

9/11 – Acceleration Study Proves Explosive Demolition

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

Version 2.0

Abstract

The topic of the downward acceleration of the buildings at the World Trade Centre has been frequently discussed. The discussion is usually brief and combined with other lines of evidence for explosive demolition and its significance is thereby obscured. Acceleration is an important topic because it is based on evidence readily available to all, namely videos, and also because the calculations involved are not complex and can easily be verified by the reader. The conclusion reached that explosives were used in the demolition of these buildings is therefore not only compelling but readily accessible.

On the 11th of September 2001 the twin towers of the World Trade Centre (WTC) were hit by aircraft and collapsed with tragic loss of life shortly afterwards. Videos of these collapses have been shown repeatedly on television. About seven hours later building 7 of the WTC also collapsed. This caused astonishment as it had not been hit by a plane. Despite the intriguing nature of this event videos of this collapse have rarely been shown and most of the population is unaware that a third building fell that day. This paper will deal only with that building.¹

There was little evidence of fire and it seems reasonable to assume that if firefighters had been permitted to work in the building the fires would have been extinguished. No loss of life occurred with WTC 7 as it had been evacuated long before the collapse. This arouses suspicion that someone in charge was aware that it was to be demolished and motivates investigation.



Small fires can be seen in the photograph on the left, taken in the mid-afternoon. In the whole area where the view is clear there are no broken windows. The photograph on the right was taken later, just prior to the collapse.² Again we see no sign of broken windows. This is of particular interest as a hot fire will break glass. The white cloud is probably rising from the rubble of the twin towers, known to be smoking, located just to the south of WTC 7, but the possibility that fires on the south face of the building are contributing to it must be examined.

Below are two frames captured from a video of the collapse of WTC 7. In the one on the left we see that the eastern penthouse has disappeared and the roofline has sagged. This 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, at least on this side of the building. The video goes on to show that further window breakages become evident and then become obscured due to dust emerging from the damaged regions. The fact that dust emerges so high up in a building in which the collapse zone is low down is also grounds for suspicion.

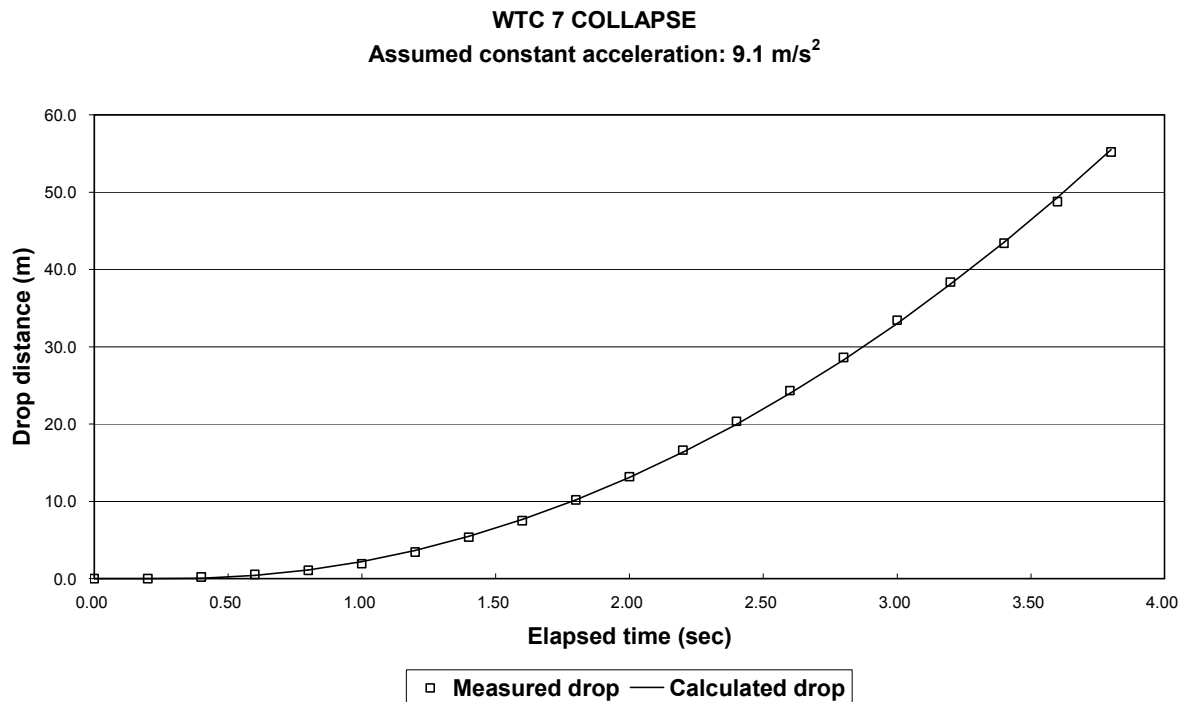
The remains of the penthouse, visible in the left frame, are seen to completely disappear during this half second. This is a remarkably rapid disappearance for something which, according to the official reports, is collapsing due only to fire and has no weight above it. That it is collapsing due to explosives appears to be confirmed by the appearance of a brilliant white flash in another video which starts a little earlier.³ That video shows that the eastern penthouse collapses first, largely obscured by dust. The flash is then seen, followed by the collapse of the western penthouse, progressing from the eastern end from the point where the flash occurred.

