed trailers. [28]

Jones notes that slicing of steel for demolition purposes is routinely done by use of high temperature “cutter charges” made from exothermic materials such as thermite, HMX, and RDX. [29] He notes these “cutter-charges” are typically placed at about a 45 degree angle to the length of the vertical steel beams of a building to be demolished. [30]



Workers place cutter charges in building demolition. Jones [30]

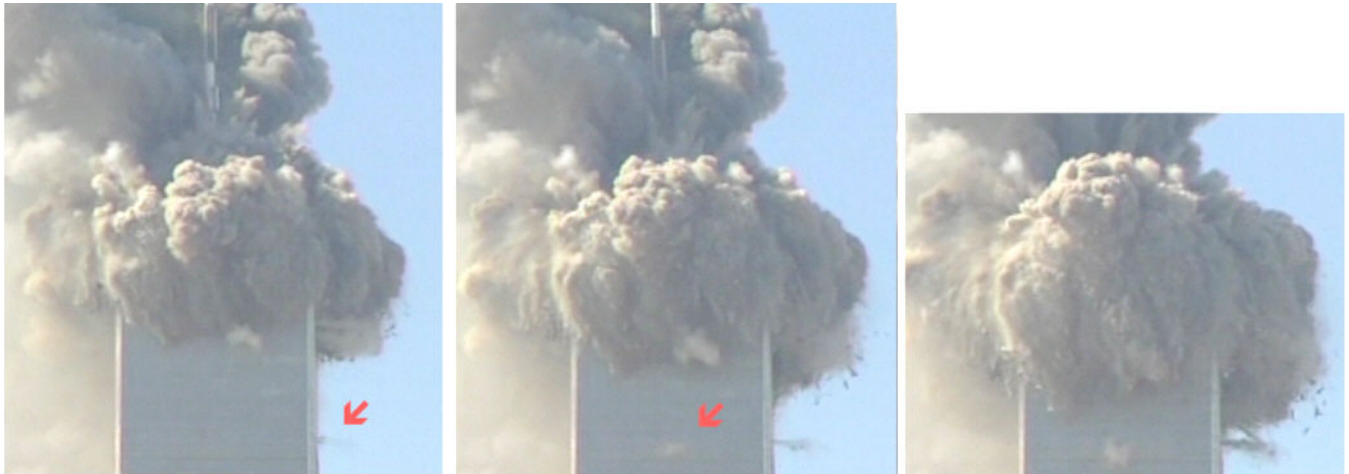
He also notes several instances of photographs of WTC wreckage showing truncated steel columns very similar to what would be expected from the use of such cutter charges. [31] Jones has also argued that WTC cleanup crews used only oxy-acetylene torches, and did not use thermite.



Angle cut box columns: Jones/Hufschmid [31]

1.2.5 Squibs

Photographs show symmetrical “squibs” well below collapsing floors. As opposed to the dust blown out of successive floors below the collapse, these “squibs” are stationary and are eventually overtaken by the collapsing floors. Such squibs are associated with controlled demolition. [32]



Jets of Material (squibs) From North Tower. Courtesy Eric Hufschmid [32]

Griffin notes still another common feature of collapses induced by explosions are “demolition rings” in which series of small explosions run rapidly around a building. [33]

1.2.6 Ejected material

Some material was ejected horizontally at high speeds. Objects were thrown laterally several hundred feet. At bottom, debris was scattered in 500 ft radius. Some clips show material thrown upward, and building fragments were found imbedded in surrounding buildings. [34]



Debris ejected from S. Tower



600,000 lb. Steel beam imbedded in WFC 3 [35]
WTC steel imbedded in adjacent building [34]

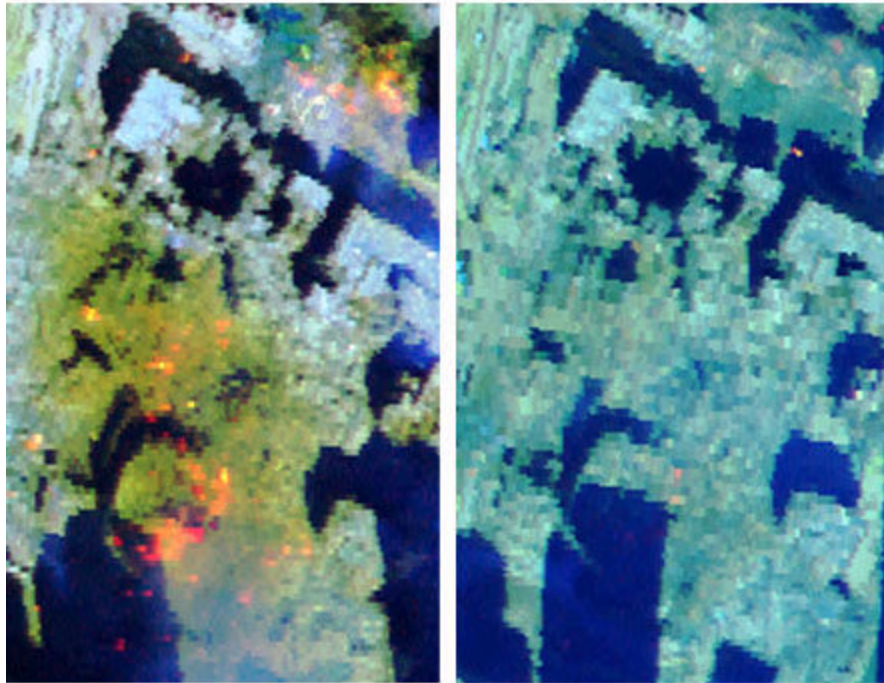


Dr. Stephan Grossman has presented much evidence documenting the incredible energy of the “collapses” as well as the resulting destruction. He notes a steel beam weighing 600,000 pounds (270 metric tons; about twice the weight of a 767-200ER), which was thrown laterally for over 390 ft, to imbed deeply into the World Financial Center 3. [35]

1.2.7 Surface Hot Spots

Five days after the collapse, on September 16, the National Aeronautics and Space Administration (NASA) used an Airborne Visible/Infrared Imaging Spectrometer (AVIRIS) to collect thermal data at the WTC site. The data revealed a number of surface thermal hot spots in the region of collapse. Analysis of the data indicated temperatures greater than 800 deg F in these hot spots (some over 1300 deg. F). [36]

World Trade Center area, New York



Thermal Hot Spots
September 16, 2001 September 23, 2001

From U. S. Geological Survey Report see [36]

1.2.8 Molten metal in the Basements for weeks

The surface hot spots were indicative of what was below the surface: Numerous confirmed references to “molten steel” appear in the 9/11 WTC literature. According to Mark Loizeaux, president of CDI, “pools of molten steel were found” at the bottoms of the elevator shafts of the main towers down seven [basement] levels, “three, four, and five weeks later, when the rubble was being removed.” As has been noted, construction steel has an extremely high melting point of about 2,800° Fahrenheit [1535° Celsius]. [37]

Steven Jones cites several confirmations of molten metal, including Dr Keith Eaton, and Leslie Robertson, WTC structural engineer. [38] A video clip provides eye-witness evidence regarding this metal at ground zero. [39] The observer notes that the observed surface of this metal is still reddish-orange some six weeks after 9/11.

1.2.9 Vaporized Steel

A February 2002 *New York Times* article noted that pieces of steel were found that were “apparently melted and vaporized not solely because of the heat of fires, but also because of a corrosive contaminant that was somehow released in the conflagrations. This Swiss cheese appearance shocked all of the fire-wise professors, who expected to see distortion and bending--but not holes.”[40] This anomaly was cited in Appendix C of the FEMA Report.

1.2.10 Massive Destruction

On September 8, 2002 Colonel John O'Dowd of the U.S. Army Corps of Engineers, appeared on *The History Channel*. O'Dowd, who is no stranger to disaster scenes, had never seen anything like the remains of the twin towers. “At the World Trade Center sites,” he said, “it seemed like everything was pulverized.” There was nothing recognizable in the debris -- nothing to indicate that that pulverized

debris had been, just seconds earlier, a functioning 10,000,000-square-foot office building. O'Dowd had been present at the scene of the partially collapsed Oklahoma City federal building. Though the collapse of the Alfred P. Murrah building was definitely facilitated by one or more powerful explosive charges, the debris from that collapse was not pulverized to the degree that it was at the site of the WTC towers, which presumably was acted on only by gravity. [41]

Dr Grossman provides an image from CNN.com showing damage to dozens of buildings around the WTC Complex. [42]

One of the more unusual artifacts to emerge from the rubble was an object which has come to be known as "the meteorite" a combination of steel and concrete fused by the heat into one single element. [43]

1.2.11 Afterglow

Many videos show an afterglow or a "flare" at the end of the collapses of both the North and South Towers. 911research.wtc7.net has several videos showing this effect. [44]



Afterglow of WTC1 Collapse [44]

1.2.12 Vaporized Humans?

According to an Associate Press article of 1/15/02, Dr. Charles Hirsch, chief medical examiner of the City of New York, triggered an angry response when he told grieving relatives that many bodies had been "vaporized." The goal of his office was to identify at least 2000 of the 2823 victims. Dr. Michael Baden, the state's chief forensic pathologist said that most bodies should be identifiable because the fires ... did not reach the 3,200-degree [1760 deg C.], 30-minute level necessary to incinerate a body. Dr. Cyril Wecht, a top forensic pathologist in Pittsburgh said the combination of fire and compression from tons of rubble could reduce a human body to a small amount of tissue and bone. [45] After one year, Hirsch's office had identified 1,401 victims. [46] Almost six years later, as of April 2007, more than

1100 victims still do not have identifiable remains. [47] After the Oklahoma City bombing, all 168 people killed were eventually identified. And the towers, according to the official story, were acted upon by nothing more than the effects of fire and gravity.

2.0 Eye and Ear Witness Reports

2.1 Suppression of Photographic Evidence?

Photographs at Ground Zero were prohibited, ostensibly for “humanitarian” reasons. Tarpley notes Rudolph Giuliani’s autobiography *Leadership*, in which he states “I noticed a disturbing phenomenon – hundreds of people carrying disposable cameras and hand held video cameras. I understood the impulse...At the same time, this was a crime scene and a dangerous one. I did not want anyone to get hurt or to damage evidence as they scouted out the best angle for their snapshots.” The result was his infamous order that all photos were illegal around the complex. [48]

2.2. Reports of explosions.

The mainstream media generally did not report explosions. Reports continue to surface however, and there is now much photographic [49] and eye witness evidence which suggests that explosions actually did occur within the Twin Towers prior to their collapse.



Steve Evans, BBC[59]



Mike Pecoraro, Engineer[54]



W. Rodriguez/G. Bush [53]

2.2.1 Reports of explosions prior to aircraft impact and/or emanating from lower floors

All damage in both towers was implicitly assumed in the “Official Story” to have occurred only after, and because of aircraft impact and fire. Not all reports support these views:

The *Christian Science Monitor* reported the experience of Tom Elliott, who was at work in his office at the Aeon Corp., an insurance brokerage firm, on the 103rd floor of the South tower.

Sometime after 8:30 a.m., a bright flash of light startled him, and a rumble shook the structure. Flames appeared to be crawling up the outside of the building, along with dark smoke and debris, burning paper and ash. Elliott and two others headed down the building stairwell. As they reached the 67th floor, United Airlines Flight 175 slammed into the 78th floor of their tower at 9:03 a.m. Although its spectacularly televised impact was above Elliot, at first he and those around him thought an explosion had come from below. An incredible sound – he calls it an “exploding sound” – shook the building and a tornado of hot air and smoke and ceiling tiles and bits of drywall came flying up the stairwell. “In front of me, the wall split from the bottom up.” [50]

William Rodriguez, age 44, worked at the WTC for 20 years in building maintenance. He was in an office on sub-level (basement) 1 of the North Tower when it was hit by flight 11. “When I heard the sound of the explosion, the floor beneath my feet vibrated, the walls started cracking and everything

started shaking," said Rodriguez, who was huddled together with at least 14 other people in the office. "Seconds after I hear another explosion from way above," said Rodriguez. "Although I was unaware at the time, this was the airplane hitting the tower ..." Rodriguez said Anthony Saltamachia, supervisor for the American Maintenance Co., was one of the people in the room who stands ready to verify his story. Subsequently Rodriguez helped to save hundreds of people in the North tower, by opening doors with a master key for fire fighters before he was finally turned back at the 39th floor. He also added that he heard a series of small explosions going off between the 20th and 30th floors while making his way through the stairwell to the top floors. Although initially considered an official hero, he soon concluded that the explosions occurring before flight 11 hit the tower proved the towers were brought down by controlled demolition. In an effort to open a fair and honest investigation as to why the WTC collapsed, Rodriguez has approached and been ignored by government officials, the 9/11 Commission, and the National Institute of Standards and Technology (NIST). As of 2005, he was being represented by Attorney Phil Berg in a RICO law suit against GW Bush and his administration. [51]

Other independent reports corroborate explosions emanating from the basement, but it is not clear if these occurred prior to aircraft impact: Stationary Engineer Mike Pecoraro, who was working in the sub-basement level of the North Tower, gives a harrowing eyewitness account of numerous ground and sub-basement level explosions in the on-line publication *Chiefengineer*. For example, from D level:

The two decided to ascend the stairs to the C level, to a small machine shop where Vito Deleo and David Williams were supposed to be working. When the two arrived at the C level, they found the machine shop gone. "There was nothing there but rubble" Mike said. "We're talking about a 50 ton hydraulic press ? gone!" The two made their way to the parking garage, but found that it, too, was gone. "There were no walls, there was rubble on the floor, and you can't see anything" he said. [52]

Regardless of time of occurrence, the notion that all lower floor damage was caused by aircraft impact/fireballs is further refuted by testimony from NYFD Lieutenant William Walsh, who stated that North Tower elevators, which serviced the lower 30 floors, were "blown off the hinges " from below. Craig T. Furlong and Gordon Ross, in a study of seismic activity, reasonably conclude Lieutenant Walsh was referring to local elevators which serviced floors 34 down to the lowest level of the building, Level B6 in the basement. In other words, since these elevators did not go above floor 34, they could not have been affected by aircraft impact between floors 94-98. Furlong and Ross conclude that explosions generating seismic activity did occur prior to aircraft impact. [53]

2.2.2 Reports of explosions probably after aircraft impact but prior to collapse.

According to Scott Forbes, a senior database administrator for Fiduciary Trust, Inc., with offices in the former WTC, Fiduciary employees trapped between the 90-97th floors of the South Tower told family members (via cell-phone calls) that they were hearing "bomb-like explosions" throughout the towers. Forbes, who had helped prepare the South Tower for an unusual power outage the weekend before 9/11[discussed under WTC Security] had the day off, and saw the towers collapse on TV. [54]

Kim White, 32, an employee on the 80th floor, reported hearing an explosion. "All of a sudden the building shook, then it started to sway. We didn't know what was going on ... We got down as far as the 74th floor ... then there was another explosion." [55]

Teresa Veliz, who escaped from the 47th floor of the North Tower: noted : "The flashlight led us into Borders bookstore, up an escalator and out to Church Street. There were explosions going off everywhere. I was convinced that there were bombs planted all over the place and someone was sitting at a control panel pushing detonator buttons. I was afraid to go down Church Street toward Broadway, but I had to do it. I ended up on Vesey Street. There was another explosion. And another. I didn't know where to run." [56]

On Sept. 11 the British Broadcasting Corp. (BBC) interviewed one of its New York-based reporters, Steve Evans:

I was on the ground floor ... There was huge bang... But seconds later, there were two or three similar huge explosions and the building literally shook. At which point, people came - I nearly said screaming, but they weren't screaming - it was a mild panic... We all streamed out, some people running, some people crying, nobody really screaming, across the road and you look up and you can see the top of one of the towers, smoke billowing out from it, the odd flame coming out of the top of these towers. [57]

2.2.3. Unexpected Damage on the 22nd floor, lobby, and basement of N. Tower probably after aircraft impact but prior to collapse

Members of the WTC security department dug thru the debris of the security office on the 22nd floor prior to collapse, to rescue several trapped employees. [58] The 22nd floor was also affected by fire. On September 12, 2001, *NY News Day* reported that officials had recently taken steps to secure the towers against aerial attacks by installing bulletproof windows and fireproof doors in the 22nd-floor computer command center. "When the fire started, the room was sealed," said [Hermina] Jones, who was in the command center when explosions rocked the building. "Flames were shooting off the walls....We started putting wet towels under the doors. The Fire Department unsealed the door and grabbed us by the hand and said, 'Run!' " [59]

According to Peter Wong, who was right under the elevator lobby of WTC 1 between the two ID checkpoints: "I heard the sound of broken glass, smelled burning gas [what kind of gas??], a door blown off about twenty feet in front of me, heat was coming my way. I stepped back and hid myself at the middle elevator of the Blue Cross/Blue Shield section when the strongest wave of explosion passed by with chunks of glass and debris flying around." [60]

NY1.com reported the following: "Brian Reeves, a 34-year-old security guard, was nearly killed while making the rounds in the lobby of 1 World Trade Center on September 11. He started to run after hearing an explosion that he said sounded like a missile, but he was knocked down by a fireball that roared down the elevator shaft." [61] It has not been determined who verified the origin of the fireball.

On March 11 2002, CBS aired a film consisting largely of documentary footage on the firefighters of the FDNY's Engine 7, Ladder 1, all of whom survived the collapse of the towers. [62] The footage was taken by a team of two French brothers, Jules and Gedeon Naudet, who have now become suspect in helping to "stage" the photographic capture of Flight 11 striking the North Tower as merely luck, when they actually may have known what was going to happen. [63] Jules Naudet reports that as he entered the North Tower lobby, minutes after the first aircraft struck, he saw victims on fire, a scene he found too horrific to film. [64] However, to their surprise, the firefighters of engine 7 also found something else completely unexpected: widespread damage to the entire lobby area of the North tower. Over and over, these professional firefighters expressed their complete puzzlement over the damage in this area. According to a World Trade Center Task Force deposition from the *New York Times* Archives, "The lobby looked like the plane hit the lobby." [65] Fire officials were "informed... by certain federal officials" that the lobby damage occurred because 'burning jet fuel' had poured eighty stories down the elevator shafts and then exploded in the lobby." Unexpected damage on the 22nd floor and basement of the N. Tower prior to collapse was also attributed to this fireball.

