

Reply to “Rebuttal to ‘Large Plane Impact Damage to the Wall of the Pentagon and Adjacent Objects’ ”

By David Chandler and Wayne Coste

The authors would like to thank Xander Arena for commenting on our initial paper which he refers to as “LPI.” We would also like to thank the International Center for 9/11 Justice for developing this “Debated Topics Forum” to facilitate genuine scholarly debate to advance our understanding of the 9/11 crimes.

Because of space limitations we may not address every detail raised in the Arena’s rebuttal in this joint reply. Also, figure numbers referring back to the original Chandler-Coste paper will be preceded by a “LPI” while figure numbers referring to figures in Arena’s rebuttal will be preceded by an “XA” designation.

We begin by acknowledging that Arena’s criticism of Figure LPI-5 in our original paper is valid. He points out that some of the damage that we included from our original 2019 analysis which we thought was due to the plane impact was, in fact, due to the façade collapse. This was pointed out to us in 2020 and we agreed with the criticism at the time. We believe it is the sole significant error¹ that has been identified in our 17-chapter video lecture “Explanation of the Evidence at the Pentagon on 9/11².” Inadvertently, the associated image was not updated in our LPI paper. Figure 1 and 2 show replacement images that correct and explain this error.

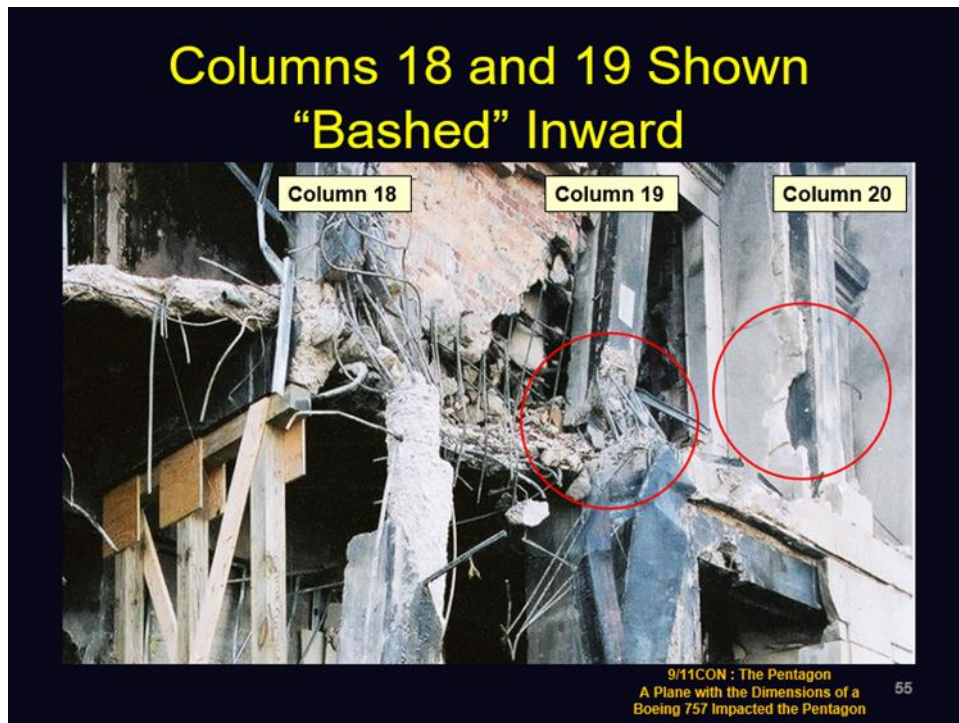


Figure 1: The outer part of the right wing of the plane impacted Columns 18 at the floor slab and angled upward to the right impacting Columns 19, and 20.

Upon reviewing the comment we received in 2020, it was clear that the collapse of the façade, rather than the dynamics of the plane impact, caused Column 18 to be pried to the right. However, the image in Figure 1 is still significant for understanding the geometry of the impacting plane’s right wing. The resistance from the mass of the floor slab itself, hit edge on, is what protected Column 18 from being mechanically snapped like Column 19. Figure 1 shows that Column 19 is bashed inward about 18” above the second-floor slab, and the impacted limestone on Column 20 is damaged approximately 36” above the second-floor slab. This would place the point of impact of the right-wing at the intersection of Column 18 and the second-floor slab. We therefore have a virtual imprint of the right wing of the plane as it impacted the Pentagon wall. None of the damage seen here can be attributed to explosives. This is clearly mechanical breakage, not pulverization by explosive detonations.