It is also worth noting that the behaviour of the dust cloud after the collapse was unusual. It rolled rapidly away hugging the ground, suggesting that it was denser, and thus more propelled by gravity, than is normally observed in controlled demolitions.⁴ This is clearly reminiscent of the energetic dust clouds rolling from the twin towers, though the effect is not as pronounced. One suspects that more explosive than usual was employed in all three buildings to guarantee that the collapse would be well controlled and thus would exhibit no hesitation or tendency to lean. The extra explosive would pulverize more of the concrete than usual and so produce a denser dust cloud than seen in commercial demolitions.

Conclusions based on the measured total fall time have been criticized on the grounds that the finish of the collapse cannot be timed accurately as it is hidden by dust. In this paper only the initial acceleration is studied hence this criticism is completely avoided. As we know the height of WTC 7, and also know the number of storeys, we can work out the height projecting above the building in the foreground and can measure the early portion of the collapse.⁵

The video on which this paper is based can be viewed at the 911 Research site.⁶ The sag of the roof line can be seen to deepen and widen and spread toward the sides of the building. There is

initially negligible motion of the corner nearest the viewer but from the moment it starts to move the collapse of this corner is uniform and close to vertical free fall as shown in the graph below.



The observed acceleration, 9.1 m/s^2 , if maintained, would bring the roof to the ground in 6.2 seconds, very close to free fall in a vacuum, 6.0 seconds. There is no sign of the slow start that would be expected if collapse was caused by the gradual softening of the steel.

The graph above fits the data points closely. The line is drawn with an equation which assumes constant acceleration.⁷ That means that the net downward force was constant. As gravity is constant this implies that the upward force provided by the structure was also constant. It is inconceivable that fires could heat the structural supports so uniformly throughout the height of the building that the collapse would encounter uniform vertical resistance. Fires by their very nature tend to creep from place to place as they run out of fuel and move to fresh sources, leaving the burnt out area to cool down. Steel regains strength as it cools.

There is also the question of uniformity across the length and breadth of the building. Again we encounter the problem that fires are not normally uniform. Only if the entire flammable contents of the building had been ignited simultaneously would there have been a chance of obtaining the required uniform weakening of the steel. This clearly did not occur.

It is argued in the official reports⁸ that the fires were severe but we have seen from the video and photographs that there was not much fire on the near side. That means that if there had been a severe fire it must have been mainly on the far side and would thus have been supplying a source of heat which was anything but uniform. This would ensure that the supports on the far side would soften first, which would cause the building to lean away. The centre of gravity would move in that direction which would increase the load on the weaker supports while reducing the load on the stronger supports. Having survived a higher load the near supports could not now buckle so the building would inevitably topple over. This was not observed: the video shows that the building came straight down with extraordinary precision.

The speed of fall, the uniformity of acceleration and the verticality of collapse are not consistent with the effects of fire but are fully consistent with the hypothesis that the building

supports were rapidly and completely severed. No plausible explanation for this other than the use of explosives in a controlled demolition has been presented.

The falsity of the three official investigations in denying the use of explosives, given that explosive demolition is so obvious, is prima facie evidence for complicity of some part of the administration of the USA in the events of 9/11 and cries out for review.

End notes and references

1. 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/>

2. This photo is from the FEMA report, chapter 5. That it is late in the day can be deduced from the direction of the sun and the fact that the street lights are on. Below is a photo taken from almost the same position after the collapse had 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. This was close to equinox, at which time shadow angles move 15 degrees per hour. These photos can be no more than a few minutes apart; no time for a severe engulfing fire to occur.



3. 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>

The video may also be accessed directly with the following link.

http://www.911research.com/wtc/evidence/videos/docs/wtc_7_cbs.mpg

4. The frame below shows the dust running rather like a liquid along the “valley” between the buildings indicating that, for dust, it is unusually dense. The high density is also indicated by the speed of flow seen in the video



5. WTC 7 was 174m high and had 47 storeys. Study of photographs and diagrams in the FEMA report shows that there was additional height in floors near the ground, in the middle and at the top. This additional height was equivalent to about 1.7 storeys, thus the height of a standard storey was 3.67m.

Some investigators claim that the buildings came down faster than free fall. Whether honest error or straw man, this claim is clearly refuted here.

6. The video may be accessed directly with the following link.
http://www.911research.com/wtc/evidence/videos/docs/wtc7_collapse2.mpg
7. The equation used to calculate the expected drop distance with time is the standard

$$s = \frac{1}{2} at^2$$

where s is the distance, a is the acceleration and t is the time. The fitting of the equation to the data was done using a least squares method. This gave a value of 9.063m/s^2 , which has been shown to two significant figures in the text and graph.

8. The FEMA report, which concludes that fire brought down WTC 7, contains the statement hidden in the body of the report that this conclusion has only a low probability of being correct and that further investigation is required. Despite this the subsequent NIST report makes no comment about WTC 7.

The conclusion of the NIST report was that fire brought down the North and South towers but their own data within the report shows that this was impossible. This report states that little steel was found which had experienced temperatures higher than 250°C and none that had exceeded 650°C . Even at 650°C the steel would be twice as strong as required to hold up the building.