Phillip Morelli, a 37-year-old Queens native, describes being thrown to the ground by two explosions while in the fourth subbasement of the North Tower. The first, which threw him to the ground and seemed to coincide with the plane crash, was followed by a larger blast that again threw him to the

ground and this time blew out walls. He then made his way to the South Tower and was in the subbasement there when the second plane hit, again associated with a powerful underground blast. [66]

2.2.4 Reports of explosions and tower swaying at the time of collapse.

Genelle Guzman McMillan was the last person pulled alive from the wreckage of the World Trade Center. She was discovered on Sept 12, 2001, 27 hours after the towers had fallen. With a group of 16, she was descending from the 64th floor of the North Tower. On the 13th-floor landing, McMillan heard a rumble. "A big explosion," she now calls it. "The wall I was facing just opened up, and it threw me on the other side," she says. She was struggling to reach a friend "when the rubble just kept coming down....Everything just kept coming harder and harder," McMillan says. [67]

On viewing a September 11, 2001 Fox 5 News video, Retired Colonel Donn De Grand Pre notes: "A few seconds after 10:00 a.m. we see a great white cloud of smoke and dust rising from the base of the [South] tower. The anchor gal exclaims 'There is an explosion at the base of the building... white smoke from the bottom... something happened at the base of the building... then, another explosion! ...'" [68]

Conor O'Clery stated on seeing the South tower collapse: "I shifted my eyes upwards to the first tower that had been hit and was still standing, and saw that several more people had appeared in the upper stories where they had smashed windows. The man with the white cloth was still there, hanging precariously by one hand with his body out over the abyss. I wondered why there was no attempt to rescue them by helicopter as part of the roof of the 1350-foot building was clear of smoke. But then the tower began to sway slightly and two people fell in quick succession from the windows as if unable to maintain their grip....Then the [building collapsed]." [69]

2.3 Reports of explosions by members of the NYC Fire Department

2.3.1 Attempt to Discredit NYFD?

According to Tarpley, members of the NYFD were the greatest immediate threat to the official myth of the cause of the collapse of the towers. For this reason he argues, they were the target of psychological warfare. Stories were circulated about looting by the NYFD which supposedly had begun to take place even before the towers had collapsed. Giuliani tried to limit the number of firemen working on the WTC rubble pile, who were trying to recover the bodies of fallen firefighters before the rubble was removed. A firefighter demonstration against his WTC policies degenerated into a full scale riot between the firefighters and the police. [70]

Several types of reports are available which give an accounting by first responders to the 9/11 tragedy: 1) Statements going directly to the media; 2) Real time audiotapes of communication between rescue services during the attacks, some of which have found their way to the media; and 3) oral histories or interviews taken in interview format after the attacks.

2.3.2 Statements going directly to the media

In the September 12, 2001 issue of *People Weekly* magazine, Louie Cacchioli tells of his rescue work inside the South tower: "I was taking firefighters up in the elevator to the twenty fourth floor to get in a position to evacuate workers. On the last trip up a bomb went off. We think there was bombs set in the building." [71]

Shortly after 9 o'clock [Albert Turi the Chief of Safety for the New York Fire Department] received word of the possibility of a secondary device, that is another bomb going off. He tried to get his men out as quickly as he could, but he said there was another explosion which took place, and then an hour after the first hit, the first crash that took place, he said there was another

explosion that took place in one of the towers here, so obviously according to his theory he thinks that there were actually devices that were planted in the building. [72]

2.3.3 Real time audiotapes of communication between rescue services during the attacks

According to the *New York Times*, the City of New York held hundreds of documents and audio tapes recording the response of emergency services to the September 11 attacks on the WTC, which it said should never be released to the general public. The Bloomberg Administration, in response to a lawsuit filed in State Supreme Court by the *New York Times*, cited a number of reasons for keeping the documents secret. These included citing its value in the government's case against Zacarias Moussaoui, who is accused of being the "20th hijacker." "The administration has argued that releasing these materials would be an invasion of privacy for the families of those who died at the trade center, and for the firefighters who responded to the disaster scene."

Michael A. Cardozo, the city's corporation counsel. Noted "both the oral histories and the radio transmissions, especially the 911 calls, contain highly personal and emotionally charged material. Victims were recorded as they were experiencing life-threatening circumstances, in some instances as they were dying." In its suit, which was filed in May, The Times rejected each of the city's claims, arguing that much of the material reflected information and images that had already been viewed by millions of people through news accounts, documentaries and books.

Included in the material the administration said should never become public were the oral histories given to Fire Department officials by firefighters and chiefs after Sept. 11. Administration officials say that the firefighters and chiefs were promised confidentiality when they gave their accounts.

A former senior official in the Fire Department however, who spoke on the condition of anonymity, advised the Times that the firefighters were, in fact, never told that their remarks would be kept confidential. "The histories are more than for historical purposes," said the former official,. "They are of great value to understanding what happened there. I tend to think that people should be able to see them." [75]

In response to a petition by the *New York Times*, which had been trying to get copies of these materials, New York State Supreme Court Justice Richard Braun ruled in February 2003 that the city had not provided sufficient reason for withholding these documents. The City of NY initially appealed this ruling. [76]

Meanwhile, the 911 Commission subpoenaed the New York Tapes. (see section 5.4) The Bloomberg Administration responded that the mayor was "dismayed" by the subpoena and that "the city had offered to share material with the commission after it was edited to remove the intensely emotional statements of people who lost their lives or whose lives were in jeopardy on Sept. 11." The Commission noted that "the city's failure to produce these important documents has significantly impeded the commission's investigation," The Mayor's office also noted "It also is puzzling why the commission is trying to distract the public by focusing on the city's response as opposed to the question we all want answered — how this savage terrorist attack was planned and executed without any warning. "[77]

A "compromise" was reached. According to the *New York Times*, In an abrupt reversal, the Bloomberg Administration, announced it had agreed to release records of emergency 911 calls and other materials sought by the Commission. "Under the deal, the city secured the right to block out information ..." handed over to the Commission, but would allow panel members on their premises to review the unedited versions of those records. Notes could be taken. [78]

In the final court ruling, portions of the oral histories and tapes containing the opinions and recommendations of the interviewees and dispatchers will be redacted, "since such opinions and recommendations are to be distinguished from factual material." [77]

Apparently the New York Supreme Court, as well as the City of New York, do not trust the opinions of those entrusted with the safety of NYC citizens. The press will get only expressions of personal feelings. This suppression of firefighter comments was perhaps made more palatable by discrediting of members of the NYFD.

The decision to allow "redacted" versions to be released could be appealed to the New York Court of Appeals, but the *New York Times* has not indicated any plan to appeal. [78]

In an NBC exclusive: *911 Tapes Tell Horror Of 9/11* (Part 2) June 17, 2002 "Tapes Released For First Time," the quoted dialog references explosions: "Official: Battalion 3 to dispatch, we've just had another explosion. Official: Battalion 3 to dispatch, we've had additional explosion. Dispatcher: Received battalion command. Additional explosion." [79] Perhaps this is an audiotape that was released before the decision was made to suppress such communications.

Interestingly, access to the original "lost" audiotape of firefighters, showing they reached the 78th floor of the South Tower was severely restricted by the Justice Department. The relatives of the 16 firefighters whose voices were identified on the tape were allowed to hear their last words, but were first required to sign a statement prepared by lawyers that they would not disclose what was said on the tape. [80] Senior FDNY officials also heard the tape, but agreed to keep its contents under wraps at the behest of federal prosecutors in Virginia, who "planed to use a copy at the trial of accused '20th hijacker' Zacarias Moussaoui". [81]

2.3.4. Interviews and Oral Histories taken after the attacks

Subsequent to his comments regarding explosions to the press, Turi was "interviewed", providing the following clarification:..

And as my eyes traveled up the building, and I was looking at the south tower, somewhere about halfway up, my initial reaction was there was a secondary explosion, and the entire floor area, a ring right around the building blew out. I later realized that the building had started to collapse already and this was the air being compressed and that is the floor that let go. And as my eyes traveled further up the building, I realized that this building was collapsing and I turned around and most everybody was ahead of me running for the garage....

The *New York Times* took pains to make sure this "clarification" was posted on the internet as "Turi's Own Words." [82]

Very telling oral histories were released in 2005, and reported by the *New York Times*. These constitute about 12000 pages of testimony by 503 FDNY firefighters, EMTs, and paramedics, collected from October 2001 through January 2002. For example, firefighter Edward Cachia independently reported: "[We] thought there was like an internal detonation, explosives, because it went in succession, boom, boom, boom, boom, and then the tower came down...It actually gave at a lower floor, not the floor where the plane hit." [83]

Assistant fire commissioner Stephen Gregory provides additional insights:

When I looked in the direction of the Trade Center before it came down, before No. 2 came down, I saw low-level flashes. In my conversation with Lieutenant Evangelista, never mentioning this to him, he questioned me and asked me if I saw low-level flashes in front of the

building, and I agreed with him because I thought -- at that time I didn't know what it was. I mean, it could have been as a result of the building collapsing, things exploding, but I saw a flash flash flash and then it looked like the building came down. **Question:** . Was that on the lower level of the building or up where the fire was? **Answer:** No, the lower level of the building. You know like when they demolish a building, how when they blow up a building, when it falls down? That's what I thought I saw. And I didn't broach the topic to him, but he asked me. He said I don't know if I'm crazy, but I just wanted to ask you because you were standing right next to me... He said did you see any flashes? I said, yes, well, I thought it was just me. He said no, I saw them, too. [84]

In January of 2006, an article entitled “Explosive Testimony: Revelations about the Twin Towers in the 9/11 Oral Histories” by David Ray Griffin, appeared. [85] Griffin referenced roughly 31 witnesses to explosions. Graeme MacQueen provided additional research to try to establish if other FDNY witnesses to explosions could be found, and to see if there were any witnesses whose testimony supported a non-explosive collapse of the Towers.[86] MacQueen concludes in his analysis that there is little evidence of coercion of the interviewees by interviewers. However, the oral histories show how many people who originally thought they had witnessed critical explosions later changed their minds (as did Albert Turi, whose accounts appeared in the mainstream media soon after the attacks), believing they were mistaken, often opting for a non-explosive alternative such as “pancaking.” “We now have solid evidence that, for the FDNY, non-explosive collapse is, indeed, a revisionist theory.” Still, even after applying a fairly stringent set of criterion for what constitutes expression of a belief in the “explosive hypothesis (EH)” versus a “non-explosive hypothesis”(NEH), he finds 118 out of 503 witnesses chose an EH, while only 10 chose an NEH. [87]

These insights may afford more credibility to an apparently far-fetched story appearing much earlier. Auxiliary fireman Lt Paul Isaac Jr., in an interview by Randy Lavello, also spoke of bombs in the towers: “Many other firemen know there were bombs in the buildings, but they’re afraid for their jobs to admit it because the ‘higher-ups’ forbid discussion of this fact.” Isaac further elaborated that former CIA director Robert Woolsey, as the Fire Department’s Anti-terrorism Consultant, was sending a gag order down the ranks. [88]

Several DVDs show audio and video of NYFD firefighters describing a series of explosions in the towers: “floor by floor it starts poppin’ out...It was like ... as if they had detonated...Yeah detonated... As if they were planned to take down the building Boom boom boom boom boom” [89]



Louie Cacchioli with life size photo in background [71]

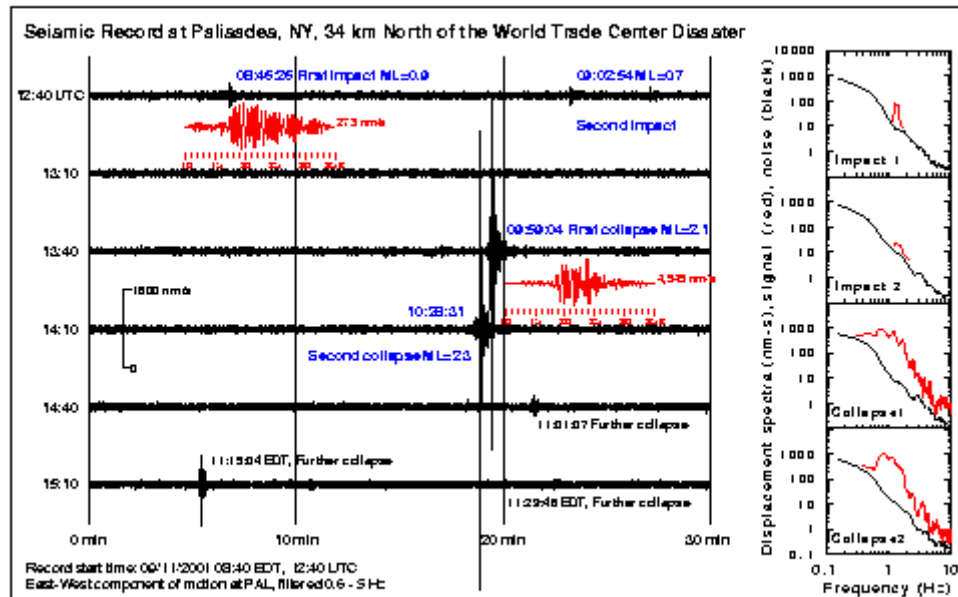


NYFD firefighters: “boom boom boom boom boom”[89]

3.0 How does the seismic data fit in?

3.1 The Earthquakes

Seismic waves from the collapses of the towers were recorded by at least 13 of the 34 seismograph stations operated by Lamont-Doherty for Columbia University [Lamont-Doherty Earth Observatory: LDEO] . The closest station, at Palisades N.Y., 21 miles North of the WTC complex, recorded minimal earth shaking, at the time of aircraft impact, but recorded significant earthquake activity around the time of each collapse. The Palisades seismic data recorded a 2.1 magnitude earthquake of 10-second duration during collapse of the South Tower at 9:59:04 and a 2.3 quake during the 8-second collapse of the North Tower at 10:28:31. [90]



Traces showing seismic activity: aircraft impact and tower collapse [91]

According to the often quoted *American Free Press (AFP)* , "A huge seismic spike marked the moment the greatest energy went into the ground... The strongest jolts were all registered at the beginning of the collapses, well before the falling debris struck the earth." [92]

According to *AFP*, experts apparently could not explain why the seismic waves peaked before the towers hit the ground. Asked about these spikes seismologist Arthur Lerner-Lam, director of Columbia University's Center for Hazards and Risk Research told *AFP*, "This is an element of current research and discussion. It is still being investigated." [93]

However, while *AFP* assumes seismic activity began before debris hit the ground, in the form of explosions, LDEO, in its report : "*Seismic Waves Generated by Aircraft Impacts and Building Collapses at WTC, N Y*," assumes the earthquakes were caused by the tower collapses (i.e., material hitting the ground, over a 10 and 8 second period) and were considered small, the energy being absorbed by the towers and neighboring structures. [94] These times have apparently incorrectly been taken as the time for collapse of the towers.

Calculations done by Derrick P. Grimmer, Ph.D. indicated that the seismic spikes of the WTC events represented energies close to those of the energy of collapses themselves, i.e., without explosions. [95]

Jim Hoffman writes: "There appears to be no basis for the claim that the large spikes preceded the collapses, nor that the energy indicated by those spikes was more than could be accounted for by the approximately 110 megawatt-hours of gravitational energy (equivalent to 2.9207 e8, or 292,070,000. foot pounds) stored in the elevated mass of each tower." Further, Hoffman notes: "Underground explosions would have produced strong P waves, but the seismic stations registered only strong S waves. P waves oscillate horizontally -- parallel to the direction of travel; whereas S waves oscillate vertically -- perpendicular to the direction of travel." [96]

A problem with assessing the seismic data is in coordinating the precise recorded time of the seismic activity with the precise time of physical events at the World Trade Center. As Hoffman notes, "While it's true that the station recorded 2.1 and 2.3 magnitude quakes, Bollyn provides no evidence that the spikes occurred at the beginning of each 'collapse.'"

On the other hand, reports of explosions and tower swaying at the time of collapse seem to suggest the possibility of some seismic activity prior to material hitting the ground. Genelle Guzman McMillan heard "A big explosion" at the time of collapse. [see] The seismic activity at 9:59:04 may be compared with the September 11, 2001 Fox 5 News video that Colonel Donn De Grand Pre reported. [see] The concept of possible seismic activity prior to collapsed material reaching the ground is also suggested by the commentary of Conor O'Clery. [see]

3.2 Is the seismic record consistent with NIST conclusions?

Although Hoffman rejects the Hufschmid/*AFP* notion that the large spikes provided evidence of controlled demolition, he argues that the seismic data and LDEO interpretation is inconsistent with the conclusions of the NIST WTC study. NIST concluded, as we will see, that "Once the upper building section began to move downwards, the weakened structure in the impact and fire zone was not able to absorb the tremendous energy of the falling building section and global collapse ensued". Hoffman notes that only small signals precede the larger signals, which according to LDEO represent the main mass of debris hitting the ground. Thus the time duration of the small signals must include the instant when NIST's alleged "huge mass" of the upper block impacted the lower block. From this we must conclude that the purported "tremendous energy of the falling building section" did not even show up on the seismographs. [97]

3.3 Seismic activity at time of aircraft impact

Craig T. Furlong and Gordon Ross also argue that seismic data is proof that 9/11 was "an inside job." They make the case that two seismic events occurred immediately prior to aircraft impacts upon the Twin Towers. They conclude these seismic events can only be explained by evidence of basement explosions before the aircraft impacts, as experienced by William Rodriguez and 36 others in WTC1. (There were a total of fourteen people in the office, including Rodriguez, at the time. There were an additional twenty-two people on B2 sub-basement who also felt and heard that first explosion.)