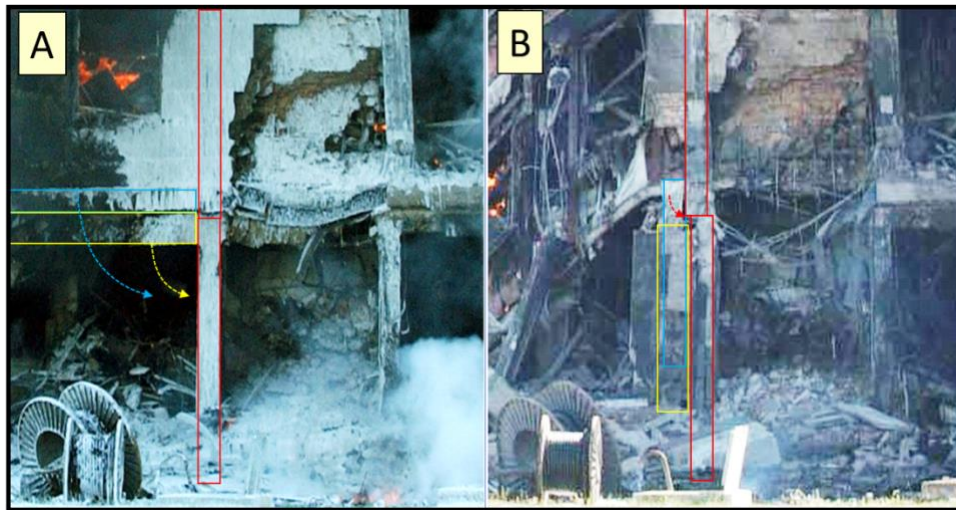


Figure 2: Pre collapse damage to Column 18 (left) and post collapse damage (right) showing that the beam (yellow) and portion of the floor slab (blue) between Columns 17 and 18 rotated down and pried Column 18 (red) to the south.

Additionally, we agree with Arena when he says, “... we should not expect the fuel-air explosion of an exploding airliner to have the impulse to bend steel-reinforced concrete columns.” Other than a significantly heated thermal plume which could singe and ignite nearby items, no significant damage can be attributed to the observed large, but low velocity, jet fuel deflagration.

The Jamie McIntyre Quote

Arena claims that “It was CNN’s Jamie McIntyre who first questioned the official narrative. On the day of 9/11, McIntyre said on live television, ‘There’s no evidence of a plane having crashed anywhere near the Pentagon.’” Unfortunately, this is a fragmentary quote that literally inverts the meaning of Jamie McIntyre’s extensive statement which was given in response to a question from Judy Woodruff:

*WOODRUFF: Jamie, Aaron was talking earlier -- or one of our correspondents was talking earlier -- I think -- actually, it was Bob Franken -- with an eyewitness who said it appeared that that Boeing 757, the American jet, American Airline jet, **landed short of the Pentagon**. Can you give us any better idea **of how much of the plane actually impacted the building?***

*MCINTYRE: You know, it might have appeared that way, but from my close-up inspection, there's no evidence of a plane having crashed anywhere **near** the Pentagon. **The only site is the actual side of the building that's crashed-in**, and as I said, the only pieces left that you can see are small enough that you can pick up in your hand. There are no large tail sections, wing sections, fuselage, nothing like that anywhere around – **which would indicate that the entire plane crashed into the side of the Pentagon** – and then caused the side to collapse.³*

So, according to Jamie McIntyre, yes there was a plane, yes it entered the building, along with all its major components, leaving only small fragments outside on the lawn. To answer Judy Woodruff’s original question; no it did not crash near the Pentagon on the lawn prior to reaching the building. Jamie McIntyre has appeared on interviews where he has reaffirmed that this was his meaning beyond any doubt.⁴

The issue of using this fragmentary quote from Jamie McIntyre has been discussed and corrected within the 9/11 Truth Movement many times including in our own series of videos, *Explanation of the Evidence at the Pentagon on 9/11*.⁵

Thierry Meyssan and the Hole Too Small

In the caption superimposed on Figure XA-10 of his rebuttal Arena says, “... He [Meyssan] never wrote or implied that the damage was limited to the space between Columns 13 and 15 on the second floor.” Arena’s claim completely misrepresents the thesis of Meyssan’s several books about the Pentagon. The only Ingersoll photo of the Pentagon wall used by Meyssan in either of his books is the one where the 100 feet of missing façade on the first floor is obscured by fire hose spray. It was from this Ingersoll photo that the view of the second-floor hole was cropped and enlarged. There is no reference to other Ingersoll photos that show large swaths of damage to the first floor (see Figures LPI-8 and LPI-9 in the LPI paper as well as Arena’s Figures XA-12, XA-13 and XA-14).

On Page 22 of *9/11 The Big Lie* Meyssan says, “The plane was stopped dead, without its wings having struck the facade. There is no visible trace of any impact except that from the Boeing’s nose.” The idea that the nose of the plane could penetrate the wall then stop dead in its tracks is preposterous, but Meyssan’s point is the hole was too small. This is a clear reference to the meme that the small second floor hole was too small for the wings to enter. In his other book, *Pentagate*, the caption to colored plate VII, says, “*The orifice by which the ‘Boeing’ entered measures about 15 to 18 feet wide.*” The caption then continues by comparing these measurements with the dimensions of a Boeing 757-200, saying, “*A Boeing 757-200 has a cabin 10.5 feet in diameter and a wingspan of 114 feet.*” No reference is made to the 100 feet of missing façade on the first floor.

