

# Observations on NIST's WTC Fireproofing Loss and Collapse Scenario for the WTC Towers\*

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In this paper, we outline and comment upon one of the most critical problems with the NIST WTC report. It involves serious contradictions within the report itself, invalidating the investigators' conclusions that the collapse of the Twin Towers was caused purely of the impact of the aircrafts and the resulting fires started by them. According to NIST, the collapses were initiated by office fires heating the floor trusses to the point where they began to sag downward. This in turn pulled on the perimeter columns and caused them to bow inward and eventually break, initiating the fall of the upper section of each building. [1] Though many researchers have pointed out severe flaws in the WTC NIST report [2], we shall focus on one aspect of NIST's collapse scenario that, by their own admission, is crucial to their conclusions; the loss of fireproofing within the buildings.

According to NIST:

*The WTC towers likely would not have collapsed under the combined effects of aircraft impact and damage and the extensive, multi-floor fires if the thermal insulation had not been widely dislodged or had been minimally dislodged by aircraft impact. [3]*

Furthermore, researchers in the 9/11 Truth Movement submitted a Request for Correction to NIST, pointing out several flaws in their report. [4] One flaw noted by these researchers was that NIST's physical tests of floor models being heated by fires did not produce the level of sagging as NIST suggested in their report. In response, NIST stated:

*[I]t is not possible to compare the floor sagging observed during the ASTM E119 tests with the floor sagging calculated by the analysis models. The ASTM E119 furnace profile is not representative of real fire condition. In addition the specimens had been fireproofed which prevented the steel from heating as quickly as it would in an unprotected condition as was modeled based on the estimated damage to the fireproofing due to debris impact. [5]*

As we can see, NIST places a significant amount of importance on the fireproofing's dislodgement. The question is, could the plane impacts have dislodged the fireproofing to the extent NIST claims? Here we present three reasons why this cannot be the case.

## **1. The energy needed to dislodge the fireproofing was insufficient.**

In their attempt to defend NIST's collapse scenario, supporters of the official story often show pictures of the impact hole that show damaged steel missing fireproofing. [6] However, it's important to note that these photos show damaged steel at the very front of the impact. Obviously, as the plane first enters the building it retains much of its kinetic energy, but as it travels through the building it will gradually lose energy. And in the case of the North Tower, the collapse initiated on the south side of the building, opposite to where the plane entered.

NIST attempted to show that the fireproofing would be widely dislodged by firing buckshot and shrapnel at steel plates and bars coated with SFRM (Sprayed on Fire Resistant Material). [7] During the testing, the gun was fired at velocities of approximately 500 ft/s and produced damage to the SFRM. However, at one point the gun misfired and produced a projectile velocity of just 102 ft/s (31 m/s), which resulted in no damage to the SFRM. [8] And yet according to NIST, the plane debris was only travelling at a rate of approximately 51 ft/s (15 m/s) once it reached the south side of the North Tower where the fire was supposed to have initiated the collapse. [9] This strongly suggests that the plane debris would have been unable to dislodge any fireproofing in the area of the building where the fires are said to have started the collapse.

## **2. The plane debris could not have behaved in the manner as described by NIST.**

NIST's scenario requires that the planes be shredded into small pieces as they enter the buildings to widely dislodge the fireproofing. As explained by Kevin Ryan:

*[NIST's] test for fireproofing loss, never inserted in the draft reports, involved shooting a total of fifteen rounds from a shotgun at non-representative samples in a plywood box[...] Unfortunately, it's not hard to see that these tests actually disproved their findings. One reason is that there is no evidence that a Boeing 767 could transform into any number of shotgun blasts. Nearly 100,000 blasts would be needed based on NIST's own damage estimates, and these would have to be directed in a very symmetrical fashion to strip the columns and floors from all sides. However, it is much more likely that the aircraft debris was a distribution of sizes from very large chunks to a few smaller ones, and that it was directed asymmetrically. [10]*

The planes being shredded into such small fragments is shown in simulations provided in NIST's report (see images below). Kevin Ryan's assertion that "it is much more likely that the aircraft debris was a distribution of sizes from very large chunks to a few smaller ones" is corroborated by three facts:

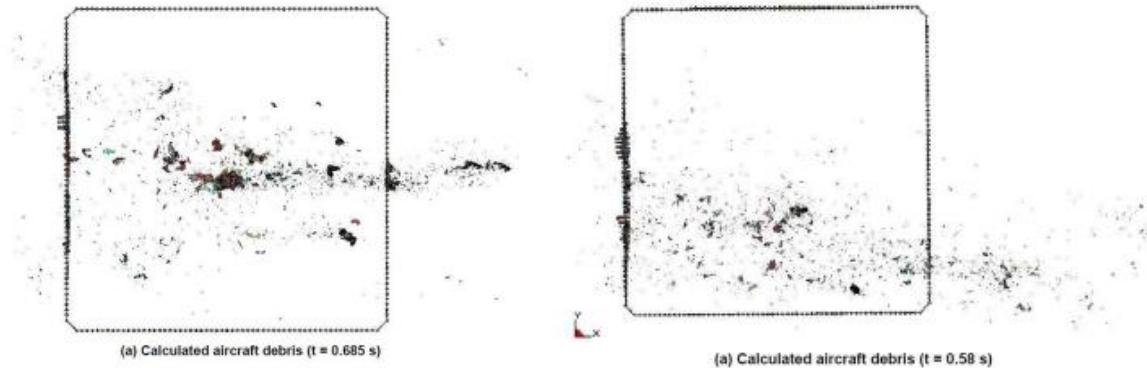
- Large portions of the planes were recovered from Ground Zero after they had exited the buildings. [11]
- At least one survivor from the South Tower, Stanley Praisnath, testified that he saw large portions of the aircraft inside the building:

*The plane impacts. I try to get up and then I realize that I'm covered up to my shoulder in debris. And when I'm digging through under all this rubble, I can see the bottom wing starting to burn, and that wing is wedged 20 feet in my office doorway. [12]*

- Purdue University's own simulation of Flight 11's impact into the North Tower (which was described by the University as "[having] a realism never seen before") showed the aircraft being shredded into large chunks, rather than the much smaller debris suggested by NIST. [13]



Purdue WTC 1 Impact Simulation (<https://youtu.be/NOKJ4ZXgK4Q>)

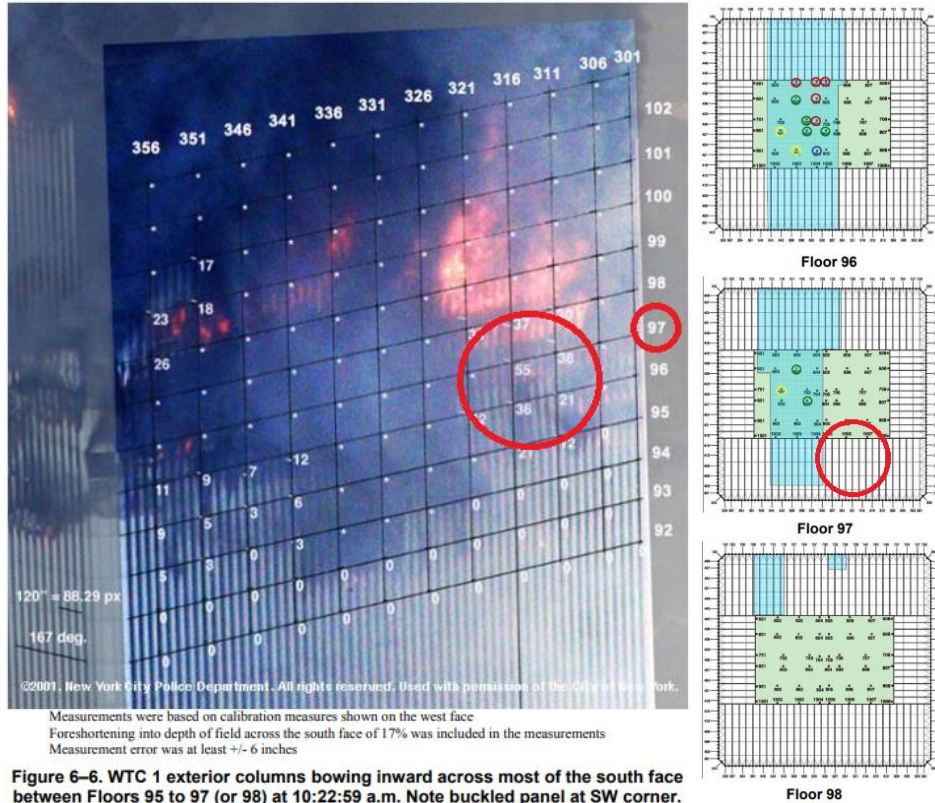


Images from NIST NCSTAR 1-2, pages 271 (left; WTC1) and 283 (right; WTC2)

Each of these points strongly suggests that the debris did not behave in the manner implied by NIST.

