

9/11 – Proof of Explosive Demolition without Calculations

Frank Legge (Ph D)
Logical Systems Consulting
Perth, Western Australia.
flegge@inet.net.au

Version 3, 29 Mar 2008, with added references to steel temperatures.

Abstract

There are several reasons why a large proportion of the public is resistant to looking at the scientific evidence that explosives were used in the demolition of three buildings at the World Trade Centre on the 11th of Sept 2001. The reason for some is that they do not trust their own calculations, or find calculations tedious, and instead rely on a trusted authority. The purpose of this paper is to provide an argument that explosives were used which does not require any calculation. The hope is that readers will be curious to see how this can be done and will read on and discover, perhaps with some surprise, that they are able to rely on their own judgment. The argument is based on material readily available for all to study, namely videos and photographs.

The manner of collapse of the buildings at the World Trade Centre (WTC), which came down on the 11th of September 2001, has been discussed many times. Those who dispute the official explanation for the collapses frequently base their case on the fact that all three buildings, the twin towers (WTC 1 and WTC 2) and building 7 (WTC 7), came down too fast to be explainable by fire and impact damage alone. This is used as evidence that the support structures were somehow rapidly destroyed, and calculations are provided to show that the rate of collapse was indeed too fast, close to free fall. The calculations are usually followed by discussion about the appearance of the collapse, in particular its verticality, as a means of providing support to the calculations.¹

The intention of this paper is to totally avoid calculations and to provide a proof of explosives based only on the appearance of the collapse of WTC 7.² This building came down about seven hours after the Twin Towers. The fact that it collapsed without having been hit by a plane briefly raised doubt about what had caused the collapse of the towers but this doubt was quickly forgotten in the media barrage supporting the official fire theory.

Many people are unaware that a third building came down that day as videos have rarely been shown, even though the collapse was, on the face of it, virtually inexplicable, and should therefore have generated substantial media attention.

Official reports raise doubts

The report of the Federal Emergency Management Agency (FEMA), concludes that fire, and some damage from falling debris from the north tower, brought down WTC 7. Contained within the body of the report, however, we find the statement that this conclusion has only a low probability of being correct.³ This was an extraordinary revelation but again there was a failure of the media to provide coverage. One wonders whether journalists bother to read more than the conclusions of reports!

Appendix C of the FEMA report describes a steel beam that had been found in the debris which had undergone sulphidation.⁴ The metal had been thinned to the extent that holes appeared. Depending on the proportion of elemental sulphur available this would have required a temperature between the eutectic temperature, about 1000° C, and the melting point of steel, about 1500° C, far hotter than can be achieved in a fire of office materials and diesel fuel. This is an astounding piece of evidence, appearing to contradict the official story, yet again it attracted little attention from the media although it came from an official report. No reasonable explanation was offered for the presence of substantial amounts of elemental sulphur in the steelwork of the building.

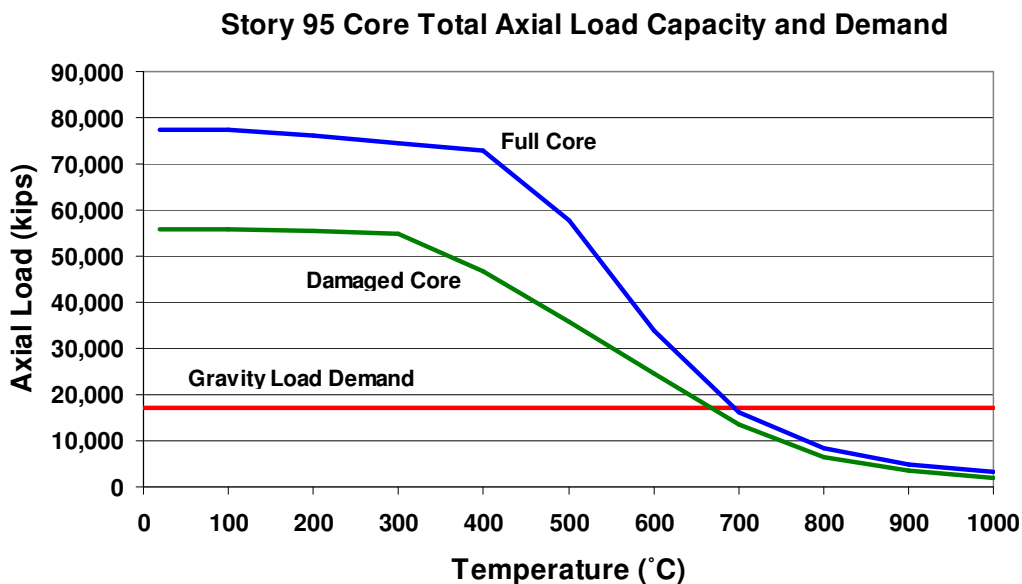
The National Institute of Standards and Technology (NIST) was given the task of properly explaining the collapse but has so far not succeeded. Apparently unable to work out how the collapse occurred it has let a tender to a private firm to come up with an explanation.⁵ Over six years have elapsed since the collapse and there is still no solution! Let us see if we can do better.