In March 2022 Richard Gage hosted an all day event, “9/11CON : The Pentagon⁶” that featured four presentations of different hypotheses regarding the Pentagon event. Thierry Meyssan was one presenter, along with Coste, Chandler, Xander Arena and others. In the Q&A, Thierry Meyssan reaffirmed his assertion that all of the photography of the broad ground floor opening was from after the roof collapse, despite being shown one of Jason Ingersoll’s ground floor photographs that was clearly taken prior to the roof collapse.⁷ It should be clear to any who have followed the controversy about the Pentagon attack that the erroneous claim that the hole was ~16 ft wide, and hence too small has been a central argument, and this theme can be traced directly back to Thierry Meyssan.

Column 14 on the Second Floor

In the call-out in Figure XA-13, Arena says, “*Column 14 appears fully intact on the second floor ...*” We agree that from casual inspection of photos taken along the angle of the approach path that the first column in column row Column 14 might “appear fully intact” and vertical. However, using the same image as Meyssan, which was circled in Figure XA-10, Figure 3 shows that Column 14AA is fragmented and does not reach the second floor slab whose location is indicated by the lower yellow line (Clarification on notation: “AA” the technical identification of the first column line along the outside of the façade. Column lines are identified by a letter that increases from AA, to A to B and then on to column line O at the far side of the Pentagon’s “C” Ring). It is clear that the bottom portion of Column 14AA was destroyed. The two images in Figure 4 show that this column remnant is seen hanging by rebar from the third floor and inclined into the Pentagon in a direction consistent with the path of the incoming plane.⁸ Given the damage, not only is there room for the top of the fuselage to pass into the second floor, but such a location of the fuselage is required to account for the observations.



Figure 3: Column 14AA looks vertical when viewed from the approach angle, but is actually hanging and pushed in the direction of impact (left). The bottom of the column is fragmented (right) and clearly does not extend to the level of the second-floor slab.



Figure 4: Column 14AA on the second floor is shown hanging from the third floor and pushed in the direction of the impacting aircraft.

The Tree In Front of Column 16

Arena claims that parts of a tree trunk can be seen in both Figures XA-3 and XA-16. He identifies these parts of a tree trunk as being from the tree that had been in front of Column 16. Arena asserts that “... *the tree actually appears to have been cut into pieces with a saw, with those cuts occurring before the event.*”

The pieces of “tree trunk” he refers to appear to be overly large for the size of that tree. A more comprehensive review of the photographic record shows the object in Figure XA-3 to closely resemble a roll of corrugated metal and not a tree trunk. Several different images from different perspectives are shown in Figure 5. The object in Figure XA-16 is clearly a sheet of plywood leaning against a fence as shown in Figure 6⁹.



Figure 5: The circled object in images A, B and C are clearly corrugated metal and not part of a cut tree trunk as alluded in figure XA-3 (repeated in image D).



Figure 6: Image A (left) is from Figure XA-16 and asserts the brown object to be a cut tree-stump. Images B and C show it to be narrow and flat like plywood.

Note that the stump of the tree that had been in front of Column 16 can be seen protruding from the rubble (Figure LPI-13). It has a smaller diameter and is clearly splintered rather than cut. Therefore, based solely on size, what Arena identifies as part of the trunk could not possibly be from that stump. The height of the tree stump under the wing is shown in Figure 7 and a close-up is shown in Figure 8.

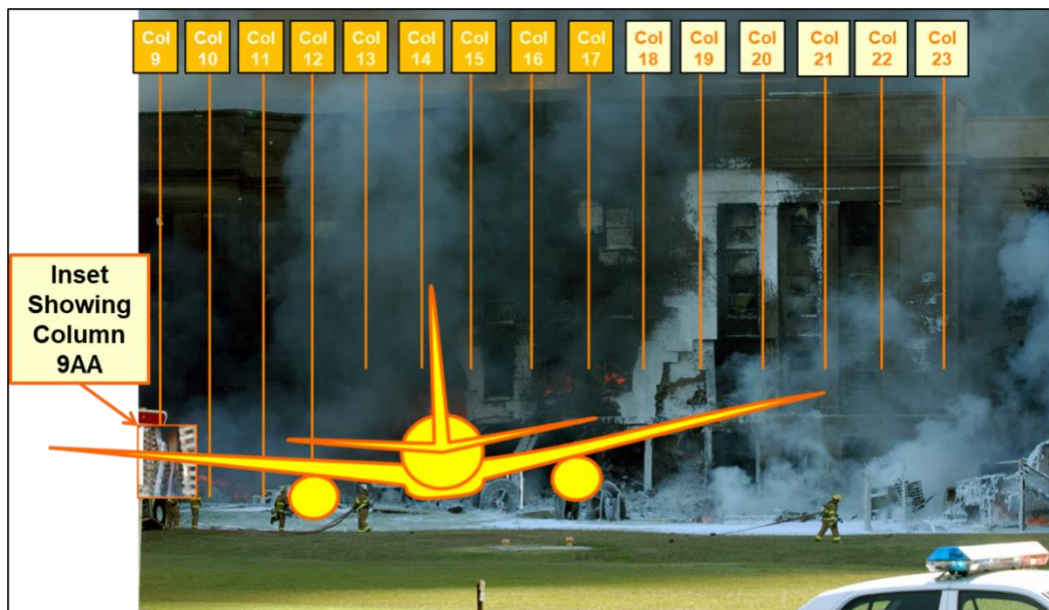


Figure 7: Approximate impact profile on to the Pentagon Facade showing left wing is under the second-floor slab.