Two separate precision data time sets recorded the time of aircraft impact into the Towers. "Both data time sets are based on UTC (Coordinated Universal Time, the world's atomic clock system) and the sources that determined these times were prestigious, reliable and credible."

The authors note that these two data sets record different impact times. The two data sets are from LDEO and the 9/11 Commission. The 9/11 Commission's times are reported to be based on FAA radar data and air traffic control software logic. [98]

The authors state: "There is no question: AA Flight 11 died exactly at 8:46:40 and UA Flight 175 at 9:03:11 [UTC - 4 hrs]." Since the planes crashed at those times, the authors ask: what caused the LDEO seismic activity 14 and 17 seconds earlier? "What caused those seismic spikes?" Since Rodriguez and

36 others felt and heard an explosion prior to aircraft impact of WTC1 , the authors argue the seismic signals were due to the pre-impact explosions.

The authors go on to argue that the NIST derived times of aircraft impact appear to have been “fudged,” supported by neither the NTSB nor radar data. Interestingly, in 2005, NIST contracted for the services of Dr. Won-Young Kim of LDEO to re-analyze the original seismic data times originally issued in 2001. The new study added on 3 seconds to the original times of aircraft impact. The authors ask why the fudging; why the re-analysis? [99]

4.0 WTC Security

4.1 Insurance

Only three months before the attack, Silverstein Properties and Westfield America signed a rental contract for the WTC, agreeing to pay a total of 3.2 billion dollars in leasing installments over 99 years to the Port Authorities. [100] According to *The Financial Times Ltd.*, terms of the lease allowed the new owners to walk away from their investment in the event of "an act of terrorism." [101]

Despite not being the owner of the buildings, Silverstein demanded to be the sole beneficiary of the insurance indemnity payments of more than 7 billion dollars. Steve Solomon, his spokesman, said: “The Port Authorities agreed with Silverstein's demand.” [102]

4.2 Damage to FBI Offices

Severe damage to the 22nd (security office) floor of the North Tower has been previously noted. Dick Eastman of Yakima Washington notes: “It is known that these floors contained the New York FBI offices -- Peter Jennings actually did a two-day network news story on the effects of the destroyed evidence and files on American financial crime investigations around the world.” Interestingly, the entire accumulation of evidence and investigation briefs on two highly important cases were being stored in the security (FBI) office. [103]

4.3 Anomalies leading up to the Day

Ben Fountain, a financial analyst who worked in the 47th floor of the South Tower, told *People Magazine* that in the weeks before 9/11 there were numerous unannounced and unusual drills where sections of both the twin towers and building 7 were evacuated for quote “security reasons.” [104]

Victor Thorn of Wing TV has reported the WTC 9-11 security concerns of Scott Forbes, a senior database administrator for Fiduciary Trust, Inc., with offices in the former WTC. Forbes reported that his company was notified three weeks in advance that New York's Port Authority would take out power in the South Tower from the 48th floor up on the weekend prior to 9-11, ostensibly to implement a computer cabling upgrade. Forbes noted that Fiduciary Trust was one of the WTC's first occupants after it was erected, and that a "power-down" had never been initiated prior to this occasion. Forbes recalled the power was out approximately 36 hours between early Saturday morning (September 8th) and mid-Sunday afternoon (September 9th) As a result of the power outage, the WTC's security cameras, ID systems, and elevators to the upper floors were rendered inoperative. Forbes noted that many "engineers" going in- and-out of the WTC had free access throughout the building due to its inoperative security system. Forbes also noted other security related anomalies: Video cameras positioned atop the World Trade Center which were used to feed daily images to local television stations were inexplicably inoperative that morning. Also, a Fiduciary employee who was on one of the lower floors and escaped immediately after the first (North) tower was struck, reported that he was amazed by the large number of FBI agents that were already on the streets surrounding the WTC complex only minutes after the initial strike. Forbes said that even though these disclosures could jeopardize his

current employment, he has stepped forward because, "I have mailed this information to many people, including the 9/11 Commission, but no one seems to be registering these facts." [105] Soon after Forbes' appearance on Wing TV, he was marginalized by 9/11 truth debunkers because he seemed to vanish. Between 2005 and 2006 he has been remotely interviewed at least three times from his home in England. In a Killtown interview, Forbes observed that both main stream and progressive media of other countries have been much more interested in his story than in America. He also noted that, being British, he was eventually interviewed by London police, "but none of my American colleagues were contacted by police or FBI or any agency. Kind of weird." [106]. Most recently, Forbes' statements, which are reasoned and dispassionate, have been used by 9/11 truth debunkers against Ben Fountain [107].

Forbes also stated in an interview that 4-6 weeks before 9/11, there was lots of noise coming from floor 98, above his office. Aeon was moved out, and the floor was vacant. He heard what sounded like heavy machinery work going on; drilling and hammering; like something very heavy being moved and dumped, the force of which was enough to cause his office to shake. On one occasion Forbes said he opened the door to the 98th floor to see what was going on, but the entire office space was empty.

This correlates with the experience of William Rodriguez in the North Tower, who, as he was climbing stairs to unlock doors on 9/11, "heard strange noises on the 34th floor." Rodriguez noted that there was "nothing on this floor". No one was supposed to be there, and you can't even get there without a special key. Rodriguez heard heavy equipment being moved around, it sounded to him like dumpsters with metal wheels. Rodriguez was afraid to open the door to floor 34 with his master key. The week before 9/11, Forbes noticed lots of dust in the building "The dust was incredible; it was filthy; dirty gray dust. [108]

Christopher Bollyn states that "The two airplanes that struck the twin towers of the World Trade Center on 9/11 flew directly into secure computer rooms in both buildings." While there may have been a number of secure computer rooms distributed in the towers, Bollyn goes on to describe a construction operation where the 81st floor of the South Tower, in the range of floors impacted by flight 175, was reinforced to hold very heavy Uninterrupted Power Supply batteries, which interestingly, were apparently never turned on. Bollyn contacted a number of companies involved in this construction and installation, all of whom refused to comment. [109]

A photo ID pass for Sept. 5 found on one of the men charged with fraudulently obtaining a Tennessee driver's license from a Memphis woman gave him access to the six underground levels of WTC1. But which tenant hired Sakher 'Rocky' Hammad, 24, to work on its sprinklers is lost, said Port Authority of New York and New Jersey spokesman Alan Hicks. Hammad told federal authorities that he was working on the sprinklers six days before the twin towers were brought down by terrorists, court testimony revealed. But Hicks said the Port Authority, which owned the building, did its own sprinkler work, and that any other work involving sprinklers would have been arranged by an individual tenant. [110]

According to a September 12, 2001 report by *NY News Day*, a WTC security detail had been working 12-hour shifts prior to 9/11 because of numerous phone threats. But on the Thursday before, "bomb-sniffing dogs were abruptly removed." [111]

4.4 Security firms

Ontrack/Convar, the German company that was trying to recover data from WTC hard drives in order to determine who was responsible for last minute financial transactions on 9/11, was purchased after the fact by none other than Kroll Inc. (Kroll O'Gara Eisenhardt) in June 2002. Kroll is a huge, multi-national security firm which has strong ties to US intelligence. Coincidentally, one of their upper echelon, Jerome Hauer, was responsible for brokering the position of head of security for ex-FBI whistleblower John O'Neill in the WTC. Mr. O'Neill died in the 9/11 attacks. [112]

A business entity now known as Stratesec, Inc. began performing security work at the Center in 1993. In 1996, Stratesec, then known as Securacom, was awarded an exclusive contract to provide security for the World Trade Center complex. Stratesec/Securacom also provided security for United Airlines and Dulles International Airport. Sitting on Stratesec's board of directors, from the time the company began working at the WTC, was a major shareholder by the name of Marvin Bush. Marvin, like Jeb and Neil, is a brother of George W. Bush. [113]

4.5 A note on “Urban Renewal” of the Twin Towers

A number of internet sites portray the economic status of the late Twin Towers as compromised. In particular, a frequently recurring phrase is "the Twin Towers were always money-losers" [114]

The highly regarded 911 Mysteries DVD suggests in its chapter *Urban Renewal* that WTC economic problems may have been a motive for their intentional destruction. [115] An online “911mysteriesguide” appears to show that 911 Mysteries DVD definitely got it wrong, producing a number of authentic looking references, including one contradicting the 911 Mysteries claim that quotes for a clean-up of the asbestos in the towers would have cost more than a billion dollars. [116] The *guide* concludes “we have shown that the World Trade Center did not have tenancy problems; they did not have money problems; and there is no reason to believe that asbestos problems were not manageable. There was no motive for the Port Authority of New York to destroy the World Trade Center as 9/11 Mysteries suggests. “[117]

Further searching on the internet yields an article on asbestos, noting an authentic sounding source stating “, *the Port Authority calculated that it would cost \$1 billion...to remove the asbestos...*”[118] The author of this article correctly attributes this quotation to a November 30th, 2001 article, published in the “New York Psychogeographical Association. ” 911 Mysteries would appear then to be vindicated in its pronouncement of definite WTC asbestos problems. However, the URL for the New York Psychogeographical Association is [www.notbored.org/the-nypa.html]. The website consists of a half dozen articles with names such as [No more fucking ugly buildings!](#) And [Mother Nature to 9-11 Mourners: Eat My Dust.](#) One article, which contained the quotation of Note 5, entitled *A new Garden of Eden*, observes: “Though this may be hard for some to believe, especially in these sentimental times, the so-called Twin Towers at the World Trade Center were *hated* by many New Yorkers, who before September 11, 2001 would have been happy if the goddamned things had never been built and after September 11th are glad that they're gone. An entire neighborhood was emptied out and destroyed to make way for them. *Them* -- not just one spectacular tower, but two.”

Looking further on the internet, one finds “Team Twin Towers,” a group with a web site ostensibly dedicated to valuing the former towers, and defending them from negative accusations. They have provided arguments to counter statements such as “*The Twin Towers failed in their mission to revive Lower Manhattan.*”, “*The Twin Towers were only partially occupied. They were money-losers.*”, “*The Twin Towers were Ugly Banal Boxes*”, and “*The Twin Towers were poorly and negligently constructed. They did not meet NYC fire codes.*” [119]

It seems then, that the question of the economic status of the late Twin Towers is framed in a very polarized and controversial environment, in which the Towers were loved by some and hated by others. What then is the truth?

5.0 History and its Revision

5.1 The History of Fire Induced Collapse of Steel Buildings

There is none before or after 9-11

Although the 911 Commission acknowledged that fire chiefs on the scene thought the collapse of the Towers was impossible, MacQueen emphasized the unanimity of the FDNY on this issue. [120]

"Fire has never caused a steel building to collapse," writes Eric Hufschmidt, quoting Bill Manning of *Fire Engineering* magazine. [121]

The Towers had experienced fires before. The Feb 14 1975 *New York Times* carried the headline "Trade Center Hit by 6 Floor Fire."

A three alarm fire broke out in the 11th floor offices of the BF Goodrich Company in the North Tower of the World Trade Center just before midnight last night, and spread through an inner service core to the Fourth through fourteenth floors. "It was like fighting a blowtorch" according to Capt. Harold Kull of Engine Co. 6..."Flames could be seen pouring out of the 11th floor windows on the East side of the building."

According to a second article, the fire burned for three hours. [122]

The 1991 Meridian Plaza fire in Philadelphia burned for 19 hours but did not cause the building to even crack. [123] The First Interstate Bank Building in Los Angeles burned for more than 3 hours with bright intense flames. There was no damage to the main structural members [124]. On Sunday Feb. 13, 2005, CNN reported on a fire said to be the worst in Madrid's history, which burned for 2 days and gutted the Windsor Building. Its structural core was weaker than that of the WTC towers, and although several top floors collapsed onto lower ones, the overall structure did not collapse. [125]



Madrid fire [125]

On September 11, not one, but three structures disintegrate to dust: WTC1, WTC2, and WTC7. Hufschmidt reasonably questions why Buildings 4 and 6, which were closer to the towers than WTC7 did not collapse. Photographs of both buildings show giant flames and glowing red interior, and WTC6 had massive damage due to falling debris. [126]

5.2.0 The First Wave of Politically Correct Revisionist Theories

Revisionism seen in the FDNY interviews appears to have been paralleled by a revision of thinking by explosives experts. Within ten days of his first remarks, Van Romero, who previously suggested explosives in the Towers, changed his mind: "Certainly the fire is what caused the building to fail.." [127] Van Romero was seeking Pentagon research funding at the time of the attack. [128] Politically correct revisionist theories soon blanketed the news media.

Because WTC 1 and 2 stood for approximately 1 ¾ hours and 1 hour respectively after impact, we know they did not collapse because of airplane impacts alone. So, the first Politically Correct theory presumed that heat from the fires simply melted the structural core, causing the collapse.

5.2.1 Steel Melted By Heat

Henry Koffman, director of the Construction Engineering and Management Program at the University of Southern California wrote that intense heat from the fires melted the steel, which caused the collapse of the towers. [129]

5.2.2 Steel Weakened By Heat

Articles by Zdenek P. Bazant and Yong Zhou of Northwestern University appeared in the on-line version of *Journal of Engineering Mechanics* ASCE. [130] These articles purported to address why the buildings collapsed. Bazant and Zhou suppose that the steel in over half of the 287 columns of the crash zone was exposed to sustained temperatures exceeding 800 Deg. C. [1472 Deg. F.]. At such temperatures, structural steel exhibits significant viscoplastic deformation, which may result in a buckling of columns.

5.2.3 Refutation of Early Fire and Heat Theories.

We might ask what supplied the fuel needed for Bazant's "sustained temperatures exceeding 800 Deg. C."? Office furniture? Computers? Printer paper? Well, OK, but the central core, which he fails to even consider, had no office furniture, and virtually no fuel, so how did it heat up enough in one hour to collapse?

How hot was the fire, and how much heat did it produce? Charles Clifton is a technical expert in determining the effects of severe fire and earthquake on steel framed buildings. He believed that fire did not cause the towers to collapse. [131] He has noted that regions of fire at 700 deg C would be glowing red hot and visible from outside the building, and that significant window breakage would have occurred. He noted that neither of these conditions occurred in the towers [132]

Professor Thomas Eager is professor of Materials Engineering and Engineering Systems at MIT. The Minerals, Metals & Materials Society published his analysis, which concluded that the fire could not possibly have been hot enough to melt steel. The analysis, which notes that steel melts at 1500 deg. C. [2732 deg. F.] and that jet fuel produces a maximum temperature of 1000 deg. C. [1832 Deg. F.], even when mixed in perfect proportions, parallels the historically verified fact that fire cannot melt steel. [133]

Jim Hoffman notes that Corus Construction performed extensive tests subjecting un-insulated steel-frame car parks to prolonged hydrocarbon-fueled fires. The highest recorded steel temperatures were 360 Deg. C. [680 Deg. F.] [134] This is substantiated by Jim McMichael, who wrote that the maximum temperature achieved in fire testing of unprotected steel supports [in the U.K., Japan, the U.S. and Australia] was also 360 degrees C (680 F), a long way from the first critical threshold in structural steel, 550 Deg. C. [1022 Deg. F.]. The reason? Unheated steel forms an effective heat sink: The massive steel structures of the towers would form a vast heat sink: Local heat from the Tower beams was continuously

conducted from the heated portions to the massive cooler portions below, suggesting an even lower maximum temperature. [135]



Woman in break created by impacting aircraft in WTC1 [136]

The appearance of several people in the fracture caused by airplane entry in the North Tower suggests temperatures were not excessive in the crash zone. [136]

Brian Clark, an executive vice president at Euro Brokers, a brokerage firm that had offices on the 84th floor of the South Tower found little problem with heat while traversing the impact floors. [137]

On Aug. 2, 2002, discovery of a "lost" audiotape was reported. This tape is important, because it established that firefighters, including Chief Orio Palmer, actually reached the crash zone on the 78th floor of the South tower and apparently believed they were in control of the situation. This further suggests that the crash zone was not a raging inferno. [138]

The same conclusion can be drawn from the Discovery Channel documentary entitled "Collapse: How the Towers Fell." According to the show's experts, although jet fuel might optimally reach temperatures approaching 2000deg F, fully one-half of [Flight 11's] fuel burned outside of the tower.

This is consistent with sources which state that each aircraft was carrying about 10,000 gallons of fuel [139], and with FEMA's estimate that about 4000 gallons of fuel burned within each tower. [140]

The remaining half, which ignited inside the tower, burned up in about eight minutes. And that analysis was based on the first crash (8:46 am), into the North tower. As can be clearly seen in video footage, a much higher percentage of the fuel burned outside the South Tower, in the second crash (9:03 am).

As investigative journalist David McGowan notes, this analysis argues against massive structural elements of the towers reaching high temperatures [141]

The FEMA BBA and NIST assessments of fuel burned is discussed in section **5.7.0** "How do the Official Investigations Compare?"



South Tower Impact Courtesy www.serendipity.li [142]

5.2.4 The Problem of a Completely Symmetrical Collapse

It is highly unlikely that structural weakness resulting from the fire or heat would result in a completely symmetrical collapse such as occurred. Irregularity would have produced a collapse in which concrete and steel girders would have rained down over a wide area, [143] causing additional damage and fatalities. Dr. Steven Jones notes the great difficulty of obtaining a completely symmetrical collapse, even using controlled demolition. “This feat requires such skill that only a handful of demolition companies in the world will attempt it.” [144]

All these observations would appear to refute the notion that the total symmetrical collapses were the result of structural weakening by heat and fire from jet fuel, especially in the South Tower. Yet the South Tower collapsed first, about 56 minutes after aircraft impact. Thus, evolving theories attempted to account for the completely symmetrical collapse.

A special report by Thomas Eager and Christopher Musso titled “Why Did the World Trade Center Collapse? Science, Engineering, and Speculation” illustrates an early attempt to explain a completely symmetrical collapse without reference to explosives.