### 3. There was no fireproofing loss in the area of collapse initiation in the first place.

According to NIST, the inward bowing of the Towers' perimeter columns initiated the collapse of the structures. This bowing was supposed to have been caused by the heat from the fires weakening the steel trusses, causing them to sag downwards and pull on the columns. However, we can see from NIST's own estimates that the major inward bowing occurred in the area of the North Tower where evidently no fireproofing was dislodged. According to NIST, the maximum inward bowing occurred at floor 97 on the building's southeast face. [14] But according to their simulated estimates for fireproofing loss, there evidently was no fireproofing loss in this part of the building. [15]



Images from NIST NCSTAR 1-6, pages 161 (left) and 139 (right). Note: Blue areas indicate dislodged fireproofing. Red circles added by the author.

This point becomes all the more problematic for NIST when we consider the fact that the physical tests they conducted on a 35ft span floor area (incidentally, coated in less fireproofing than the actual steel assemblies in the Towers) produced only 3 inches of sagging after only an hour of heating. [16] When adjusted for scale, this would have been less than half the amount of sagging NIST claims the floor trusses in the Towers underwent. [17] (Keep in mind that according to NIST, it took 50 to 60 minutes for the fires in the North Tower to even reach the side of the building where the collapse is supposed to have started. [18]) That the inward bowing of the Towers' columns occurred is not disputed, since this is visible in numerous videos taken before the collapse happened. But if, as we have established, the fires could not have produced this effect, it strongly implies something else other than the fires was the cause. [19]

It is for these reasons that NIST's fireproofing loss scenario for the WTC buildings cannot possibly be correct. The fireproofing in the Towers could not have been widely dislodged given the lack of necessary energy, lack of a necessary mechanism, and estimates made by NIST that contradict their own conclusions. And if NIST's report is wrong on this point, it calls into question the validity of their entire report. Thus, a new investigation into the collapse of the Towers is surely needed.

\*This is an updated version of "Why NIST's WTC Fireproofing Dislodgment and Collapse Scenario Cannot be Correct," V. 2, available at <https://citizenfor911truth.files.wordpress.com/2015/02/nistfireproofwtccollapse2.pdf>.

## Notes

- [1] NIST NCSTAR 1, at [https://www.nist.gov/publications/federal-building-and-fire-safety-investigation-world-trade-center-disaster-final-report?pub\\_id=909017](https://www.nist.gov/publications/federal-building-and-fire-safety-investigation-world-trade-center-disaster-final-report?pub_id=909017).
- [2] The literature detailing the flaws in the NIST WTC report is vast. However, the very best critiques of the report are as follows: Jim Hoffman, "Building a Better Mirage: NIST's 3-Year \$20,000,000 Cover-Up of the Crime of the Century," *9/11Research*, 8 December 2005 at <http://911research.wtc7.net/essays/nist/index.html>; Eric Douglas, "The NIST WTC Investigation--How Real Was The Simulation?," *Journal of 9/11 Studies*, December 2006 at <http://www.journalof911studies.com/volume/200612/NIST-WTC-Investigation.pdf>; Jim Hoffman, "Review of 'A New Standard For Deception: The NIST WTC Report' A Presentation by Kevin Ryan," 15 October 2006 at [http://911research.wtc7.net/reviews/kevin\\_ryan/newstandard.html](http://911research.wtc7.net/reviews/kevin_ryan/newstandard.html); Anonymous and F. Legge, "Falsifiability and the NIST WTC Report: A Study in Theoretical Adequacy," *Journal of 9/11 Studies*, March 2010 at <http://www.journalof911studies.com/volume/2010/Falsifiability.pdf>; Andrea Dreger, "How NIST Avoided a Real Analysis of the Physical Evidence of WTC Steel," *AE911Truth*, 23 August 2011 at [http://www1.ae911truth.org/en/f\\_aqs/547-how-nist-avoided-a-real-analysis-of-the-physical-evidence-of-wtc-steel-.html](http://www1.ae911truth.org/en/f_aqs/547-how-nist-avoided-a-real-analysis-of-the-physical-evidence-of-wtc-steel-.html) (full length version available at [http://www1.ae911truth.org/documents/How\\_NIST\\_Avoided\\_a\\_Real\\_Analysis\\_of\\_the\\_Physical\\_Evidence\\_of\\_WTC\\_Steel.pdf](http://www1.ae911truth.org/documents/How_NIST_Avoided_a_Real_Analysis_of_the_Physical_Evidence_of_WTC_Steel.pdf)).
- [3] NIST NCSTAR 1, p. xxxviii.
- [4] Bob McIlvaine, Bill Doyle, Steven Jones, Kevin Ryan, Richard Gage, Scholars for 9/11 Truth and Justice, "9/11 Family Members and Scholars: Request for Correction Submitted to NIST," *Journal of 9/11 Studies*, June 2007 at <http://www.journalof911studies.com/volume/200704/RFCtoNISTbyMcIlvaineDoyleJonesRyanGageSTJ.pdf>.
- [5] "Sept. 2007 Response to April 2007 RFC, from NIST," *Journal of 9/11 Studies*, September 2007, p. 3, at <http://www.journalof911studies.com/volume/2007/NISTResponseToRequestForCorrectionGourleyEtal2.pdf>.
- [6] E.g., <https://web.archive.org/web/20101224220749/http://www.debunking911.com/impact.htm>.
- [7] NIST NCSTAR 1-6A, Appendix C, pp. 263-74 at [https://www.nist.gov/publications/passive-fire-protection-federal-building-and-fire-safety-investigation-world-trade-0?pub\\_id=101041](https://www.nist.gov/publications/passive-fire-protection-federal-building-and-fire-safety-investigation-world-trade-0?pub_id=101041).
- [8] *Ibid.*, p. 268.
- [9] NIST NCSTAR 1-2, pp. 171-80 at [https://www.nist.gov/publications/baseline-structural-performance-and-aircraft-impact-damage-analysis-world-trade-1?pub\\_id=101012](https://www.nist.gov/publications/baseline-structural-performance-and-aircraft-impact-damage-analysis-world-trade-1?pub_id=101012).