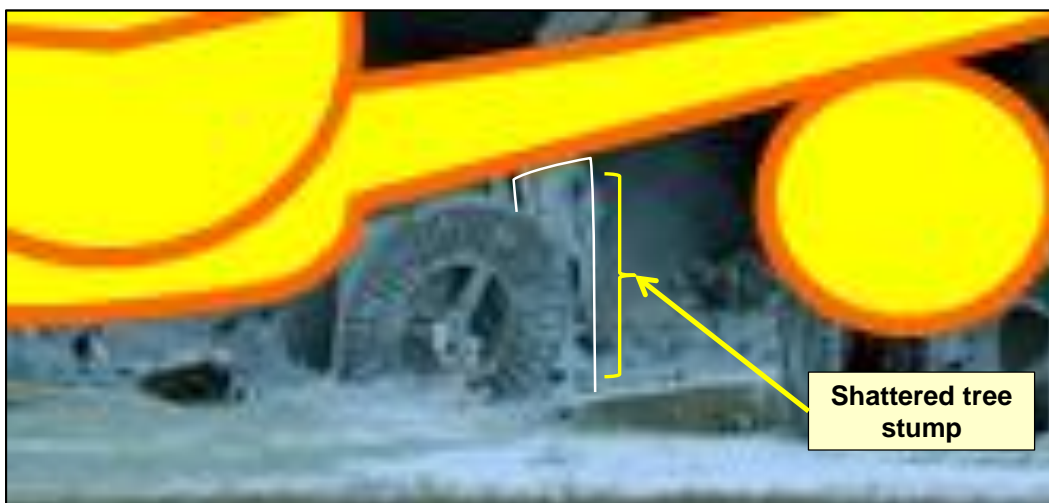


Figure 8: Detail showing height of the wing with respect to the shattered tree stump in front of Column 16. Many of the wire spools were located below the wing as shown.

Arena goes on to say, *“The argument that a 155-foot airplane traveling at many hundreds of miles per hour and weighing over 100,000 pounds would not have the impulse to move the tree into the building is implausible.”* A high-speed impact of a wing strut near the base can shear the tree from the stump and transfer some momentum to the bottom of the trunk. However once severed, no more energy can be transferred *“to move the tree into the building.”*

Furthermore, an actual tree trunk with some of its branches remaining can be seen lying along the base of the Pentagon wall to the north of the impact point, with the base of the trunk displaced the farthest. The fact that the tree traveled base-first is consistent with it being severed from an impact at its base and, because the center-of-gravity of the severed tree cannot accelerate instantaneously, the severed trunk will rotate slightly upward and above most of the plane’s structural frame. The impact mechanics show that the component of the momentum toward the building would impart a velocity to the base of the tree toward the wall, causing part of the damage seen in the 16 ft wide hole in the second floor, while the component of the momentum parallel to the wall would impart a velocity northward, dragging the upper parts of the tree behind. This mechanism is also consistent with the observation that the upper branches are engulfed in

flames in many photos of the area between Columns 5 to 10. Figure 9 shows the tree trunk during the clean-up on the afternoon of 9/11 (see Arena’s similar photo in Figure XA-6) and the burning tree branches in the Will Morris photo.