Eager argues that although fire did not melt the steel, fire is what brought the towers down. The article correctly notes that only a small number of perimeter columns were lost on airplane impact, and that the

loads were shifted to the remaining columns. The article also correctly notes that the fire was fuel rich, producing a diffused flame as could be seen by the thick black smoke. It then notes that the steel was not likely to have experienced temperatures above 750-800 deg C. The article points out that although structural steel begins to soften at 425 Deg C, and loses half its strength at 650 deg C, even a loss of half of the steel's strength is insufficient, by itself, to explain the collapse. "Even with half its strength the steel could still support two to three times the stresses imposed by a 650 deg C fire."

The article finds the culprit in the distortion of the steel due to the fact that the steel temperature was not uniform. "A 150 deg C temperature difference from one location to another will produce .. stresses. This produced distortions in the slender structural steel which resulted in buckling failures... Thus, the failure of the steel was due to the loss of strength due to the temperature of the fire, and loss of structural integrity due to distortion"

Interestingly, although the article mentions the building core in the very beginning of the article as being designed to support the weight of the tower, the core is never again mentioned; as if the towers were supported only by the peripheral columns. The article describes the construction as "egg-crate", and emphasizes the notion that the building was light weight, and about 95 % air, explaining why the rubble after collapse was only a few stories high. The authors fail to note the substantial mass of concrete which was pulverized and distributed in a pyroclastic dust cloud over many city blocks.

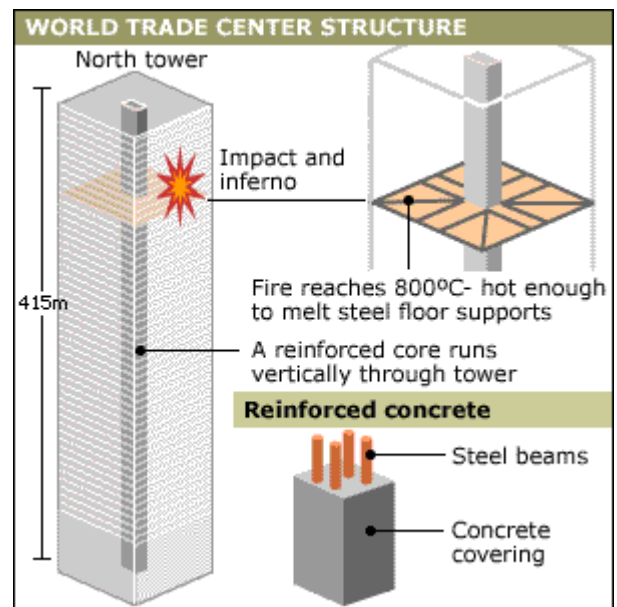
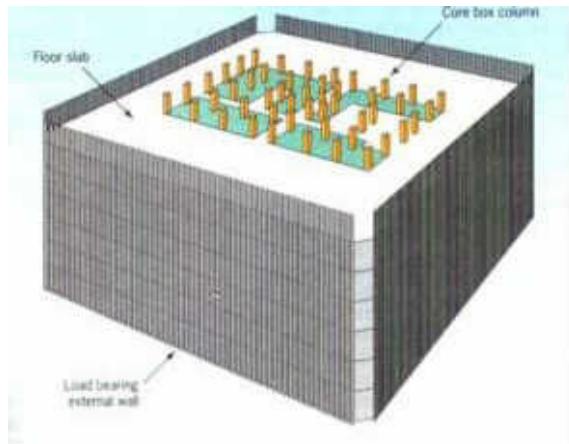
The article then attempts to explain the "lack of tipping" or "implosion" of the towers on collapse. The building is 95% air, and hence can implode on itself; and because of its near free fall speed of collapse, there was insufficient time for portions to attain significant lateral velocity. "To summarize, a 500,000 ton structure (that is 95% air) has too much inertia to fall in any direction other than nearly straight down." So the authors argue that the towers fell straight down because they were both too light and too heavy. They do not question how the building, especially the central core, could collapse at close to freefall speed. [145]

3.2.5 Pancake Theory

Fire Engineering Magazine concluded that a growing number of fire protection engineers had concluded that "the structural damage from the planes and the explosive ignition of jet fuel in themselves were not enough to bring down the towers." These Fire Engineering specialists adopted the notion of a failure of lightweight trusses connecting building perimeter to load-bearing central columns. [146] The concept of lightweight trusses was very helpful for establishing the concept of "Pancake Theory" which provided the final desired result of "explaining" a completely symmetrical collapse without referring to explosives. According to Bazant and Zhou, the "chain reaction" resulting in complete floor by floor symmetrical collapse of the North Tower was caused by the acceleration of the mass of the building above the buckled columns downward. The term "Pancake Theory" (as well as its variants, Zipper or Domino) helped facilitate the credibility of the chain reaction theory.

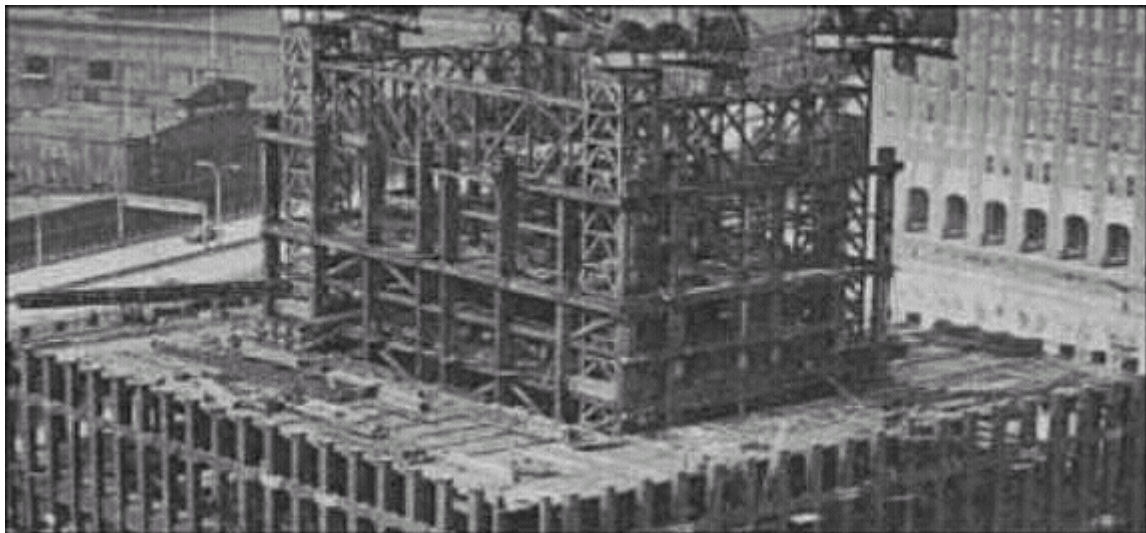
David McGowan notes the discrepancy between the standard media graphic portraying the tower structure, on the right below, and an accurately scaled rendering of the 'footprint' of one of the towers (image on left.) Needless to say, the thin central core in the image on the right certainly would facilitate acceptance of "Pancake Theory" by the public. [147]

Photos of actual tower construction, which confirm the accuracy of the rendering on the left, below, show: 1) Floors are not wide-open Spaces; the structural core occupied a significant portion of each tower's footprint. 2) Lateral floor trusses appear firmly anchored between perimeter and core columns, allowing the buildings to take large lateral loading due to wind. [148]



Images Courtesy David McGowan [147]

Actual construction (image on left) depicted in graphics distributed by the media (image on the right).



The service core in construction [148]



The "spire" in the above images is a portion of WTC 1's disintegrating service core. If collapse was due to "pancaking" of weak trusses, the 110 story sturdy service cores would still be standing. [149]

As McGowan notes, 'pancake theory,' at best, "only offers an explanation how the floor and exterior wall sections may have possibly collapsed. Even if such an unlikely event had occurred, the end result would not have been a 60-foot-high mound of rubble, but rather two somewhat narrower, 110-story towers." [150]

Derrick Grimmer asks, if a "pancaking" effect caused the total building failure, why is it that no video of either of the WTC collapses shows any sign of stutter between floor collapses, which should have been very apparent especially in the first few floors of collapse when the speed of gravitational collapse was small. [151]

5.3.0 The FEMA Building Performance Assessment (BPA)

The American Society of Civil Engineers (ASCE) began a preliminary study of the collapse of the towers. The Federal Emergency Management Agency (FEMA) soon joined with ASCE to assemble a larger group of volunteer investigators, which was called the Building Performance Assessment Team (BPAT), and supplied \$600,000 in funding. The BPA Team consisted of specialists in tall building design, steel and connection technology, fire and blast engineering, and structural analysis. On May 1, 2002 FEMA released its report of the WTC collapses, based on the conclusions reached by the BPA Team. [152]

5.3.1 Executive Summary

According to the Executive Summary, the team "conducted field observations at the WTC site and steel salvage yards, removed and tested samples of the collapsed structures, viewed hundreds of hours of video and thousands of still photographs, conducted interviews with witnesses and persons involved in the design, construction, and maintenance of each of the affected buildings, reviewed construction documents, and conducted preliminary analyses of the damage to the WTC towers."

The Executive Summary initially states: "The structural damage sustained by each tower from the impact, combined with the ensuing fires, resulted in the total collapse of each building." [153] Yet then immediately it notes: "With the information and time available, the sequence of events leading to collapse of each tower could not be definitely determined." [154]

This is precisely the conclusion reached by the 9/11 Commission/Report, noted by Griffin. Since planes and fire by definition were the cause, no precise mechanism need be determined with certainty.

The report insults the integrity of the original design of the towers, by a World Class structural engineering firm, WSH&J, stating "Events of this type, resulting in such substantial damage, are generally not considered in building design, and the ability of these structures to successfully withstand such damage is noteworthy." [155]

In Chapter 8, Observations, Findings, and Recommendations, the floor trusses are made suspect, but we are cautioned not to think of these design features as deficiencies. [156]

5.3.2 Deepest mystery makes Appendix C

A tiny fraction of the steel beams from the tower debris were inspected.

Recommendations in Appendix C of the FEMA WTC report noted: "The severe corrosion and subsequent erosion of samples 1 and 2 are a very unusual event. No clear explanation for the source of the sulfur has been identified... A detailed study into the mechanisms of this phenomenon is needed." [157] A *New York Times* article noted that pieces of steel were found that were "apparently melted and vaporized not solely because of the heat of fires, but also because of a corrosive contaminant that was somehow released in the conflagrations." The *New York Times* called these findings "perhaps the deepest mystery uncovered in the investigation." [158]

Materials science professors Ronald R. Biederman and Richard D. Sisson Jr. confirmed the presence of eutectic formations by examining steel samples under optical and scanning electron microscopes. A preliminary report was published in *JOM*, the Journal of the Minerals, Metals & Materials Society.



Remains of WTC wide flange beam. FEMA BPA Appendix C [157]

A eutectic compound is a mixture of two or more substances that melts at the lowest temperature of any mixture of its components. Blacksmiths took advantage of this property by welding over fires of sulfur-rich charcoal, which lowers the melting point of iron. In the World Trade Center fire, the presence of oxygen, sulfur and heat caused iron oxide and iron sulfide to form at the surface of structural steel members. This liquid slag corroded through intergranular channels into the body of the metal, causing severe erosion and a loss of structural integrity. WTC 1, 2, and 7 all showed signs of this eutectic reaction. The important questions, says Biederman, are how much sulfur do you need, and where did it come from? Did the eutectic mixture form before the buildings collapsed, or later, as the remains smoldered on the ground. "We have no idea," admits Sisson. [159]

"A one-inch column of steel has been reduced to half-inch thickness. Its edges--which are curled like a paper scroll—have been thinned to almost razor sharpness...Gaping holes--some larger than a silver dollar--let light shine through a formerly solid steel flange. This Swiss cheese appearance shocked all of the fire-wise professors, who expected to see distortion and bending--but not holes." [160]

5.3.3 Immediate Reaction to the FEMA BPA Report

5.3.3.1 Structural Engineers

On Christmas Day, 2001 The *New York Times* reported that some of the nation's leading structural engineers and fire-safety experts believe the investigation into the collapse of the WTC was inadequate, and were calling for a new, independent and better-financed inquiry. Experts critical of the investigation included some who actually took part in it. The team of 20 or so investigators, who conducted their review between October 7-12, had no subpoena power, inadequate financial and staff support, and had been prevented from interviewing witnesses and frequently prevented from examining the disaster site, and had even been unable to obtain basic information such as detailed blueprints of the buildings.[161] The *Times* account of the BPA team activities contrasts sharply with the account provided in the FEMA BPA Executive Summary.

5.3.3.2 Firefighters

On January 4, 2002, an editorial in *Fire Engineering*, a trade magazine with ties to the New York Fire Department, called the investigation into the collapse of the WTC a "half-baked farce." The article pointed out that the probe had not looked at all aspects of the disaster and had limited access to documents and other evidence. Bill Manning, editor of the magazine, noting that destruction of evidence is illegal, demanded that the destruction and removal of the steel columns must stop immediately. [162] The decision of the City of New York to rapidly recycle the 300,000 tons of steel columns, beams and trusses from the WTC in the days immediately after 9/11 adversely affected the FEMA BPA inquiry. [163]

5.3.3.3 Congress

Congressman Boehlert, Chairman of the Science Committee of the House of representatives, testified "I must say that the current investigation- some would argue that 'review' is the more appropriate word--seems to be shrouded in excessive secrecy" and "...valuable evidence has been lost irretrievably, and blueprints were unavailable for months." [164]

Professor Glenn P. Corbett, John Jay College of Criminal Justice testified before the Science Committee of the House of Representatives on March 6: "The collapse of the World Trade Center towers were the largest structural collapses in world history. A disaster of such epic proportions demands that we fully resource a comprehensive, detailed investigation. Instead, we are staffing the BPAT with part-time engineers and scientists on a shoestring budget." Corbett further noted "The steel holds the primary key to understanding the chronology of events and causal factors resulting in the collapse," and recommended an investigative commission on the World Trade Center Disaster. [165]

ASME representative Gene Corley testified before the Science Committee of the House of Representatives on March 6: "Resources allocated to support our BPA team's activities is about 1 million. In our opinion, 40 million would be sufficient." [166] The Science committee itself, in its March 6, 2002 report, called for a broader WTC investigation. Rep. Felix Grucci (R-NY): "We need to continue to work together, to find what answers we can, and attempt to piece together as much information as possible on the cause of the collapse." [167]

In a letter to Mr. Mitchell E. Daniels, Jr. Director, Office of Management and Budget, the committee wrote: "There was unanimity among the witnesses on the need for a comprehensive assessment and research agenda to address evacuation procedures, emergency response, and structural analysis of the site's buildings." [168]

5.3.3.4 Media

Even the *New York Times* expressed dismay. On the first anniversary of the attacks (subsequent to the FEMA BPA study and final report), the *Times* wrote: "The public knows less about the circumstances of 2,801 deaths at the foot of Manhattan in broad daylight than people in 1912 knew within weeks about the Titanic, which sank in the middle of an ocean in the dead of night." [169]

5.4.0 The 9/11 Commission

5.4.1 The 9/11 Commission Report

Chapter 9 of the *9/11 Commission Report*, "Heroism and Horror", discusses the attacks on the World Trade Center. A large part of Chapter 9 concerned the response of emergency services at the WTC complex. The Commission's Report brings up none of the major issues discussed in the 9/11 truth movement, which have been discussed in the previous pages. Rather, the Commission's Report cherry picks a few of the details, without ever getting to any real issues. [170]

As MacQueen notes, the 911 Commission appears to have used the oral histories in composing chapter 9 of their Report. He notes the use of the histories to verify the condition of civilians, the nature of rescue operations, and so on, but no reference is made to the comments on explosions. [171]

Chapter 9 takes up the notion that severe damage to the 77th floor, 22nd (security office) floor, the lobby, and B4 level of the North Tower was due to a "fireball" from airplane impact. [172]

Chapter 9 notes that by 9:58 a.m., the battalion chief [Orio Palmer] had reached the 78th floor on stairwell A of the South Tower; he reported that it looked open to the 79th floor, well into the impact zone. [173] This is a reference to the so called "lost tape" which verified that members of the fire department reached the scene of the crash zone of the South tower, which was NOT a blazing inferno, and thought they had things under control. [174]

Chapter 9 notes that at 9:03 Flight 175 hit the South tower, crashing thru the 77th to 85th floors. "The plane Banked as it hit..., leaving portions of the building undamaged on impact floors. As a consequence--and in contrast to--the...North Tower, stairwell A initially remained passable from at least the 91st floor down, and likely from top to bottom." [175] Recall that the stairwell was within the 47 steel core columns, which suggests that the core area of the South tower was damaged less than the North Tower. Yet the South Tower collapsed first, and Chapter 9 notes: "the South tower collapsed in 10 seconds" and "collapsed into itself" [176] yet does not question how this could have been possible.

Griffin notes that the Commission Report even ignored the existence of the 47 steel core columns: "The outside of each tower was covered by a frame of 14 inch wide steel columns... These exterior walls bore most of the weight of the building. The interior core of the buildings was a hollow steel shaft, in which elevators and stairwells were grouped." [177]

Chapter 9 states "At 10:04, NYPD aviation reported that the top 15 stories of the North tower 'were glowing red'." Yet this is contradicted by photos [178] which shows the top floors engulfed in smoke, with only one pocket of fire visible. The floors of Buildings 5 and 6 on the other hand, were documented by photographic evidence as glowing red hot, but did not collapse.