Temperature study

Buildings are designed with substantial safety margins to carry a load and to withstand severe wind forces. Without occupants, and on a day of little wind, the entire safety margin is available to compensate for impact damage and weakening due to fire. The steel columns which provide support are interconnected such that a group of columns would have to lose well over half their strength before being at risk of collapse. Apparently such temperatures are very difficult to achieve due to fire, if not impossible, as there have been numerous examples of steel-framed buildings burning fiercely for many hours over multiple storeys without general collapse occurring.⁶

As far as I am aware there has been no report of a total rapid collapse of a steel-framed high-rise building due to fire, though one can be sure that proponents of the fire-collapse theory have searched diligently. Certainly there have been fires which caused damage and some partial collapse. Such partial collapse, however, is spread over hours, not minutes, and certainly not seconds, as occurred three times on 9/11.

The following graph, taken from the paper *An Engineering Perspective of the Collapse of WTC-I* by A Irfanoglu and C M Hoffmann,⁷ shows the temperature at which the North Tower would have been at risk, according to their calculations. Without impact damage the temperature required for collapse is about 700 °C and, with impact damage, about 670 °C. A similar temperature would be required for the collapse of any building constructed under the obligatory building codes. Even at 600 °C the steel would be glowing red, as charts show,⁸ and when we consider that fire does not heat an area uniformly there must be parts of any building collapsing due to fire that are clearly red hot.



In this connection it is informative to read the inspection report on the Meridian Plaza fire.⁹ This fire burnt fiercely for 19 hours, gutting eight storeys, and was allowed to burn itself out. As the building remained standing it could be inspected and evidence was found that the

highest temperatures had occurred near the windows, where air had been plentiful, after the windows failed. It is reasonable to believe that in any burning building temperatures will be cooler near the core, and also that in any building where the windows do not break temperatures cannot be high.

Photographs enable estimation of the temperature of the WTC buildings at the time of collapse. In the case of WTC 7 we are somewhat handicapped in analysis of the fires as most of the photographs in public hands are of the north face. These show only small fires, ranging no higher than floor 12 (see photos below). Steel is a reasonably good conductor and drains heat away from a local source, so there would have to be intense fires on several contiguous floors before the columns could reach high temperatures.

A frame from a video of the north face taken at about 3:00 pm is shown below.¹⁰ This shows that a considerable proportion of floors 11 and 12 had been damaged by fire, as indicated by broken windows, and a trace of fire is still visible on these floors. By half an hour before the collapse the fire on floor 12 had burned out, according to the NIST progress report.¹¹ There is damage also on floors 5, 6, 7 and 8. The video shows that in this region fire is still present only on floor 7. The fire is much smaller than the portion damaged, which indicates that the fire on that floor is running out of fuel. The floors above and below the burning floor have clearly already run out of fuel. The columns on this face, having survived the period when the fire was at its peak, could not now give way as steel regains strength as it cools.



We cannot properly see the south side hence there are two possibilities to consider: either there was little fire in the whole building (case A) or there was substantial fire, but it was confined to the south side (case B).

Case A

In this simple case, with little fire in the whole of the building, there would be no possibility of temperatures rising throughout. It is therefore obvious that, in this case, explosives would be necessary to cause the building to fall.

Case B

The official conclusion was that the building was brought down by fire so we must consider the more complex case in which a substantial fire was present but was sufficiently far from the north face as to be not detectable through the windows. The first problem we encounter is that this fire would have to be more intense and destructive than has ever occurred in a steel-framed building and particularly surprising because it would have to produce rapid collapse without significantly heating a large proportion of the building, the entire north face.

Fire was certainly present. How much of the smoke we see was coming from WTC 7 (photos below) we do not know, as other buildings to the south were burning and the remains of the towers were still smouldering. As already discussed small fires can be seen in the photograph on the left, taken in the mid-afternoon, but in the whole area above floor 12 where the view is clear there appear to be no broken windows.