- [10] Kevin Ryan, "What is 9/11 Truth? – The First Steps," *Journal of 9/11 Studies*, August 2006, pp. 2-3 at [http://www.journalof911studies.com/articles/Article\\_1\\_Ryan5.pdf](http://www.journalof911studies.com/articles/Article_1_Ryan5.pdf).
- [11] Photos of aircraft debris available at <http://web.archive.org/web/20130610165451/http://wtcdebris.0catch.com>.
- [12] "Accounts from the South Tower," *The New York Times*, 26 May 2002 at <http://www.nytimes.com/2002/05/26/nyregion/26STOWER.html?pagewanted=all>. There is also a recorded phone interview with Stanley Praisnath online in which he discusses seeing intact portions of the plane in the building, available at <https://youtu.be/GRwNJmQw1MY>.
- [13] "Purdue creates scientifically based animation of 9/11 attack," *Purdue News*, 12 June 2007, archived at <https://web.archive.org/web/20191001094646/https://news.uns.purdue.edu/x/2007a/070612HoffmannWTC.html>. (Video of simulation available online at <https://www.youtube.com/watch?v=NOKJ4ZXgK4Q>.) The simulation even shows debris exiting the structure in sizable portions, consistent with the large debris recovered from Ground Zero after the impacts: <http://www.cs.purdue.edu/homes/cmh/simulation/phase4/img276-0.jpg>.
- [14] NIST NCSTAR 1, Table 6-2 (p. 87). See also Figure 2-12 (p. 33).
- [15] NIST NCSTAR 1-6, Figure 5-17 (p. 139) at <https://www.nist.gov/publications/structural-fire-response-and-probable-collapse-sequence-world-trade-center-towers-0>. NIST also gives these estimates in NCSTAR 1-5G, pp. 185-89, but for some reason appears to show more dislodged fireproofing than in NCSTAR 1-6. However, it still shows no loss in the area of maximum inward bowing. See <https://www.nist.gov/publications/fire-structure-interface-and-thermal-response-world-trade-center-towers-federal-0>.
- [16] NIST NCSTAR 1-6B, Figure 6-9 (p. 105) at <https://www.nist.gov/publications/fire-resistance-tests-floor-truss-systems-federal-building-and-fire-safety-0>.
- [17] NIST claims the Tower's floor trusses sagged over 40 inches before collapse occurred. According to mechanical engineer Tony Szaboti, a 3-inch sag for a 35ft floor span would translate to roughly a 15 to 20-inch sag for a 60ft span, the floor length of those in the Tower. See <http://www.internationalskeptics.com/forums/showpost.php?p=3294459&postcount=133>.
- [18] NIST NCSTAR 1-6, pp. 322, 338.
- [19] For alternate explanations as to what could have caused this effect, see Jim Hoffman, "A Hypothetical Blasting Scenario," *911Research*, 9 April 2009 at [https://911research.wtc7.net/essays/thermite/blasting\\_scenario.html](https://911research.wtc7.net/essays/thermite/blasting_scenario.html); and Tony Szaboti, "The Sustainability of the Controlled Demolition Hypothesis for the Destruction of the Twin Towers," *Journal of 9/11 Studies*, 17 February 2008, pp. 5-6 at <http://www.journalof911studies.com/volume/200704/SzabotiSustainabilityofControlledDemolitionHypothesisForDestructionofTwinTowers.pdf>.