Griffin notes the statement made by former Mayor of New York Rudolph Giuliani to the commission: “We were operating out of there [the Emergency Command Center on the 23rd floor of WTC-7] when we were told that the World Trade Center was gonna collapse, and it did collapse before we could get out of the building.” [179] Griffin continues: “This is a remarkable statement. There was no publicly available reason to believe that the Twin Towers were going to collapse.....The firemen going up the stairs in the South Tower certainly did not think it was about to collapse... Should the Commission not have asked Giuliani some questions about this statement, such as: Who told him the towers were about to collapse. The Commission’s report makes no mention of Giuliani’s statement.” [180] This is all the more interesting considering that EMT Richard Zarrillo, in a World Trade Center Task Force interview given on Oct 25 2001, stated that The Office of Emergency Management had prior knowledge of the tower Collapses: “OEM says the buildings are going to collapse; we need to get out” [181]

5.4.2 9/11 Commission Makeup

The 9/11 Commission Executive Director was Phillip Zelikow. Former New Jersey governor Thomas Kean chaired the commission, with Lee Hamilton as Vice Chair. Both Kean and Hamilton assert in their book *Without Precedent*, that they were "SET UP TO FAIL", that being the name of the First chapter, and “We were set up to fail” being the first sentence. [182] The authors relate that the commission was starved of funds to do a proper investigation. They also confirm that they were denied access to the truth and misled by senior officials in the Pentagon and the Federal Aviation Authority. [183] Some claim their book is a “limited hangout.” [184] Phillip Zelikow was a member of the Bush transition team from the Clinton to Bush administrations. The transition involved downgrading the importance and visibility of the Counter-Terrorism Security Group. It was revealed on January 15, 2004 that both Zelikow and Jamie Gorelick, a commission member, were both still so closely involved in the events under investigation that they have been interviewed as part of the inquiry. [185] As Executive Director, Zelikow retained the power to hire all Commission staff and coordinate the flow of Kean's investigation. He also had access to all testimony-and managed all upcoming witnesses, document requests and subpoenas. [186] Zelikow co-authored a 1998 *Foreign Affairs* article on the likely political and cultural effects of a massive Pearl Harbor style terrorist event such as the destruction of the World Trade Center. In that article, Zelikow noted that such a mythic event would split time into a before and an after. The after, of course, was the “whole new world” of post-9/11 terror hysteria. [187] All commission members had potential conflicts of interest. [188]

5.4.3 9/11 Commission member Behavior

On March 21, 2004, victim family members complained of Phillip Zelikow’s conflicts of interest in an Oct. 3 2003 letter to the Commission, but were rebuffed.[189] On March 21, 2004, 9-11 Family Steering Committee and 9-11 Citizens Watch demanded the resignation of Zelikow, but he was defended by the commission. New York Times journalist Philip Shenon led the NYT coverage of the commission's activities. In early 2008, his book *The Uncensored History of the 9/11 Investigation*, revealed that among other things, Zelikow engaged in "surreptitious" communications with presidential adviser Karl Rove and other Bush administration officials during the commission's 20-month investigation.[190]

The 9/11 Commission agreed to accept the redacted audiotapes of first responders offered by the City of New York, referenced previously. [See Section 2.3.3] The result was the August “revealing” of these sanitized tapes and oral histories used by the 9/11 Commission [191]

At the last set of 9/11 Commission Hearings in New York City, members of the NYFD, NYPD, and other emergency services were criticized by Commissioner John Lehman, former Secretary of the Navy. Tarpley suggests this was part of a programmatic effort to discredit them; especially NYFD. [192]

5.5 The Silverstein Studies

A team of engineers from several firms offered their own high tech analysis, intended as a follow-up to the FEMA BPA. The firms were Weidlinger Associates Inc., LZA Technology/Thornton-Tomasetti Group, ARUPFire, Hughes Associates Inc., SafirRosetti, Hillman Environmental Group, and RWDI. This study, completed in October 2002, was commissioned by Silverstein Properties for its insurance claim on the WTC, and was forwarded to NIST. Although this study concurred that the plane crashes stripped fireproofing from columns in the debris path (and therefore that fire is what caused the collapse), the report also concluded that fire temperatures were lower than typical "fully developed" office fires. While the FEMA report cast suspicion on the floor trusses, the Silverstein report exonerated the floor trusses, and noted the core columns had to fail completely for the tower collapse. WTC 2, though hit by the second hijacked plane after One WTC, fell first "primarily" because the plane struck it at an off-center angle and caused damage that compromised the corner of the core of the building, concludes the report's authors, the New York City-based leaseholder of the World Trade Center. [193] The study fails to address the fact that the top floors of the building virtually disappeared, or rather disintegrated, in mid-air. Interestingly, Matthys Levy, of Weidlinger Associates Inc. is recorded on video making the following statement: "If you've seen many of the managed demolitions where they implode a building and they cause it to essentially to fall vertically because they cause all of the vertical columns to fail simultaneously, that's exactly what it looked like and that's what happened." [194]

5.6.0 The NIST Investigation

The National Institute of Standards and Technology (NIST) WTC study began in 2002 as a result of lobbying by the Skyscraper Safety Campaign, which was created by Monica Gabrielle and Sally Regenhard, both of whom lost family members on Sept. 11, 2001. [195] Although dealing with a great number of safety related issues, NIST was specifically charged with the task of determining how and why WTC 1, 2, and 7 collapsed. [196] The 10,000 page final report for buildings 1 and 2 was published three years later, in September 2005, by a staff of hundreds with a budget of 17.5 million dollars. Information on the NIST WTC study is available on the NIST website: www.nist.gov. [197] The website avoids bringing up the primary purpose of the study, and states that the NIST goal was "to recommend improvements in the way people design, construct, maintain, and use buildings."

The final report includes a vast amount of work on numerous topics. For example the section headings of the reports include: Design, Construction, and Maintenance of Structural and Life Safety Systems; Baseline Structural Performance and Aircraft Impact Damage Analysis; Mechanical and Metallurgical Analysis of Structural Steel; Active Fire Protection Systems; Reconstruction of the Fires in the World Trade Center Towers; Structural Fire Response and Probable Collapse Sequence; Occupant Behavior, Egress, and Emergency Communication; and The Emergency Response Operations.

These reports all contain good engineering work, but little of it had anything directly to do with collapse analysis, and even less had to do with selecting a cause of collapse. Only a small part of Mechanical and Metallurgical Analysis of Structural Steel and Structural Fire Response and Probable Collapse Sequence had anything to do with determining "cause". Beyond that, as any engineer who has worked in industry knows, what engineers do, and what the outside world sees, can be two different things. Ultimate control is in the hands of those who control the documentation and release process; i.e., management. NIST is a government entity, being affiliated with the Department of Commerce [198], so it is not "independent". In this case, "management" means "Administration," since NIST's bosses are directly appointed by George W Bush.

Regarding the cause of collapse of WTC 1 and 2, the Executive Summary of the final report states:

The Two aircraft hit the towers at high speeds and did considerable damage to principle structural components (core columns, floors, and perimeter columns) that were directly impacted by the aircraft or associated debris. However, the towers withstood the impacts and would have remained standing were it not for the dislodged insulation (fireproofing) and the subsequent multi-floor fires. The robustness of the perimeter frame-tube system and the large size of the

buildings helped the towers withstand the impact. The structural system redistributed loads from places of aircraft impact, avoiding larger scale damage upon impact. The hat truss, a feature atop each tower which was intended to support a television antenna, prevented earlier collapse of the building core. In each tower, a different combination of impact damage and heat weakened structural components contributed to the abrupt structural collapse. [199]

According to the Executive Summary, the WTC investigation included a review of thousands of documents, 1200 first-person interviews with building occupants and emergency responders, laboratory tests, and computer simulations. [200] Kevin Ryan, former site manager of Underwriter's Labs, has discussed NIST performance on these aspects of the investigation.

5.6.1 Review of Documents:

5.6.1.1 Many relevant documents not mentioned or missing. Ryan notes that many relevant design claims were not mentioned. He also notes that UL fire resistance data, as well as WSH&J (John Skilling's) fire resistance analysis came up missing. [201]

5.6.1.2 Original tower design features and claims Frank A. Demartini, the Construction Manager of the World Trade Center, stated in the History Channel's January 2001 film *World Trade Center: A Modern Marvel*, that the building could withstand "multiple" airplane hits. Demartini apparently died in the September 11 attacks. [202]

NIST notes that a document from the Port Authority of New York and New Jersey (PANYNJ) indicated that the impact of a Boeing 707 aircraft was analyzed during the design stage of the WTC towers. Although NIST investigators were "unable to locate any documentation of the criteria and method used in the impact analysis," the analysis concluded that such a collision "would result in only local damage which could not cause collapse or substantial damage to the building..." [203]

Eduardo Kausel, Professor of Civil and Environmental Engineering, MIT, and a *Scientific American* contributor, notes that the buildings may indeed have been designed for the impact load caused by a 767, but believes the designers never considered the fuel load and inferno that would surely ensue. [204]



Eduardo Kausel [204]



John Skilling [205]

However, John Skilling, partner in WSH&J, who died in 1998, stated in a 1993 interview with *The Seattle Times*: "Our analysis indicated the biggest problem would be the fact that all the fuel (from the airplane) would dump into the building. There would be a horrendous fire. A lot of people would be killed." But, he says, "The building structure would still be there." [205] Since, as Kausel notes, the 707-320 and 767-200ER both carry about the same amount of fuel, one might reasonably conclude that the buildings were indeed designed to accommodate fires from the 767-200 ER.

Only floors 95-96 and 97 of WTC 1 sustained significant damage. In these floors NIST indicates that only about 9 of the 47 core columns were significantly damaged, and about 15% of the 244 peripheral columns failed in the crash zone of each tower. Yet according to the "premier construction industry" publication, *Engineering News-Record (ENR)*, over 25% of the peripheral columns on the ground floor could be removed, and the building could still withstand 100 mph winds from any direction [206].

NIST notes that because of severed columns, loads on adjacent columns, including the effects of the hat trusses, increased by up to 25%. [207] This scenario appears to conflict with the claim found in *ENR* that loads on perimeter columns could be increased by a factor of 20 (2000 %) without failing. [208] If the *ENR* claim were correct, even at half strength, the load on the perimeter columns could be increased by a factor of 10 before failing.

5.6.2 Interviews:

Ryan notes that NIST began planning for eyewitness interviews in April 2003, 7 months after the start of the investigation. By October, NIST had still not conducted interviews, and had no access to NYC interviews. By December 2003, NYC finally agreed to allow NIST to access original interviews, but only in NYC offices. [209]

MacQueen notes that NIST had the FDNY Oral Histories, and praised the quality of judgments of the FDNY on the condition of the buildings on 9/11, but never mentions the FDNY reports of explosions. [210]

5.6.3 Lab Tests: Fire and NIST

Although NIST found "no significant steel temperatures over 625 deg. C". [211], and the half strength critical temperature of steel is 650 deg. C., their report concludes column and floor assemblies softened due to fire because fireproofing was "widely dislodged," and the floors began to sag in the impact zone, which caused perimeter columns to buckle inwards, leading to "collapse initiation" [212].

Kevin Ryan wrote to Frank Gayle, who was heading the NIST Analysis of Structural Steel:

Your comments suggest that the [exterior panel] steel was probably exposed to temperatures of only about 500 degrees F. (250 C), which is what one might expect from a thermodynamic analysis of the situation.... [yet]... this new summary report suggests that much lower temperatures were able to not only soften the steel in a matter of minutes, but lead to rapid structural collapse... This story just does not add up. If steel from those buildings did soften or melt, I'm sure we can all agree that this was certainly not due to jet fuel fires of any kind, let alone briefly burning fires in those towers. That fact should be of great concern to all Americans..."... "There is no question that the events of 9/11 are the emotional driving force behind the War on Terror. And the issue of the WTC collapse is at the crux of the story of 9/11. [213]

Ryan noted in the letter that testing of steel components of the WTC buildings was performed by UL in the 1960's, and later pointed out that the tests "verified conformance to code requirements for multiple hours of fire resistance at much higher temperatures." [214]

According to an article in the *South Bend Tribune*, Paul M. Baker, the company's spokesman, sharply rebuked Ryan's statements, stating: "The contents of the argument itself are spurious at best, and frankly, they're just wrong." Ryan was fired for making his statements.



Kevin Ryan, former UL Site Manager [215] Frank Gayle, NIST [216]

According to the *Tribune* article, Ryan copied his e-mail to David Ray Griffin, author of *The New Pearl Harbor*, and to Catherine Austin Fitts, a board member of 911Truth.org. One day later, Griffin requested and received permission to distribute Ryan's letter to other parties, and permission was given. [217]

As part of the investigation, NIST contracted with Underwriters Laboratories (UL) to test floor trusses like those in the WTC towers. All four test specimens were subject to a standard fire test (ASTM E119) and sustained the maximum design load (twice that on the WTC trusses) for two hours “without collapsing....the [empirical test] results established that this type of assembly was capable of sustaining a large gravity load, without collapsing, for a substantial period of time relative to the duration of the fires in any given location on September 11.” [218] The ASTM E119 time-temperature profile exposed the specimens to almost 1000 deg C. for over an hour. [219]

5.6.4 Analysis and Simulation

5.6.4.1 WTC tower structure

Let us roughly characterize the actual WTC tower structure. The 1375 ft. tall towers of 110 12.5 ft. floors consisted of a perimeter of 244 structural steel columns forming a square plan, with horizontal bracing (spandrels) and extremely rigid chamfered corners.

The peripheral steel columns from the 9th through the 106th floors spanned three floors vertically, and were built into massive steel wall sections measuring about 10 ft wide by 27.5 ft. (three floors) tall, consisting of three 14 inch square hollow box columns spaced three ft. four inches apart, and welded to thick steel plate spandrels.

The building core, of dimensions 79X139 ft., was a veritable forest of 47 columns, horizontal and diagonal cross braced, which housed primarily elevator shafts.

The 47 core columns varied in thickness with floor height. Individual core columns in the lower core measured 52 x 22 in. (in plan), and were formed of 5 and 3 inch plate into almost solid steel shafts that weighed up to 56 tons. [220] Other sources, including FEMA, note the average core box column cross section to be 12" wide x 36" deep x 2" thick, having a cross sectional area of 176 square inches. The box cross section construction changed to relatively light I-beam cross section above the 85th floor. [221] Hufschmid indicates the perimeter columns also decreased in thickness with increasing floor height. [222] Each tower weighed 500,000 short tons or 454545 metric tons (1 metric ton=1.1 short ton). The

intact 16 story section above aircraft impact weighed 58,000 metric tons. Thus, the upper 16 of the 110 floor system, or 14.5 % of the floors, weighed only about 12.7 % of the total building weight, so the majority of the mass per floor was in the lower floors. [223]

NIST analysis of building natural periods before and after impact shows overall stiffness of the towers was not appreciably affected by aircraft impact. [224]

5.6.4.2 NIST Simulation of Aircraft Damage to Tower Structure.

NIST performed detailed aircraft impact damage estimate simulations. Four “global simulations” were used to generate information about the state of the structural components following aircraft impact.

[225] The global models extended from floor 91 for WTC1 and floor 77 for WTC2 to the top of each tower [226]. Two models were done for each tower; one at an estimated minimum, the other at an estimated maximum aircraft speed. The column damage for all impacted floors was combined into a single image for each tower. The cases, and column damage are noted in [227]. The NIST “worst case” (ie max aircraft speed) damage assessment for WTC1 , was Case B, with 6 columns severed and 3 with heavy damage. It is instructive to compare this reasonable damage estimate with one of the more “technical” 911 Truth debunking websites, which suggests 20 core columns were “removed due to impact”:

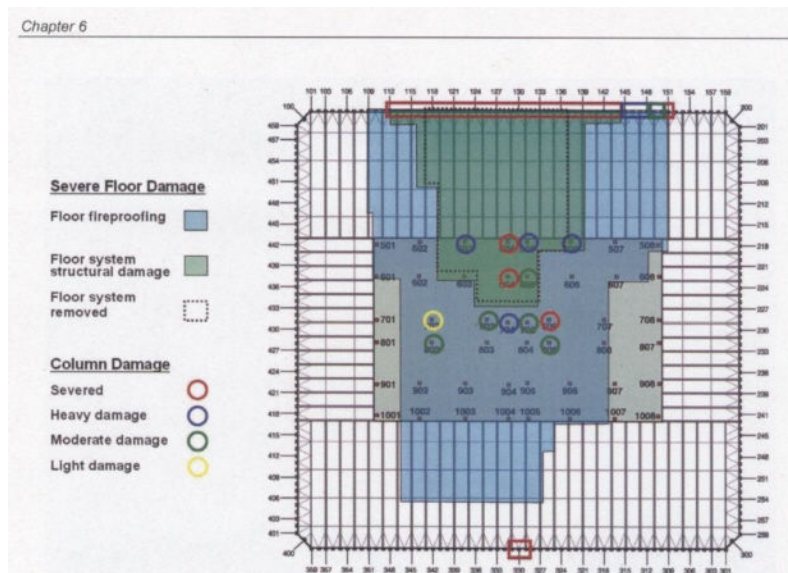


Figure 6-22. Combined structural damage to the floors and columns of WTC 1, Case A.

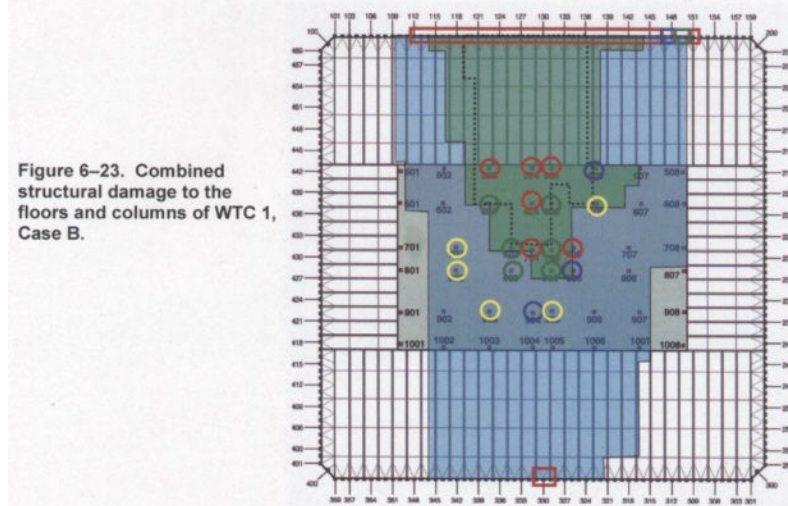


Figure 6-23. Combined structural damage to the floors and columns of WTC 1, Case B.