The photograph on the right was taken later, just prior to the collapse.¹² Again we see no sign of broken windows in the upper region. The lower region shows no flames but is somewhat obscured by smoke. We know, however, from the video that this portion of the north wall is cooling and cannot now give way.



Below are two frames captured from a video of the collapse of WTC 7.¹³ In the one on the left we see that the eastern penthouse has already disappeared. The roofline has sagged a little which indicates that the collapse has just started. There are now a few broken windows clustered under the area which has sagged, indicating that the wall in that region is already becoming distorted.



The frame on the right, which was captured half a second later, shows more windows breaking, indicating further distortion of the wall. The fact that we can now easily identify breaking windows confirms that the previous assertion was correct that there were no broken windows throughout the visible area just prior to the collapse. This in turn confirms that there had been no general hot fire on this side of the building.

Implication of vertical collapse

We are considering here the case in which the south side of the building may be experiencing intense fire but the north side is not. If the steel ever got hot enough to become too weak to carry the load it obviously must happen first on the south side. The only effect that this could have initially would be to cause the building to lean toward the south. The centre of gravity would then move in that direction which would increase the load on the weaker, heated supports while reducing the load on the stronger, colder supports. The north side supports, having survived a higher load, could not now give way so the lean can only accelerate and the building must inevitably topple over. This was not observed: the video shows that the building came straight down with extraordinary precision.¹³

For the building to come straight down the north supports must have exactly the same strength as the south supports at the moment the collapse commences, and throughout its whole duration. As the south supports are hot enough to cause immediate catastrophic collapse, according to the official theory, while the north supports have experienced little heat and in any case are now cooling, they cannot be of equal strength. Something has to happen to make the north and south supports simultaneously acquire equal strength, or more aptly, equal weakness.

Look again at the video. You will see no hint of a lean, no sign of the slow start you would expect if the columns were gradually softening as they were heated.¹³ You simply see the type of motion you would expect if there had been a sudden and virtually complete loss of support: the building just falls straight down. No plausible explanation for this other than the use of

explosives in a controlled demolition has been presented, and none comes to mind. This is true regardless of whether Case A or Case B occurred.

Further evidence for explosives, requiring no calculation, can be found in other places. For example an explosion in WTC 7 appears to have happened during the morning, long before collapse.¹⁴ As there is evidence that demolition cannot be guaranteed if collapse is initiated only at the bottom of a building¹⁵ it is of interest that dust appears high up in WTC 7, and some floors near the top show compression very early.¹³ These observations indicate that explosives have been placed in these regions as well as at the bottom, as in a conventional demolition.

Conclusion

As no reports have come to light of any steel framed buildings collapsing due to fire, and as all steel framed buildings which had collapsed had done so due to explosive demolition, the logical way to have started the investigation of this surprising event would have been to question whether explosives had been used. This apparently did not occur. The organizations carrying out the investigations clearly selectively collected data and contrived arguments to support the fire theory and ignored contradictory evidence. This is in defiance of the scientific method and flouts the ethical standard of behaviour which the public is entitled to receive from their paid servants.

In the case of WTC 7 the use of explosives is not merely the most logical explanation for the collapse, it is also the most obvious when once examined: the collapse looks exactly like a controlled demolition in every respect. The duplicity of the three official investigations in avoiding consideration of explosives indicates that a cover-up is in place. This view is reinforced by the rapid and secretive removal of crime scene evidence and persistent withholding of information. The existence of a cover-up is prima facie evidence for the complicity of some part of the administration of the USA in the criminal events of 9/11.¹⁶ It is reasonable to believe that 9/11 was orchestrated to manipulate the public into supporting their pre-existing goal: invasion of Afghanistan.¹⁷

Postscript

The case for attacking Afghanistan was based on the fact that it harboured al Qaeda. The claim was that al Qaeda alone attacked America on 9/11. Presented here is evidence that this claim was false and that the invasion of Afghanistan was based on a lie, just as is now known to be the case with Iraq. The avoidable deaths in Iraq since the invasion are now estimated to be over a million and, in Afghanistan, twice that.¹⁸

Given the recent belligerent tone of the US administration toward Iran it is urgent that the knowledge of complicity be spread widely and rapidly in the hope that politicians will be forced to find the means to bring the present aggression to a close and also to prevent further attacks.¹⁹ Even if it cannot be immediately legally proved that the US was involved in the events of 9/11 the consequences of accepting the official explanation, if it is wrong, are so grave that the precautionary principle should be applied: current military involvement should be wound back and further military adventures should be placed on hold while waiting for the outcome of an independent investigation.