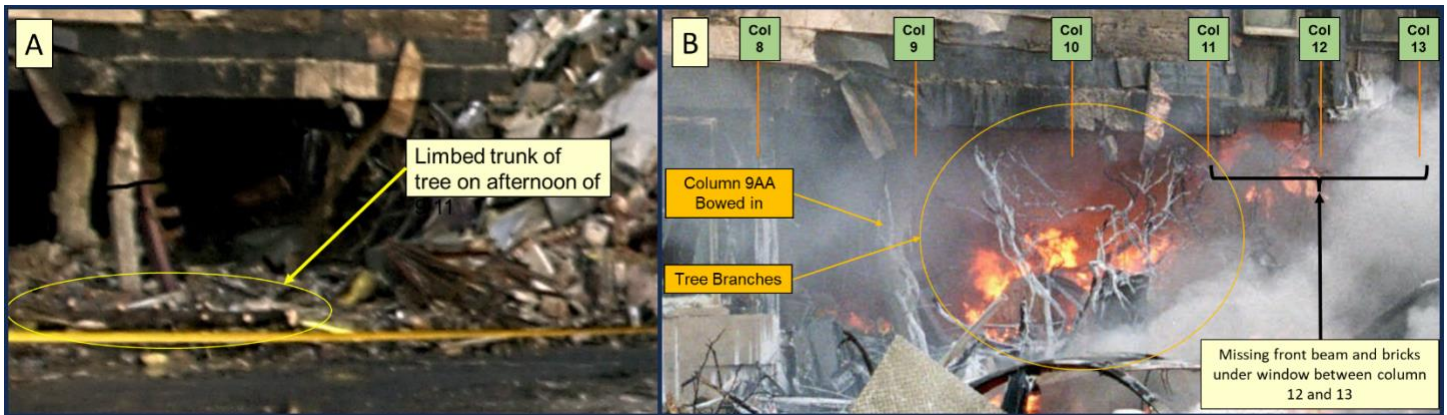


Figure 9: Cut up tree trunk on evening on 9/11 (A) and burning tree branches (B))

As shown in Figure 10, there is also a large amount of tree litter that is preferentially scattered northward across the heliport and onto the lawn which we identify as originating from this tree.

Arena’s explanation is that “[a]n explosive pressure wave could have accomplished exactly that.” How? An explosive detonation could have severed the tree, but one, or more, localized explosions could not have imparted significant momentum to accelerate most of the entire length of a tree over 100 feet. Where would such explosive devices be placed and how could it produce the observed effects? What else besides the tree would have been impacted by the hypothesized “explosive pressure wave”? Is the damage consistent with the spherical expansion pattern characteristic of an explosive detonation?



Figure 10: Tree branches and other debris north of the Heliport.

Real Aircraft Have Structural Integrity

As shown in Figure 11, Arena just continues the initial trajectory of the wingtips of the incoming plane until these lines intersect the Pentagon wall. From his analysis he asserts that the left wingtip of a plane the size of a 757 approaching at a 52° angle would cause damage all the way to Column 5 instead of the observed damage which ends at Column 8 on the first floor. Note that in Arena's image, the left wingtip is the last part of the plane to encounter the wall. Key aspects of Arena's rebuttal are based on the expectation that the right wing and fuselage would pass through the Pentagon wall as though it were passing through a cloud without resistance. In his framework, the left wing would then continue in its initial direction of motion all the way to Column 5.



Figure 11: Repeat of Figure XA-9 showing outline of unimpeded initial trajectory.

However, forces encountered by the plane early in the impact sequence are transmitted to, and affect the motion of other structurally connected parts of the plane. Whereas the right wing, which is oriented nearly parallel to the wall, “slaps” the wall between Columns 18 and 20 in a nearly simultaneous action, the left wing, which is angled well away from the wall, impacts Columns 13 through 9 sequentially, with each impact deforming the wing and slowing the plane's motion. Columns 13 to 10 are destroyed, each consuming energy from the moving plane. However, Column 9AA is bowed and stripped, but not broken, indicating a significant impact from the outer third of the left wing, but which had insufficient kinetic energy to destroy the column entirely. This sequence of events stopped the forward progress of the outer end of the left wing preventing it from proceeding to Column 5. The wing is not found on the ground at the base of Column 9AA, which indicates it was carried by momentum into the building around that column.

The adjoining twisted 8” square steel tubing, which was part of the upgraded window support system is further evidence supporting this hypothesis. The fact that the “fingers” on this length of tubing, that originally pointed outward to the lawn, are twisted counterclockwise into the building, is direct evidence that the wing of the plane imposed a very large torque on the entire steel window frame – of which the fingers were only a part. Arena asserts that the wing was not broad enough to contact all of the fingers. However, the damage shows that the wing impact rotated the heavy steel window frame to which those fingers were welded. The reason the outer parts of the wings could be dragged around corners is that in addition to the lightweight aluminum “skin” of the wings, each wing contained two extremely strong longitudinal spars. It is the strength of these spars that supports the plane in its flight, so they would remain a large connective structure through the wing.

Explosives Charges vs. High Kinetic Energy Impactor

All signs point to the damage within the Pentagon as being caused by a high kinetic energy impactor rather than any manner of explosive detonation. Explosive detonations are typically low energy materials that have high localized “power” because of their high reaction speeds and ability to create shock waves. Power is the rate of release of energy. A stick of dynamite has total energy comparable to a stick of wood of the same mass. The difference is that whereas a stick of wood might burn over many minutes, dynamite releases all its energy within a small fraction of a second. A typical explosive may shatter an object in place, but without some mechanism to concentrate the force in one direction (such as the barrel of a gun directing the rapid expansion of gunpowder to accelerate a bullet) an open explosion is poorly suited to transmit significant momentum to massive objects. The Pentagon damage contains numerous examples of kinetic impact but no clear evidence of explosive detonations. Examples of kinetic energy are the impact on the generator trailer, which gouged out a huge notch and rotated the vehicle significantly toward the building, the torn, not melted, chain link fence surrounding the generator trailer, the rounded gouge in a concrete retaining wall in line with the path of the left engine, the broken and thrown tree in front of Column 16, the bowed and broken columns at the entrance to the Pentagon and extending into the building in-line with the well-documented path that traversed approximately 250 linear feet contained within the first floor, the “slap” damage to the exterior surface of the wall to the right of Column 18, and the broken beam along the second floor slab between Columns 12 and 13, which we have shown could only have been caused by the tail section of the plane (see the missing front beam and bricks under the windows between column 12 and 13 in Figure 9B). A small portion of the second-floor slab near Column 14 was also damaged where the top of the fuselage impacted the building.