**Composite floor plan showing aircraft damage to North Tower, low and high speed cases
Figures 6-21 and 6-22 from NIST [228]**

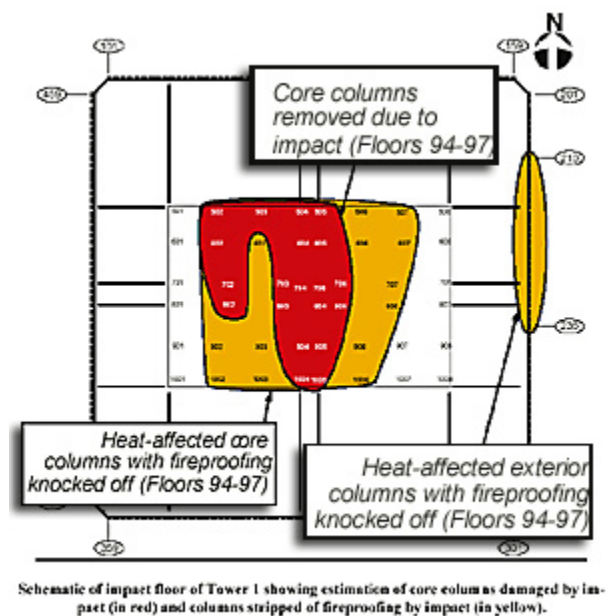


Figure purporting to show aircraft damage to WTC1 [229]

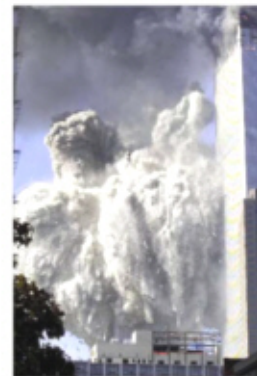
5.6.4.3 Descending Block Scenario leading up to “collapse initiation.”

The NIST story has it that the floors of the upper descending “block”, consisting of 15 floors with lighter supports, in the North Tower, were able to “pile up” and out-crush the more massive supports of the floors of the lower block, consisting of 85 floors.

Richard Gage in his *Blueprint for Truth* presentations includes real time videos clearly showing that The upper 15 floors of WTC1 disintegrate prior to the “collapse” of the lower 85 floors. [230]. This can be observed in successive frames from the sequence shown in section 1.2.2, North Tower Antenna.



Frames 9,10,11,12. Notice the top of the upper block is descending rapidly, while the top of the lower block, although enveloped in flame, appears to not have moved appreciably. [231]



A well know series of photos 1,2,3 of the South Tower shows the top 34 floors tipping and then disintegrating: [232]

Steven Jones notes the anomaly of the disintegration of the piece of the South Tower, which was also alluded to by Hufschmid: “We observe that approximately 34 upper floors begin to rotate as a block, to the south and east. They begin to topple over, as favored by the Second Law of Thermodynamics. The torque due to gravity on this block is enormous, as is its angular momentum. But then--and this I'm still puzzling over--this block turned mostly to powder in mid-air!...Remarkable, amazing - and demanding scrutiny since the US government-funded reports failed to analyze this phenomenon.” [233]

The top 34 floors begin to topple, so there is no huge mass of material bearing down on the untoppled floors. The toppling 34 floors are in free fall; no crushing mass bearing down on them, so why did these floors disintegrate into dust?

This means that there was no “massive upper block”, in either North or South Tower, to crush the lower floors. This is consistent with Jim Hoffman’s observation that “the purported ‘tremendous energy of the falling building section’ (upper block) did not even show up on the seismographs.” Brent Blanchard, senior writer for Implosion-World.com, also states that a review of all photographic images clearly shows about 95% of falling debris being forced away from the footprint of the structure. [234] There was no huge buildup of mass, either as a single massive block or buildup of debris, onto the lower block.

Any suggestion of the descending block scenario, pancake or progressive collapse is further contradicted by images showing large intact portions of the towers, apparently hanging in thin air above the “collapse” wave.



A portion of one of the WTC towers (center of image) seems to be hanging in mid-air [235]

Yet NIST states repeatedly that energy of the downward movement of the building mass above the damaged columns exceeded the strain energy that could have been absorbed by the lower floors, so global collapse ensued [236] This is the essence of “progressive collapse” theory, and it has been assumed, not demonstrated, not proven.

NIST only considers events from the moment of aircraft impact until “collapse initiation.” [237] Incredibly, “progressive collapse” of floors below aircraft impact has been left out of the NIST collapse sequence computer models! [238]

Finnish 9/11 activist Sami Yli-Karjanmaa was among the first critics of the NIST report. [239] He noted the truncation of models to reduce model size and improve computation time, failure to simulate the collapse, and the NIST collapse mantra, "repeated 12 times in the project 6 report dealing with the collapse sequence: *'The change in potential energy due to downward movement of building mass above the buckled columns exceeded the strain energy that could have been absorbed by the structure. Global collapse then ensued.'*"

5.6.4.4 Where is the momentum transfer analysis?

It has already been established that the “descending block” scenario was fictitious; there were no descending upper blocks impacting lower blocks. But for the sake of argument, suppose there had been. Suppose an upper block had hit a lower block. Stress and strain energy are in the domain of the theory of elasticity, yet NIST provides no elasticity analysis to substantiate its position. Fundamental to application of the theory of elasticity to the WTC North Tower collapse is the fact that impact of the theoretical “upper block” with the “lower block” will not just stress the topmost floor of the lower block; rather, the stress will be propagated rapidly downward and upward to the rest of the floors. This propagation will absorb energy, and the question is, as in the case of an elastic spring, how much energy can the structure absorb without breaking. Manuel Garcia, in an article for *Counterpunch*, says that he takes up the analysis of the collapse of the towers “where NIST left off” in describing the floor-by-floor collapse, but makes the same assumption as NIST, that the energy of descending floors is more than the

structure can absorb. He does not consider the benefit of elasticity is absorbing energy, but only looks at the destructive aspects of the descending “wave train.” [240]

Gordon Ross has applied the theory of elasticity in a comprehensive way to the descending block scenario to show that even had it existed, the momentum of the upper impacting block would be absorbed during the three percent elongation phase of the steel columns of the very top floor, and therefore collapse would not proceed. [241] The NIST mantra remains unproven.

The NIST investigation also omitted or distorted many other important aspects of the collapses, including movement of the WTC1 antenna before the adjacent façade, the pyroclastic dust clouds, and pools of molten metal in the WTC basements weeks after the attacks. [242] NIST failed to provide follow up study on an unusual sulfur residue which was found during the FEMA BPA study, and which FEMA recommended be investigated in future studies. [243]

5.6.5 Steven Jones on Kevin Ryan and NIST:

Jones agrees with Kevin Ryan's objections regarding the NIST study. [244] Jones also challenges NIST's collapse theory: “NIST maintains that all three building collapses were fire-initiated despite contrary observations, particularly the fact that fire endurance tests with actual models did not result in collapse....The computerized models of the Towers in the NIST study, which incorporate many features of the buildings and the fires on 9-11-01, are less than convincing. [245] NIST constructs a computer model--but realistic cases do not actually lead to building collapse. So they "adjust" inputs until the model finally shows collapse initiation for the most severe cases. [246]

NIST notes explicitly several times in its final report that the computer simulation only proceeds until the building is “poised for collapse.” Jones asks:

What about the subsequent complete, rapid and symmetrical collapse of the buildings? What about the observed squibs? What about the antenna dropping first in the North Tower? What about the molten metal observed in the basement areas in large pools in both Towers and WTC 7 as well ...Well, some of us want to look at ALL the data, without computer simulations that are "adjusted," perhaps to make them fit the desired outcome. [247]

Ryan did his own statistical analysis in a recent letter regarding the NIST report, arguing that probabilities of collapse-initiation needed to be calculated (Ryan, 2005). NIST nowhere provides such a likelihood analysis for their non-explosive collapse model. Ryan's analysis is that the probability that aircraft damage and fires (the "official theory") could cause the Towers complete collapse is less than one in a trillion (Ryan, 2005). “So where does that leave us? I strongly agree with Kevin Ryan, ‘This ["official"] story just does not add up...” [248]

5.6.6 The Engineering Community

A lone scientist, Abdolhasan Astaneh Asl, funded by the National Science foundation, got access to the steel before the ASCE/FEMA team. Despite the fact that 40 percent of a steel beam was torn away, the column did not collapse, an example of redundancy built into the 1970s-vintage structure. With admiration, Asl said "The [aircraft] impact did nothing to this building." [249]

The engineering community has raised questions about the results of the NIST WTC investigation. The popular British construction industry magazine *New Civil Engineer International* (NCEI) notes:

Controversy still surrounds the exact collapse mechanism of the Twin Towers, despite three years of detailed investigation by the National Institute of Standards & Technology (NIST) team.

Some engineers believe the collapse was influenced by factors other than the fires caused by burning aviation fuel which weakened vital structural steel elements. And they have accused NIST of repeatedly changing its explanation of the collapse mechanism....”In this latest version, the hat trusses on top of the towers play a crucial role in the redistribution of stresses after the impact,” one leading US structural engineer told *NCE* in New York “In earlier versions they are hardly mentioned.” [250]

Regarding the analysis used to bring the towers to the point of being “poised for collapse,” *NCEI* notes: “NIST had obviously devoted enormous resources to the development of the impact and fire models...The software used has been pushed to new limits, and there have been a lot of simplifications, extrapolations and judgment calls.” The same article notes NIST is “refusing to show computer visualizations of the collapse of the Twin Towers despite calls from leading structural and fire engineers...Visualizations of collapse mechanisms are routinely used to validate the type of finite element analysis model used by the investigators.” University of Manchester [U.K.] professor of structural engineering Colin Bailey said there was a lot to be gained from visualizing the structural response. “NIST should really show the visualizations; otherwise the opportunity to correlate them back to the video evidence and identify any errors in the modeling will be lost.” [251]

James Quintiere, Ph.D., one of the world’s leading fire science researchers and safety engineers, and former Chief of the Fire Science Division of the National Institute of Standards and Technology (NIST), has called for an independent review of NIST’s investigation. Alan Miller has written an excellent article on Quintiere’s plea. Miller notes that Dr. Quintiere gave his presentation “Questions on the WTC Investigations” twice at the 2007 World Fire Safety Conference, June 4- 5, 2007. Although Quintiere apparently does not consider controlled demolition a possible collapse mechanism, his frustration and objections regarding the NIST WTC study include those of 9/11 Truth researchers, as well as the engineering community. Responding to a comment from a NIST representative in the audience, Dr. Quintiere said, “I found that throughout your whole investigation it was very difficult to get a clear answer. And when anyone went to your advisory panel meetings or hearings, where they were given five minutes to make a statement; they could never ask any questions. ...” [252]

Dr. Quintiere’s presentation at the World Fire Safety Conference echoed his earlier statement to the U.S. House of Representatives, Committee on Science, on October 26, 2005, during a hearing on “The Investigation of the World Trade Center Collapse: Findings, Recommendations, and Next Steps”, at which he stated: “In my opinion, the WTC investigation by NIST falls short of expectations by not definitively finding cause, by not sufficiently linking recommendations of specificity to cause, by not fully invoking all of their authority to seek facts in the investigation, and by the guidance of government lawyers to deter rather than develop fact finding.” Dr. Quintiere noted that a number of questions had been submitted to NIST which were never acknowledged or answered. Those questions include the following: “Why were not alternative collapse hypotheses investigated and discussed as NIST had stated repeatedly that they would do?” Noting destruction of the WTC steel, Quintiere remarked that a careful reading of the NIST report shows that they have no evidence that the temperatures they predict as necessary for failure are corroborated by findings of the little steel debris they have. “Why hasn’t NIST declared that this spoliation of the steel was a gross error? ” NIST used computer models that they said have never been used in such an application before and are the state of the art.” But the validation of these modeling results [253] is in question. Others have computed aspects with different conclusions on the cause mechanism of the collapse. Moreover, it is common in fire investigation to compute a time-line and compare it to known events. NIST has not done that. ” “Testing by NIST has been inconclusive. Although they have done fire tests of the scale of several work stations, a replicate test of at least [one] WTC floor would have been of considerable value. Why was this not done? ... ” [254]

5.6.7 Purdue Study; A NIST Prop?

The Purdue University website, in an article dated September 11 2006, announced the so-called “Purdue Study” [255]. An Associated Press article appearing in the June 20 2007 online edition of USA Today noted the two year study “supports a federal agency's findings [NIST] that the initial impact from the hijacked airplanes stripped away crucial fireproofing material and that the weakened towers collapsed under their own weight.” [256]

Scholars for 9/11 Truth , Scholars for 9/11 Truth and Justice, and Prison planet, among others, have criticized this study.

Prison Planet observed that the study was funded by the National Science Foundation, whose budget was doubled last year to \$6.02 billion by the Bush administration. It's director, Dr. Arden L. Bement Jr., has worked for the Department of defense, where he was Under Secretary for Research and Engineering, and DARPA. [257] Prison Planet also noted that structural engineer Mete Sozen, the lead investigator in the Purdue study, was also on the American Society of Civil Engineers research team that confirmed the government's story about the OKC bombing in 1995, despite the many inconsistencies and conflicting testimony. [258]

Nick Irving's paper, *Purdue 9/11 Animation: Politics, not Science*, appeared on the Scholars for 9/11 Truth website dated June 23 2007 [259]. Kevin Ryan's paper; *An Open Letter to Purdue President Cordova*, has been posted by Scholars for 9/11 Truth and Justice. [260]

Ryan notes inattention to minor detail: In a paper describing the study, [261] he notes that “Flight 77 “ and “impact of Flight AA71” are referenced to aircraft impact of WTC1. He notes a litany of technical discrepancies between the NIST and Purdue studies; for example: NIST determined that the center fuel tank of the aircraft was completely empty when it struck WTC 1, but the Purdue animation shows the center tank to be completely full.

Although dubbed by some as a NIST study “prop”, an August 2007 ENR article entitled *Purdue Model of WTC Impact Conflicts with Federal Study* focuses on the differences. [262] See: How do the Studies compare.

5.6.8 Secrecy

According to the Nov. 12 2005 *New York Times*, NIST announced that its construction advisory committee, a group of experts overseeing the investigation, would meet for 10 hours on Nov. 22 at its headquarters in Gaithersburg, Maryland, but that only the first 2 hours would be public. The remainder will be closed “because of the agency's concerns that discussions about changes in construction codes could prematurely influence the building industry and the people who write the codes,” said Mat Heyman, the institute's chief of staff. Monica Gabrielle, whose husband Richard was killed when the South tower collapsed 57 minutes after it was hit by one of the hijacked jets, vehemently objected to the decision: “You have one job, and one job only -- to find out the truth of what happened to those buildings and to report to the public about it,” she said yesterday in an interview. “You don't owe industry, the Port Authority or federal agencies anything. You owe it to the public--the truth, no matter where it goes.”... “There has been considerable pressure on us to come out with our final recommendations,” Mr. Heyman said. [263]

5.6.9 The real goal of the NIST “investigation”

As Ed Haas has pointed out, the real goal of the NIST “investigation” appears to have been to protect the government. Throughout the NIST reports Haas notes the following language: “*NIST found no corroborating evidence for alternative hypotheses suggesting that the WTC towers were brought down by controlled demolition using explosives planted prior to September 11, 2001.*” Haas also notes generous use of the following disclaimer: “No part of any report resulting from a NIST investigation

into a structural failure or from an investigation under the National Construction Safety Team Act may be used in any suit or action for damages arising out of any matter mentioned in such report (15 USC 281a; as amended by P.L. 1007-321).” [264]

5.6.10 Legal challenges filed against NIST

According to a notice on the Scholars for 9/11 Truth and Justice website, dated April 14, 2007, 9/11 family members Bob McIlvaine and Bill Doyle, physicist Steven E. Jones, former UL manager, Kevin Ryan, architect Richard Gage, and the group *Scholars for 9/11 Truth and Justice* have also filed a Request for Correction (RFC) with NIST. The Request asserts that the NIST Final Report violates information quality standards, draws inferences that are inconsistent with its own computer simulations and physical tests, and exhibits a significant bias toward a preordained conclusion while ignoring available evidence contrary to it. The Request also says that if this bias is corrected, the NIST simulation clearly indicates that the Towers should not have collapsed due to plane damage and fire. The obvious alternative, which the group says should have been studied by NIST, is explosive demolition. [265]

On September 27 2007, NIST finally responded to the Jones RFC. [266] The NIST memorandum appears to agree that the NCST Act requires NIST to “establish the likely technical cause or causes of the building failure.” On the fact that temperatures reached by steel recovered by NIST directly contradicted the temperatures calculated by the analytical models, NIST states: “While NIST did not find evidence that any of the recovered core columns experienced temperatures in excess of 250 deg C., it is not possible to extrapolate from such a small sample size to state that none of the core columns on the fire effected floors reached temperatures in excess of 250 deg. C.” [267]

On the issue that NIST failed to take into account interviews of emergency personnel that suggested the presence of bombs in the towers. “NIST reviewed all of the interviews conducted by the FDNY of firefighters (500 interviews) and in addition conducted its own set of interviews with emergency responders and building occupants. Taken as a whole, the interviews did not support the contention that explosives played a role in the collapse of the WTC Towers.” [268]

On the issue of failure to carry the analysis beyond the point of “initiation of collapse”, NIST states that computer models were unable to converge on a solution, but assumes the NIST collapse mantra: “Once the collapse initiated, it is clear from the available evidence that the building was unable to resist the falling mass of the upper stories of the towers.” [269]

And to make sure we did not miss it, the memorandum repeats: “Finally, NIST has stated that it found no corroborating evidence to suggest that explosives were used to bring down the buildings. NIST did not conduct tests for explosive residue...” [270] In the midst of all this, NIST admits “ we are unable to provide a full explanation of the total collapse.” [271]

All Requests for Correction were denied, but it is believed Scholars for 9/11 Truth and Justice will appeal this decision.