End notes and references

1. An example of such a paper is: <http://journalof911studies.com/volume/200611/911-Acceleration-Study-Proves-Explosive-Demolition.pdf>. Relevant parts of this paper have been lifted into the current paper. The fact that the downward acceleration of the roof of this building is constant right from the start is proof, by itself, of explosive demolition. This is not referred to in the current paper however as, unlike the verticality of collapse,

it cannot be determined with sufficient certainty by eye so calculation is required, and the purpose of this paper is to achieve proof without calculation.

2. A more complete analysis of the events of 9/11, including additional evidence of explosive demolition, and covering other buildings, can be obtained from the peer reviewed papers in the Journal of 9/11 Studies: <http://journalof911studies.com/>
3. FEMA report, section 5.7: http://www.fema.gov/pdf/library/fema403_ch5.pdf
4. FEMA report, Appendix C: http://www.fema.gov/pdf/library/fema403_apc.pdf
5. NIST let a contract to ARA to determine how fire caused the collapse of WTC 7. It is curious that their study is restricted to floors from 8 to 46. This building collapsed from the bottom up, as in a conventional controlled demolition, so it is clear that collapse began below floor 8. This contract will therefore fail to produce an intelligible result and must be seen merely as a device to stall for time:
http://wtc.nist.gov/solicitations/wtc_awardQ0186.htm
6. Examples of fires: <http://911research.wtc7.net/wtc/analysis/compare/fires.html>
7. Purdue simulation study:
http://www.cs.purdue.edu/homes/cmh/distribution/PapersChron/WTC_I_Engineering_Perspective.pdf
8. Colour chart: <http://hypertextbook.com/physics/waves/color/>
9. One Meridian Plaza report:
<http://911research.wtc7.net/cache/wtc/analysis/compare/meridian.htm>
10. Video of WTC 7 fires, north side:
<http://video.google.ca/videoplay?docid=3859529288033431294%20>
11. NIST Progress Report, Appendix L, p26:
http://wtc.nist.gov/progress_report_june04/appendixl.pdf
12. The photo, upper right, is from the FEMA report, chapter 5. That it is late in the day can be deduced from the direction of the sun. Below is a video frame taken from almost the same position after the collapse started.



It can be seen that the shadow on the foreground building is at almost the same angle as in the one taken before the collapse. These images can therefore be no more than a few minutes apart; no time for a sudden engulfing fire to develop and heat the steel. Note also that in this video frame, about 3 seconds into the collapse, most of the upper floors are maintaining their original spacing, indicating that the majority of the collapse is occurring at the bottom. A huge dust cloud is already welling up from below, further indicating that collapse was initiated at the bottom, exactly as is done in a conventional controlled demolition. There is however some compression in the top floors. This,

together with the streams of dust emanating from various regions, indicates that explosives are being set off elsewhere, as also occurs in conventional demolitions. Given that there was no evidence of fire whatsoever on the north face of the building near the top the compression seen there is, by itself, compelling evidence for explosives.

13. The video may be accessed directly with the following link:
http://www.911research.com/wtc/evidence/videos/docs/wtc7_collapse2.mpg
This video and many others can be found at 911 Research, a very substantial source of easily accessible and reliable information:
<http://911research.wtc7.net/wtc/evidence/videos/index.html>
There is also a silent version at U-Tube:
<http://www.youtube.com/watch?v=qjAoEZgMgyk>
To make a study of the motion, software is required which enables looking at the video, frame by frame. Use Frameshots, which can be downloaded free, or something similar. A suitable file to study can be downloaded here: <http://9-11.meetup.com/332/files/>
Select the file named WTC7_high_res.
14. Video of early explosion: <http://www.crono911.net/docs/WTC7Explosion.pdf>
<http://www.youtube.com/watch?v=CcRs1fv8i3I>
15. Bottom-only collapse fails: <http://youtube.com/watch?v=Z1vzg1IAIvM>.
16. Actions imply complicity of some part of the US administration:
http://journalof911studies.com/articles/Journal_3_Complicity_inferences21.pdf
17. Invasion of Afghanistan was in accordance with the plans of the PNAC group:
<http://www.informationclearinghouse.info/article3249.htm>
18. Avoidable deaths, Iraq: <http://mwcnews.net/content/view/12904/42/>
Afghanistan: <http://open.newmatilda.com/crosswire/?p=77>
19. Iran in danger of attack: <http://www.antiwar.com/roberts/?articleid=10411>
<http://www.alternet.org/audits/60005/?page=2>