The blue columns in Figure 12 show the extent of bent and bowed columns across the impact path. A green line in the figure traverses a width of at least 60 feet from Column 13D to 7C. To claim the source of the energy was explosive detonation would require a detailed mechanism to channel the energy into the observed path of destruction hundreds of feet from the façade while constrained within a 15-foot vertical space.

Explosive detonations expend their energy in an ever expanding and dissipating pattern, radiating outward from a point source transmitted by a shock wave, producing pulverization to small fragments rather than primarily macroscopic breakage. The broad extent of macroscopic damage and scarring seen at the Pentagon site is characteristic of an impact rather than explosives. Neither Arena nor anyone else has proposed a plausible mechanism whereby explosive detonations could account for all these observations in the context of the entirety of the damage.

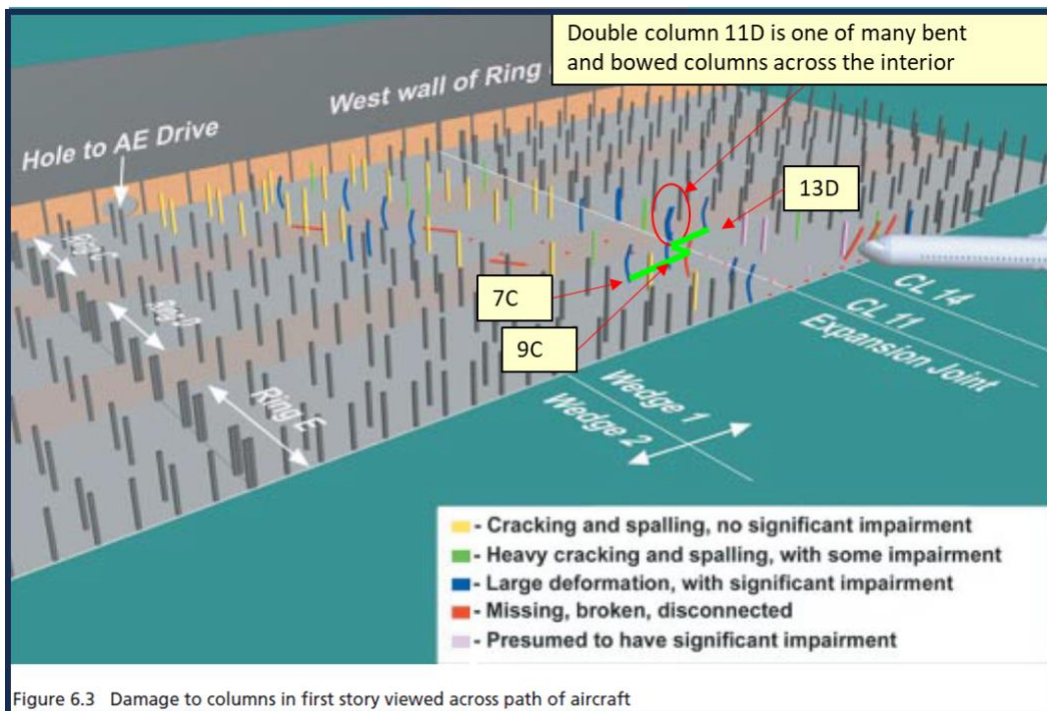


Figure 12: Damaged first floor columns, documented to have been bent-and-bowed, are shown in blue.

Arena says, “The column [9AA] could not endure a 52° incident angle impact and end up being bent to the east.” But Figure 13 shows that when viewed from about 45 degrees from the northwest, Column 9AA has a large deformation in the northeast direction. This is consistent with the northeast direction seen in Column 14AA and the other columns on the first floor.