5.6.11 More Scientists Architects and Engineers question NIST Results

In September 2006, Alan Miller began the website www.PatriotsQuestion911.com. [272] Initially statements from very high profile persons critical of the official story were posted, but the scope of the website quickly expanded. As of February, 2009, over 160 Senior Military, Intelligence Service, Law Enforcement, and Government Officials; over 350 professors; over 230 9/11 Survivors and family members; over 190 artists, entertainers and media professionals; over 170 pilots and aviation professionals; and over 660 engineers and architects appear on this site questioning the official story.

Patrick Leahy, Vermont Senator and current Chair of the Senate Judiciary Committee , as well as Eleanor Hill, Former Staff Director of the Joint Intelligence Committee [911] Inquiry (JICI) added their signatures on November 12, 2008

Richard Gage is a degreed and licensed architect from the San Francisco Bay area and a member of the American Institute of Architects. He has over 20 years experience as an architect, including working with numerous steel framed fire-proofed structures. In 2006, he founded Architects and Engineers for 9/11 Truth (www.ae911truth.org), which as of February 2009 has garnered 607 professional signatures demanding of Congress a truly independent investigation into the destruction of WTC1, WTC2, and WTC7 on 9/11/01. "My objective is to make all architects and engineers aware of the overwhelming evidence of controlled demolition by explosives at all three WTC high-rise buildings." [273] In his excellent DVD *9/11: Blueprint for Truth*, Gage points out that fire creeps slowly from one location to another, as successive areas are burned out, causing large visible slow deformations and would result in asymmetrical collapse. In his presentation, Gage goes clearly and carefully step by step through the scientific method in arguing his case: Each claim is tested. If it fails the test, it is rejected or reformulated. He then summarizes a large number of features which support the hypothesis of controlled demolition in a grided check list. [274] The relatively large number of engineers and architects on the www.PatriotsQuestion911.com website may be due in part to the existence of Richard Gage's Architects and Engineers for 9/11 Truth.

5.7.0 How do the Official Investigations Compare?

5.7.1 A Continuity of Faces

There does appear to be a certain continuity of staffing of the several studies supporting the Official Story: According to Kevin Ryan, [275] the American Society of Civil Engineers (ASCE) Team that first looked into the collapse of the Twin Towers was initially led by the same team that looked into the Oklahoma City Murrah Building bombing. Initial ASCE team leaders as of 9/14/01 included Gene Corley, Sr. VP of CTL Engineering as chief lead, Charles Thornton, Paul Mlakar, and Mete Sozen. Murrah building bombing report authors were Gene Corley, Charles Thornton, Paul Mlakar, and Mete Sozen. [276] Corley "knew" once the jets hit the building that the WTC would collapse as it did: "I just didn't know when it was going to happen," said Corley. [*St. Petersburg Times*] [277]

Interestingly, NYC put the firm of Thornton-Tomasetti in charge of the WTC site. Richard Tomasetti (Thornton's partner) "cleared" the decision to recycle the steel, later saying had he "known the direction that investigations into the disaster would take, he would have adopted a different stance." [278]

The first NIST meeting included comments from Gene Corley and Richard Tomasetti. Charles Thornton was on the NIST related National Construction Safety Team Advisory Committee. [279] FEMA authors Therese McAllister, John Gross, Ronald Hamburger, William Baker, Harold Nelson, and Ramon Gilsanz were co-authors for portions of the NIST report.

An internet search of Gene Corley, Charles H. Thornton, Richard L. Tomasetti, Paul Mlakar, and Mete Sozen produces mixed results. Although Corley and Mlakar could be seen as having potential conflicts of interest due to their association with the defense industry, Thornton is considered a hero, having received the 2001 Engineering News-Record Award of Excellence for being "the consummate mentor and role model." [280]

Kevin Ryan notes that Gene Corley, Charles Thornton, and Richard Tomasetti, involved in the ASCE/FEMA studies, were also involved in the studies to establish the Silverstein insurance claim. Although both studies agreed that airplane impact and fire were the cause of collapse, the Weidlinger -

Silverstein studies directly contradicted the FEMA report regarding the floor trusses as a mechanism of collapse.[281] Were these engineers unaware of this contradiction?

5.7.2 North Tower Antenna

The official FEMA 9-11 report admits a striking anomaly regarding the North Tower collapse: "Review of videotape recordings of the collapse taken from various angles indicates that the transmission tower on top off the structure began to move downward and laterally slightly before movement was evident at the exterior wall. This suggests that collapse began with one or more failures in the central core area of the building." The report notes this is consistent with other observations. [282]

A *NY Times* article also notes this behavior: "Videos of the north tower's collapse appear to show that its television antenna began to drop a fraction of a second before the rest of the building. The observations suggest that the building's steel core somehow gave way first." [283]

The NIST investigation also noted that the collapse of the North Tower Antenna suggested that the steel core gave way first, but later stated: "Photographic and videographic records were reviewed to identify structurally-related events. Where possible, all four faces of a building were examined for a given event or time period to provide complete understanding of the building response. Observations from a single vantage point can be misleading and may result in incorrect interpretation of events. For instance, photographic and video records taken from due north of the WTC 1 collapse appeared to indicate that the antenna was sinking into the roof (McAllister 2002). When records from east and west vantage points were viewed, it was apparent that the building section above the impact area tilted to the south as the building collapsed." [284]

This NIST statement cannot be precisely accurate, because we know there had to be a component of antenna motion downward as the structure collapsed. As Dr. Jones notes, the proper technical approach would be to resolve the southward and downward components of motion analytically, to see the relative contribution . [285]

NIST seems to have arrived at its conclusion in disagreement with the FEMA Report, which noted the observation of the sinking core was based on "videotape recordings taken from various angles." The NIST conclusion is based on data which is apparently not available to the public.

5.7.3 Amount of jet fuel burned within the WTC towers

According to the FEMA BPA, aircraft fuel capacity was 23,980 gallons; at time of impact, each jet had an estimated 10,000 gallons of fuel on board. [286] "Calculations indicate that between 1000 and 3000 gallons of jet fuel were likely consumed" in fireballs for each tower. The remainder flowed away from the structures, or burned within them. Assuming half flowed away, then approximately 4000 gallons remained on the impact floors to be consumed in the fires that followed. The jet Fuel would have been consumed within the first few minutes. [287]

The NIST Executive Summary states "About 10,000 gallons of jet fuel were sprayed into multiple stories" [288] The more detailed account states: "Upon aircraft impact, a significant fraction of 10,000 gallons of jet fuel ignited within the building." [289]

Apparently struggling for every gallon to be burned within the towers, NIST finally concedes that somewhat less than 10,000 gallons of fuel actually burned in each tower: "The timing and appearance of the fireballs indicated they were ignited within the building. A calculation based on the oxygen contained within the building on the floors into which the fuel tanks entered indicated that up to 15% of the available jet fuel could have burned inside the building in the immediate event...If roughly another

15-20 % of the jet fuel burned outside the building, as in WTC2, then about two thirds of the jet fuel remained inside the building to burn later or just flow away from the fire zones." [290]

With WTC 2; we find classic NIST-ese. Is it a highly detailed description of how much fuel burned in the building, or obfuscation? [291]

Mete Sozen, the Kettelhut Distinguished Professor of Structural Engineering in Purdue's School of Civil Engineering, and lead investigator for the Purdue study, stated "the ensuing fire fed by an estimated 10,000 gallons of jet fuel". [292]

The figures from the first official investigation, by FEMA, are more in line with figures given on the Discovery Channel, noted earlier by Dave McGowan. The tendency is that in later investigations, the estimated amount of fuel burned inside the buildings escalates.

5.7.4 References to explosives, explosive, or anomalous characteristics

Chapter 1 of the FEMA Report notes:

Sudden collapse of each tower sent out air pressure waves that spread dust clouds of building materials in all directions for many blocks. The density and pressure of the dust clouds were strong enough to carry light debris and lift or move small vehicles and break windows in adjacent buildings for several blocks around the WTC site. [293]...Once movement began, the entire portion of the building above the area of impact fell in a unit, pushing a cushion of air below it. As this cushion of air pushed through the impact area, the fires were fed by new oxygen and pushed outward, creating the illusions of a secondary explosion. [294]

Although not noted in the main text, the FEMA Report did note in appendix C the presence of sulfur and a eutectic reaction, which had a corrosive effect of the steel, as previously discussed. Although FEMA noted this was an unusual event, and recommended a detailed study, this went no further in the official reports.

Chapter 9 of the *9/11 Commission Report* contains only one oblique reference to explosions: "When the South Tower collapsed, firefighters on the upper floors of the North Tower heard a violent roar, and many were knocked off their feet...those firefighters not standing near windows facing south had no way of knowing that the South Tower had collapsed, many surmised that a bomb had exploded..." [295]

Investigations by the 9/11 Commission, FEMA, and NIST did not address the well documented presence of molten metal in the WTC basements. [296]

5.7.5 Aircraft Impact Damage

The towers are traditionally accepted as having been designed by Leslie E. Robertson to withstand 140 mile per hour winds, and the impact of the largest airliner of the day, the Intercontinental Boeing 707. This has been acknowledged in both the FEMA BPA, and the NIST investigations. [297]

The FEMA BAP contends that the 707 design was for low speed and low fuel, and that the 767 is more "massive" than the 707. Both of these claims have been rebutted. [298]

FEMA wrote that for each tower, the aircraft impact resulted in severe structural damage, including some localized partial collapse, but did not result in the initiation of global collapse. [299] The NIST Executive Summary states: "The two aircraft hit the towers at high speeds and did considerable damage to principle structural components," Abdolhasan Astaneh Asl wrote: "The impact did nothing to this building." [300]

5.7.6 "Pancaking", "Progressive Collapse"; Mode of failure; New building codes

While the FEMA report cast suspicion on the floor trusses, the Silverstein report exonerated the floor trusses, and noted the core columns had to fail completely for the tower collapse. The Silverstein study also concluded that fire temperatures were lower than typical "fully developed" office fires. [301]

The FEMA BPA implicated weakening of floor trusses as leading to "progressive collapse". It mentions "pancaking" only a few times, but references floor failure and weakness numerous times. [302]

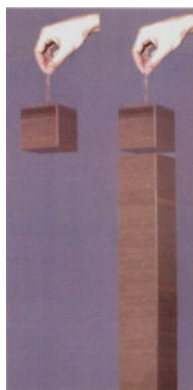
The March 2005 *Popular Mechanics* debunk article notes in support of "pancake theory":

FACT: Once each tower began to collapse, the weight of all the floors above the collapsed zone bore down with pulverizing force on the highest intact floor. Unable to absorb the massive energy, that floor would fail, transmitting the forces to the floor below, allowing the collapse to progress downward through the building in a chain reaction. Engineers call the process "pancaking," and it does not require an explosion to begin, according to David Biggs, a structural engineer at Ryan-Biggs Associates and a member of the American Society of Civil Engineers (ASCE) team that worked on the FEMA report. [303]

In the first place, as we have seen, there were no massive blocks bearing down with pulverizing force, because both upper blocks were pulverized. Further, no momentum transfer analysis was done; and it is just assumed the lower floors would fail, because they did.

Going further, Dr. Steven Jones puts it this way: "Where is the delay that must be expected due to conservation of momentum, one of the foundational laws of physics? That is, as upper-falling floors strike lower floor—and intact steel support columns—the fall must be significantly impeded by the impacted mass. - somehow the enormous support columns failed /disintegrated along with the falling floor pans. How do the upper floors fall so quickly, then, and still conserve momentum in the collapsing buildings?" [304] The contradiction is ignored by FEMA, NIST and 9-11 Commission reports where conservation of momentum and the fall times were not analyzed.

Dr. Steven Jones and Richard Gage have used the following example to illustrate the point. Which tower top will strike the ground first? According to the official story, both will strike the ground at the same time.



Tower tops in free fall [305]

“Like all office buildings, the WTC towers contained a huge volume of air. As they pancaked, all that air--along with the concrete and other debris pulverized by the force of the collapse--was ejected with enormous energy. ‘When you have a significant portion of a floor collapsing, it’s going to shoot air and concrete dust out the window,’ NIST lead investigator Shyam Sunder tells *PM*. Those clouds of dust may create the impression of a controlled demolition, Sunder adds, ‘but it is the floor pancaking that

leads to that perception.” [306] Although “pancake/pancaking” is not referenced in the NIST report, the lead investigator uses the term freely.

Steven Jones has an excellent response: the timing between puffs is too short, so air expulsion due to collapsing floors is excluded. A rough calculation of the time for the north tower to freefall (from 1368 ft) is 9.22 seconds, and the time for one floor to freefall is .88 seconds. [307] Pancaking as described by Mr. Sunder would require each floor to collapse (free fall) independently and sequentially for each of the 110 floors. The total time would be 110 stories * .88 seconds per story, or about 97 seconds. This does not include a delay time for the breaking of successive floors. So the observed time of collapse of the North Tower (under 16 seconds, is much closer to freefall time (9.2 seconds) than the time for “pancaking” as described by Mr. Sunder (Which would take 97 seconds).

As Steven Jones notes, the FEMA “Pancaking” approach “finally fails to account for the observed collapse of the 47 interconnected core columns which are massive and designed to bear the weight of the buildings, and it has the striking weakness of requiring the connections of the floor pans to the vertical columns to break, both at the core and at the perimeter columns, more or less simultaneously.” [308]

Although NIST has officially given up the idea of “pancaking” [309], which is never mentioned in its final report, it has clearly has not given up on the term “progressive” collapse [310], which is mentioned frequently. [311]

Although the FEMA, NIST and Purdue studies emphasize the high temperatures of the fires, the Silverstein study noted that fire temperatures were lower than typical “fully developed” office fires.

Although both NIST and the Purdue study agree that stripped fireproofing from the core columns was a factor leading to collapse, the Purdue study, as the Silverstein study, suggest core columns failed first, while the NIST study concluded the perimeter columns failed first. NIST reported that 9 core columns were severed or heavily damaged in the “more severe” category, while Purdue claims 52 core columns were “destroyed or heavily damaged” over a height six floors; Shyam Sunder, lead NIST WTC investigator, suggested the fidelity of modeling was the reason for this discrepancy. [312]

Kevin Ryan notes that in one important way the Purdue animation reflects reality: it is clear that the aircraft impacting the WTC towers could not have been instantly transformed into thousands of tiny pellets in the form of shotgun blasts. The Purdue animation more realistically displays the large fragments of debris from the fuselage clattering around in the skeletal framework of the tower. This contradicts the NIST notion of the aircraft disintegrating into shotgun type blasts, purportedly scraping the fireproofing off of thousands of square meters of surface area. [313]

NIST says the connections of the floor pans to vertical columns do NOT fail (contrary to FEMA's model), but rather the floor pans “pull with enormous force, sufficient to cause the perimeter columns to significantly pull in, leading to final failure.” [314]

NIST coordinated on some WTC work with ARUP, an international construction and safety organization. According to *NCEI*, “British engineers strongly disputed official American claims that the towers became more vulnerable to collapse as a result of removal of fireproofing due to aircraft impact. The disagreement provoked a strong exchange of views at a major conference held at Gaithersburg near Washington DC to discuss the official findings. British engineer Barbara Lane stated that from ARUP’s analysis, the towers would have collapsed even without the removal of fireproofing. [315] ARUP also contests another NIST failure mechanism: “the core columns cannot pull the exterior columns in via the floor simply as a result of column shortening.” [316]

Although the FEMA BAP acknowledged the novelty of the collapses, [317] Griffin notes of NIST: "Indeed, the supposedly definitive report put out by NIST--the National Institute for Standards and Technology (2005)--even implies that fire-induced collapses of large steel-frame buildings are normal events (Hoffman, 2005)." [318]

Indeed, NIST, based on the singular collapses of 9/11, appears to have come up with a whole new class of building failures that were not "coded" for in past history, and must be protected against retroactively and in the future. [319]

NCEI notes that the engineering community as well as developers are now concerned about another layer of regulations, some of whom doubt the resulting buildings will be any safer. [320]

The apparent revisionism we have seen in the politically correct "collapse" mechanism advocated by the US technical and fire fighting community seems paralleled in Great Britain. Although British elements in ARUP are now convinced the towers would have fallen even without "removal of fireproofing", several high profile British structural designers were originally quite dubious of the idea of fire induced collapses. In an article dated 4 October 2001, Professor Wilem Frischmann, of the Pell Frischmann Group and the City University, London, said that the aircraft puncturing of the outer steel shells of the towers would not in itself have caused the towers to fall. Although the explosion caused by the fuel-laden aircraft would have been intense, the lack of available oxygen inside the towers would, according to Professor Frischmann, have limited the fireball's temperature to less than 1,000 Celsius, within the tower design limits. Architect Bob Halvorson, of Halvorson and Kaye in London said: "There is going to be a debate about whether or not the World Trade Center Towers should have collapsed in the way that they did....We are operating well beyond realistic experience." [321]

One might wonder how there can be so much divergence in details of the mechanism of building collapse proposed by the various studies, even by the same engineers, yet such certainty that the underlying cause is aircraft impact and fire.

6.0 Bush Science

The NIST study is a product of the Bush administration. An enumeration of the inconsistencies of the NIST study is consistent with a long standing and well documented pattern of Bush administration abuse of the scientific method. The House Committee on Government Reform found "numerous instances where this Administration has manipulated the scientific process and distorted or suppressed scientific findings." [322]

On February 18, 2004, over 60 leading scientists, including Nobel laureates, signed a statement that "The distortion of scientific knowledge for partisan political ends must cease." Since then, over 9000 additional scientists and engineers have signed on. [323]

Consider the case of the US Fish and Wild Life Service. According to the *L.A. Times*, a survey of the 1400 employees working for the U.S. Fish and Wildlife Service scientific staff was conducted jointly by the Union of Concerned Scientists and Public Employees for Environmental Responsibility.