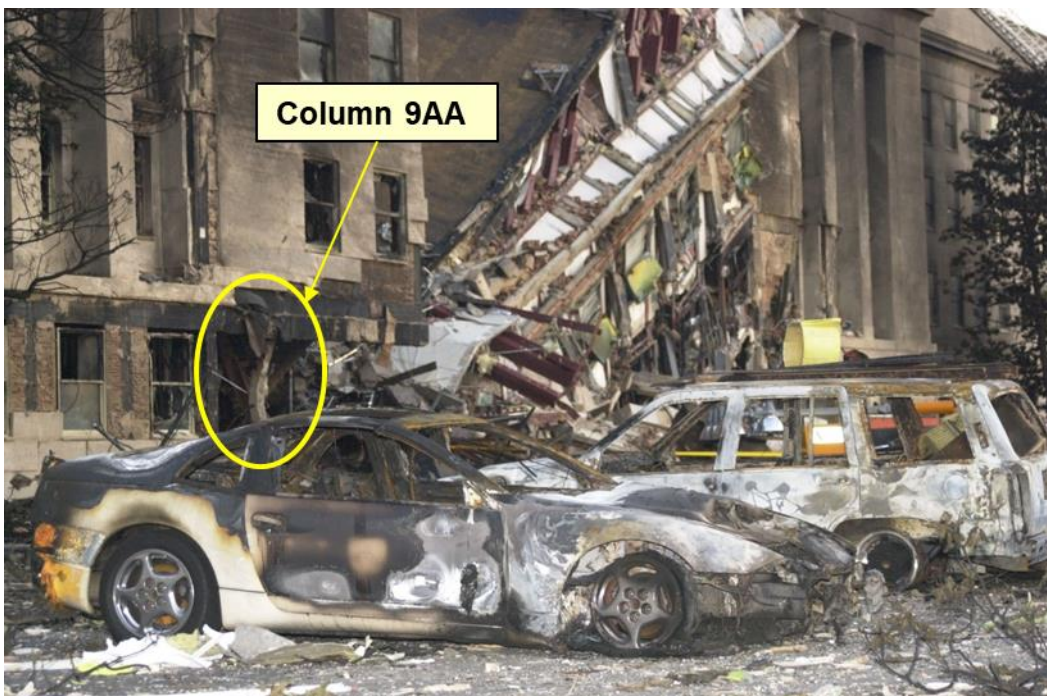


Figure 13: Column 9AA is seen from a vantage point showing the near maximum deformation.

Arena asserts that the damage done to the façade could have been done by explosive detonations when he asserts, “A missile or other kinetically delivered explosive mechanism might detonate in a manner capable of removing the exterior features it travelled through ... Yet it is equally plausible that the façade was removed explosively.”

As shown in Figure 14, internally placed or detonated explosives would blow debris outward (left image) while externally planted explosives would blow material inward (right image). Arena provided no evidence supporting either internally placed explosives, externally placed explosives or any other mechanism associated with an explosive detonation.

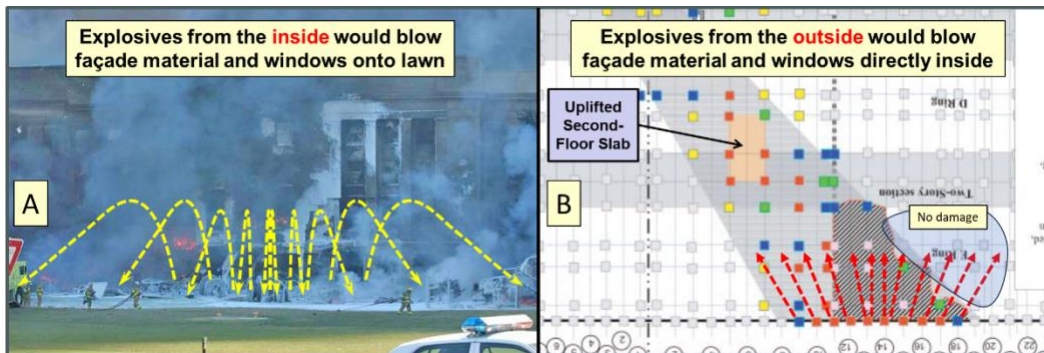


Figure 14: Internally placed explosives would blow outward (left) while externally planted explosives would blow material inward to the right and left (right) which is inconsistent with the observed damage path toward the “C-Ring Exit Hole.”

Uplifted Second Floor Slab

One area of the damage that Arena calls out as being caused by “focused ordinance” is the “uplifted second floor slab” when he asserts, “Also indicative of focused ordinance deployment is the area within the D-Ring of the Pentagon, in which the second floor was blown upward.”

This damage was the topic of a recent Debated Topics Forum paper that was written by one of the authors of this paper that identifies its source as the kinetic energy of the rapidly rotating jet engines¹⁰ which were caused to redirect their motion chaotically due to torques from multiple impacts with columns and the dynamic effects of precession. Analysis of the aircraft approach and impact provides an explanation of how the left engine entered the Pentagon, with a documented trajectory through the columns. Impacts along this path would create a tumbling and bouncing 5-ton gyroscope directly under the uplifted slab. The tenting of the slab, shown in Figure 15, reflects a mechanical snapping that would be characteristic of impact damage, not a detonation with the pulverization characteristic of “focused ordinance.” Context is important as Major David King was nearby the location of Arena’s alleged explosion and was not injured by what would have been a massive explosion.



Figure 15: Uplifted Second Floor Slab illustrating mechanical damage, not explosive detonations.