A division of the Department of the Interior, the Fish and Wildlife Service is charged with determining which animals and plants should be placed on the endangered species list and designating areas where such species need to be protected. More than 20% of the 420 survey responders reported they had been "directed to inappropriately exclude or alter technical information." More than half of survey responders said they knew of cases in which commercial interests, including timber, grazing, development and energy companies, had applied political pressure to reverse scientific conclusions deemed harmful to

their business. One biologist, who retired in 2002 after 20 years with the agency, said: "Political pressures influence the outcome of almost all the cases...As a scientist, I would probably say you really can't trust the science coming out of the agency." [324]



**left: George Bush on Global Warming;
Center: James Connaughton, chairman of the White House Council on Environmental Quality [325]**

A clear example of distortion of scientific knowledge was seen in the subsequent declaration by EPA Administrator Christine Todd Whitman that the "air is safe" in Manhattan a week after the attacks. [326] In fact, according to top scientists, the air at Ground Zero was highly corrosive, and a "significant threat to health." [327] The White House Council on Environmental Quality, headed by James Connaughton, directed the EPA to edit the scientific findings "based on how it should be released publicly." [328] Since then, problems have mounted from 9/11 dust. The number of people with medical problems linked to the 9/11 attacks on New York has risen to at least 15,000, and over 70,000 are enrolled in WTC Health Registry. [329]

7.0 Alternative Theories

7.1 Steven Jones Thermite/Thermate Alternative

On 23 Nov 2003, D. P. Grimmer published a paper which considered the possible use of thermite to melt sections of the WTC inner core columns in such a way as to cause collapse. The paper estimated the mass and volume of thermite necessary to allow melting, and concluded that it would have been physically possible to deliver this quantity of thermite to the WTC towers. [330]

In late 2005, and early 2006, two articles were published in the Deseret News, a Salt Lake City mainstream publication, which signaled the emergence of the issue of the collapse of the WTC towers into mainstream U.S. consciousness. The first article, "BYU Professor Thinks Bombs, Not Planes, Toppled WTC," [331] set the stage, justifying the possibility that the WTC towers were subject to explosives. The article included a list of characteristics observed during the collapse of the towers which paralleled classic examples of controlled demolition. The second article, "Physicist Says Heat Substance Felled WTC," [332] presented some preliminary evidence for a specific demolition mechanism. Jones noted that

the government requires standard explosives to contain tag elements enabling them to be traced back to their manufacturers, but no tags are required for aluminum, iron oxide, or sulfur, the constituents of a powerful incendiary. The article noted a video showing a yellow molten substance flowing from the South Tower moments before it collapsed.

About this same time, Scholars for 9/11 Truth was founded, which attempted to focus on scientific fact in an investigation of the events of 9/11. At this time, Jones began several ongoing reports to document his position, and his alternative theory of the collapse of the towers: “Answers to Questions and Objections,” and “Why Indeed did the WTC Buildings Completely Collapse?” See “Abbreviations used in endnotes and text.”



Stuart Johnson, Deseret Morning News
[Dr Steven E. Jones] [332]

A key question is: how does a small amount of jet fuel at the top of the towers, with a maximum temperature of 1000 deg C, result in large explosions and molten metal at 1500 deg C. in the basement?

Jones maintains that “these observations [molten metal in the WTC basements] are consistent with use of the high-temperature thermite reaction or some variation thereof such as thermate, used to cut or demolish steel... Thermite is a mixture of iron oxide and aluminum powder. The end products of the thermite reaction are aluminum oxide and molten iron. So the thermite reaction generates molten iron directly, and is hot enough to melt and even evaporate steel which it contacts while reacting...Thermite contains its own supply of oxygen and so the reaction cannot be smothered, even with water...Use of sulfur in conjunction with the thermite produces thermate, which will accelerate the destructive effect on steel.” [Remember Appendix C of the FEMA report discusses the presence of sulfur, creating a eutectic reaction]. Jones also said the use of explosives such as HDX and RDX should also be considered.] [333]

From an analysis of the color of slag recovered from WTC debris, and melting temperatures of various metals, Jones concluded the metal could be either structural steel and/or iron, both of which melt at about 1500 deg C. [334]



Metal slag recovered from WTC basement [335]

Jones notes that an abundance of Iron (as opposed to aluminum) is suggested by the reddish rust in a sample of slag recovered from the WTC site, now stored in a warehouse in NY. [335]



Bright flame in S. Tower [336]

Molten metal flows in S. Tower [337]

Jones notes that a photograph found in the NIST Report provides evidence for a highly exothermic reaction. Regarding this photograph, NIST notes “an unusual flame is visible ... a very bright flame... a bright spot appeared ... followed by the flow of a glowing liquid” [336]. A number of frames showing flowing molten metal from the South Tower, shortly prior to its collapse, are available. [337]



Ash from South Tower [338]

A previous version of “Why Indeed” shows a picture [taken by Rob Miller, photojournalist with the *New York Post*] with white ash rising from the South Tower near the dripping, liquefied metal. [338]



Thermite reaction at BYU lab [339]

Jones notes the similarity between NIST’s “bright flame” followed by molten metal and white ash with a thermite reaction in his lab at BYU, which shows bright flare, molten yellow-white glowing iron, and a plume of aluminum oxide smoke. [339] He states: “These discoveries strongly motivate an immediate in-depth investigation of the use of thermite-type reactions in the destruction of the” WTC. [340]

NIST investigators ruled out the possibility of melting steel being the source of the material because of the unlikelihood of steel melting. They suggested the molten material may have been aluminum from the impacting aircraft. [341] Jones argues that although aluminum may glow faintly, the material flowing from the South Tower is most likely not aluminum, but iron. [342]

As of July 2006, Jones stated that a peer reviewed qualitative analysis has shown that samples of formerly molten material from the Towers were mostly iron. Electron microprobe data also showed aluminum, sulfur, and potassium, as well as fluorine. Potassium (K), manganese (Mn) and fluorine (F) are used in thermite explosives, and are often present in the residue, and may be part of a "thermite fingerprint." [343] Note that the FEMA investigation found sulfidization of several samples of WTC steel. Jones notes: "While gypsum in the buildings is a possible source of sulfur, it is highly unlikely that this sulfur could find its way into the structural steel such as to form a eutectic." [344]

Dr Jones and his students also ran experiments to see if a hypothesis put forward by F. Greening might be credible. This hypothesis holds that aluminum from the planes which struck the Towers could melt, and that this aluminum might fall on "rusted steel surfaces inducing violent thermite explosions." The results of Dr. Jones' experiments lent no support whatever to the Greening theory. Aluminum hit with torch does NOT catch fire; Aluminum melts and flows at about 600 deg c. No violent aluminum-rusty steel or aluminum-gypsum/concrete/plastic reactions occurred. [345]

Tiny aluminum particles in iron oxide can be cast into any shape in a "sol-gel", developed by Livermore Labs. However, Kevin Ryan notes that sol-gels might leave a tell-tale residue: 1,3,diphenylpropane. [346] Analysis of WTC dust showed that one molecule, 1,3,diphenylpropane, was present at levels "that dwarfed all others," according to EPA's Erik Swartz. "We've never observed it in any sampling we've ever done." Swartz speculated that the most likely source was plastic/ polyvinyl chloride materials of tens of thousands of burning computers[347]

In his paper *9/11 Revisited Applying the Scientific Method*, Dr. Jones reports of his work on dust from the WTC collapses. The iron rich component of the WTC dust samples was analyzed by scanning electron microscopy and x-ray energy dispersive spectroscopy (X-EDS). The result: much of the iron rich dust was composed of roughly spherical particles-microspheres, up to about 1.5 mm in diameter. The presence of metallic microspheres implies that the metals were once molten so that surface tension pulled the droplets into a roughly spherical shape. Jones notes that a thermate reaction of a mixture of iron, aluminum powder, and sulfur, produces metallic spheres with high peaks in iron, aluminum, and sulfur, in X-EDS testing. He notes this would constitute a chemical signature of thermate variant microspheres. Although he meticulously avoids drawing any conclusions, he does point out that the WTC iron rich dust samples also contained aluminum and sulfur. He then points out that the NFPA (National Fire Protection Association) 921 Guide for Fire and Explosion investigation clearly states: "Unusual residues might remain from the initial fuel. Those residues could arise from thermite, magnesium, or other pyrotechnic materials." He then notes that looking for residues is the standard procedure for fire and explosion investigations. "Was the steel tested for explosives or thermite residue?" NIST's answer: No, and in that answer they are remiss. [348]

Although Jones notes that the USGS Particle Atlas of WTC Dust shows micrographs of a few metallic spherules, [349] particle form is not considered in most air quality analyses. *Environmental Health Perspectives* notes "The explosion and collapse of the World Trade Center (WTC) was a catastrophic event that produced an aerosol plume impacting many workers, residents, and commuters during the first few days after 11 September 2001. " Each of three samples was analyzed for inorganic and organic composition, not for particle size or shape. [350]

On 4/18/08, Dr. Jones and his researchers successfully published their first paper in a mainstream Civil Engineering journal, *The Open Civil Engineering Journal*, pp.35-40. The title is *Fourteen Points of Agreement with Official Government Reports on the World Trade Center Destruction*. Authors: Steven E. Jones, Frank M. Legge, Kevin R. Ryan, Anthony F. Szamboti, James R. Gourley. The abstract was given as: "Reports by FEMA and NIST lay out the official account of the destruction of the World Trade Center on 9/11/2001. In this Letter, we wish to set a foundation for productive discussion and understanding by focusing on those areas where we find common ground with FEMA and NIST, while at the same time countering several popular myths about the WTC collapses." [351]

Jones research on the collapse of the WTC towers made Project Censored story number 18 in 2007. Peter Phillips noted that inclusion of few stories, if any, have generated more controversy, and that two of Project Censored's esteemed national judges resigned because of its inclusion in the 2007 yearbook. [352]

7.3 Gordon Ross Four Phase Attack Alternative

According to Gordon Ross, the towers were demolished in four separate steps. The four steps destroyed successively the upper central core, perimeter corners, perimeter sides, horizontal bracing, and lower core.

Ross notes that the chamfered corners of the tower perimeter were capable of supporting the total mass above them, without the help of the perimeter sides or tower cores. He points out that the floor trusses from the core connected only to the mid perimeter columns within the projection of the core width (which makes good sense geometrically). The floor trusses from the four corners outside the projection of the core were connected to a transfer truss, and the transfer truss was connected to the core. Ross suggests that this provided two somewhat independent structural systems; the perimeter corners, and the core and perimeter mid-sides. Each would have been capable of sustaining the towers structure. Ross argues that both of these systems were attacked and destroyed to bring about total collapse.

Upper core failure would result in transfer of the entire load through the hat truss ("building top") to the perimeter columns. The downward moving core would pull the perimeter mid-side columns inward (inward bowing). Failure of each of the four corners of each tower would also result in a transfer of the load to the perimeter mid-sides columns, which would then fail.

Ross believes, to facilitate collapse, the floor to mid-wall perimeter and core column connections were broken. He notes this would be especially necessary on the mechanical floors, because of their relatively greater design strength. Finally, the lower core was attacked.

Ross provides evidence, including still images and video, for each of the stages of destruction. These include: Survival of the lower core structure until an advanced stage of the collapse; Survival of the corners of the perimeter structure after the collapse front has passed; Inward bowing of the perimeter walls; Sagging of floors; Tilting movement of the upper section; Bending of upper section; Early disintegration of upper section; Early downward movement of the antennae; Ejections of dust & debris simultaneously across whole floors; Behavior of the "spire"; Flashes of light; Color and character changes of smoke emissions; Molten metal ejections; Failure of core structure horizontal bracing; and Angle cut core columns. This scenario would appear to account for the infamous behavior of the top 34 floors of the South Tower, which had seemingly violated the principle of angular momentum. [353]

8.0 Wrapping it up with a few questions

8.1 Questions RE the "Official Story"

Why have no steel framed structures collapsed either before or since 9/11 due to fire, even though subjected to very intense fire?

Could it be that the World Class structural design firm Worthington, Skilling, Helle & Jackson screwed up in designing the towers to sustain impact with a 707, even when, according to John Skilling, they designed for fires from about the same amount of fuel that the impacting aircraft carried?

We have been told by the Official Discovery Channel that the fuel burned up in 8 minutes or less in each tower, so we might ask what supplied the fuel needed for sustained high temperatures for the remaining time until the towers “collapsed”?

Why does NIST conclude floor assemblies softened due to high temperatures, when actual NIST test specimens endured temperatures of almost 1000 deg. C for two hours, while “no significant steel temperatures over 625 deg. C.” were found? (Not withstanding the fact that a lot of the steel had been inappropriately “recycled”)

Where did all the extra energy come from to: create a pyroclastic flow; cause massive destruction; pulverize concrete to fine dust; melt metal in basements; vaporize steel columns in mid-air; partially or fully burn or melt thousands of cars and trucks near the towers; create afterglow, and “vaporize humans”?

Who is correct in calculating the amount of energy needed to produce the observed quantity of dust during tower “collapse”? Jim Hoffman calculated 10 times the available gravitational energy, and the “official story” calculated 30% of available gravitational energy.

What caused the non-incendiary destruction of the lobby, basement machine shop, and underground parking garage in the North Tower, prior to its collapse ?

A floor-by-floor gravitational collapse of a 110-story tower appears to require over 90 seconds, a time much longer than the actual time of collapse of the towers. Why?

How could any mechanical process (causing a floor by floor chain reaction collapse) proceed through 110 floors with enough speed to roughly coincide in time to building free fall?

What caused the numerous explosions and tower swaying reported prior to and during the collapses?

What caused the smoke coming from the area around buildings 5, 6, and/or 7, videotaped by CNN, moments after flight 175 crashed into the South Tower?

Why did major media outlets mis-represented the size of the WTC service cores by use of a misleading diagram?

WTC1,2, and 7 all collapsed symmetrically at close to the time of freefall; produced a pyroclastic cloud; showed signs of eutectic reaction; and molten metal remained in the basements for weeks. Photographic evidence shows that steel from the towers actually vaporized in mid-air. Photographic evidence shows metal of all sorts, including thousands of cars and trucks near the towers, being burned and/or melted. Sometimes a vehicle is only partially burned, and the remainder is undamaged, and videos showed an afterglow after each collapse. How can this be the work of gravity?

Why would the Supreme Court of New York label reports of emergency responders "opinions" and "recommendations" as untrue, across the board, and refuse to release this information to the public? Why was this information redacted from first responders reports, and this redacted material accepted by the 9/11 Commission? What are these "opinions" and "recommendations" NY City wants to keep hidden? Why has the New York Times removed all articles related to these issues from their archives?

Why were the relatives of 16 firefighters identified on the "lost tape" required to sign a statement of non-disclosure before being allowed to hear it?

The so-called "lost tape", which recorded the last words of Chief Orio Palmer on the 78th floor of the South Tower, were ostensible a "secret" because they were going to be used in the Zacarias Moussaoui trial. That trial is over now, so why not let the public hear the un-redacted audio tape of Chief Palmer's last moments?

Who told Former Mayor of New York City Rudolph Giuliani that the towers were going to collapse, and how did they know? Why did the 9/11 Commission not further question Giuliani on this?

Why is it that a number of European explosive experts continue to support the possible scenario of explosives in the towers, while that scenario has been consistently denied by the "official" investigations?

Why do the official reports by NIST, FEMA and the 9/11 Commission ignore the possible significance of the well-documented evidence of large quantities of molten metal observed in the basement areas of the Twin Towers and WTC 7? NIST speculated the metal may have been aluminum from the aircraft, but apparently have done no testing of recovered slag to verify this. Why?

Why do the official reports by NIST and the 9/11 Commission laud the information provided by first responders on the state of the buildings, but ignore oral histories from these same first responders mentioning the sounds of explosions?

The FEMA BPA found evidence of sulfur, which allowed a "eutectic reaction," which resulted in "severe corrosion and subsequent erosion" of some WTC steel. Why did the FEMA BPA consign evidence of this reaction to a report appendix? Where did the sulfur come from in the reaction? When did the eutectic reaction occur? Why did NIST not follow through with the FEMA request for further study?

Why has NIST assumed the most critical aspect of global tower collapse: "Energy of the downward movement of the building mass above the damaged columns exceeded the strain energy that could have been absorbed by the lower floors"? Why no momentum transfer, or elasticity analysis to prove that assumption? Was this because there was no "upper block" in either the North or South Tower collapse? The upper floors of both disintegrated prior to, or during, the collapse of the lower blocks.

That the Towers collapsed due to progressive collapse as described by NIST makes no sense. The top 15 floors of the North Tower are recorded on video to have disintegrated prior to the collapse of the remaining floors. The top 34 floors of the South Tower begin to topple, so there is no huge mass of material bearing down on the untoppled floors, so why did the lower floors collapse? The toppling 34 floors are in virtual free fall; no crushing mass bearing down on them, so why did these floors disintegrate into dust?

Why, as members of the engineering community state, has NIST "changed its story" in explaining the collapses? Why has NIST resisted calls from the engineering community to simulate the collapses?

www.serendipity.li/WTC.html notes that steel which is subjected to explosion exhibits a characteristic which metallurgists call "twinning". Why has this test not been performed on representative WTC steel and reported upon?

Why have many of the same people headed the study of the Oklahoma City Murrah building bombing, as well as the FEMA and NIST WTC collapse studies? Why have many of the same people been

responsible for writing the ASCE, FEMA, and NIST reports? Why did the engineers who signed off on the NIST report also sign off on the Silverstein report, even though those two studies reached contradictory conclusions regarding collapse mechanism?

Remember that in 2006 the Bush administration doubled the budget of the National Science Foundation to \$6.02 billion. Was the NSF funded Purdue Study a payback?

How can there be so much uncertainty about the mechanism of the collapse, but yet such certainty of the underlying “cause” of the collapse, i.e., aircraft impact and fire?

NIST was charged with determining how the towers “collapsed”, but themselves have admitted that they do not know how global collapse ensued. Why has this been accepted?

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