Aircraft Approach Angle

Arena asserts, based on imprecise comments from a small subset of witnesses, that the plane was banking to the left as it approached the Pentagon. There is no evidence for such banking near the Pentagon. The plane was very close to the ground where banking is nearly impossible due to ground-effect which increases uplift on a lower wing relative to the higher wing. Additionally, both security gate cameras show the plane traversing the lawn in a level orientation¹¹. Figure 16 shows a superposition of images from both security gate cameras.

The observed physical damage is consistent with a level approach.

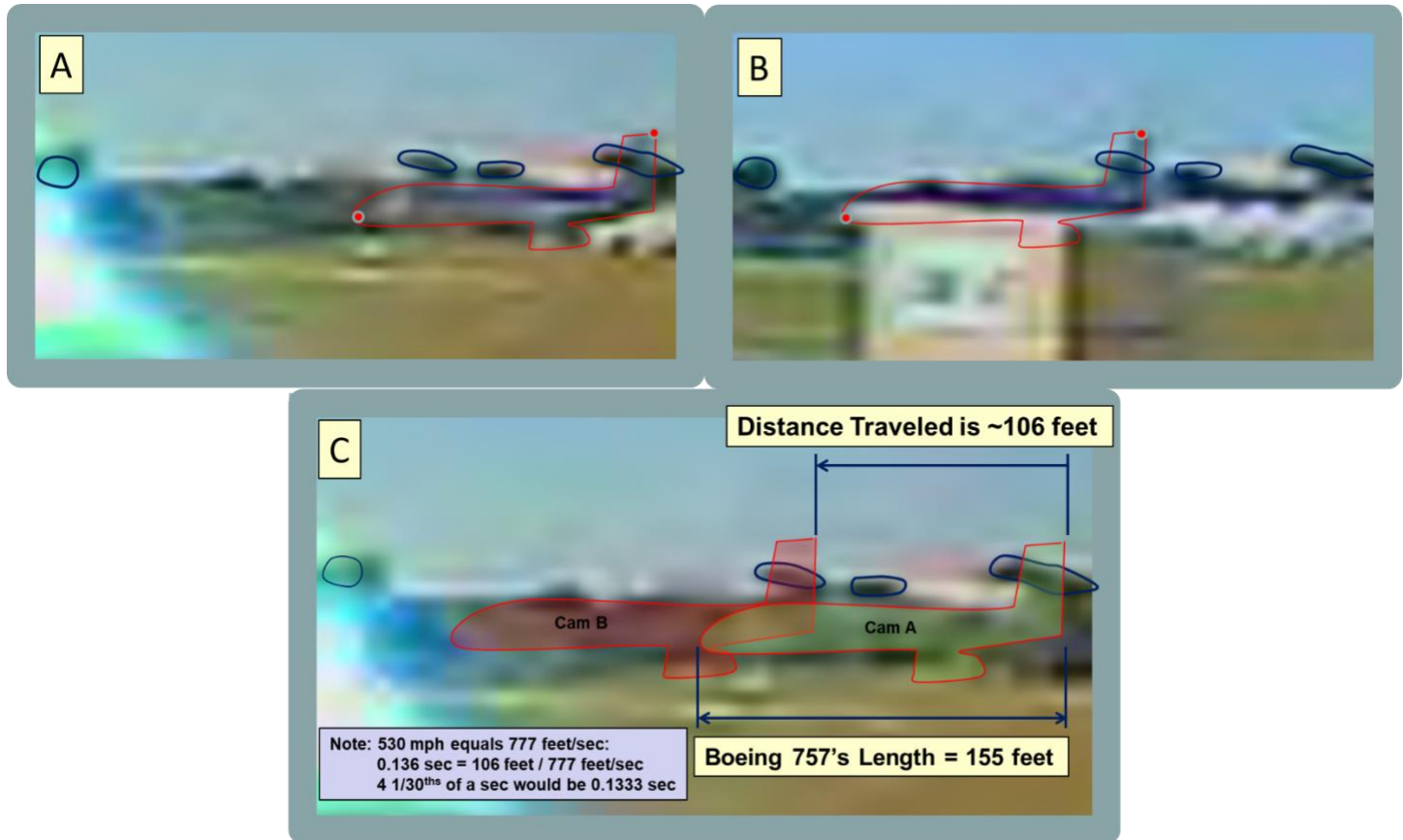


Figure 16: Both security gate camera's show a plane with the dimensional proportions of a Boeing 757 flying level to the ground. Camera A shown in top left, Camera B shown in top right and the composite in the lower image.

Generator Trailer Damage

When discussing the damage to and around the generator trailer, Arena asserts that several of the fence posts, “... clearly looks pushed directly toward the building. Figure XA-26 shows that the fence post is bent cleanly at the ground, as might happen if a truck were to drive over it ... the damage to the fence is consistent with a large ground vehicle impact, like the truck shown in Figure XA-27.”

As shown in Figure 17, Steve Riskus’s photograph¹² was taken very nearly perpendicular to the façade which minimizes perspective errors. In this image, the fence posts are shown to be pushed in the direction of the impacting aircraft. Because this image was taken before any firetrucks arrived, any conjecture that firetrucks bent the posts is unfounded.

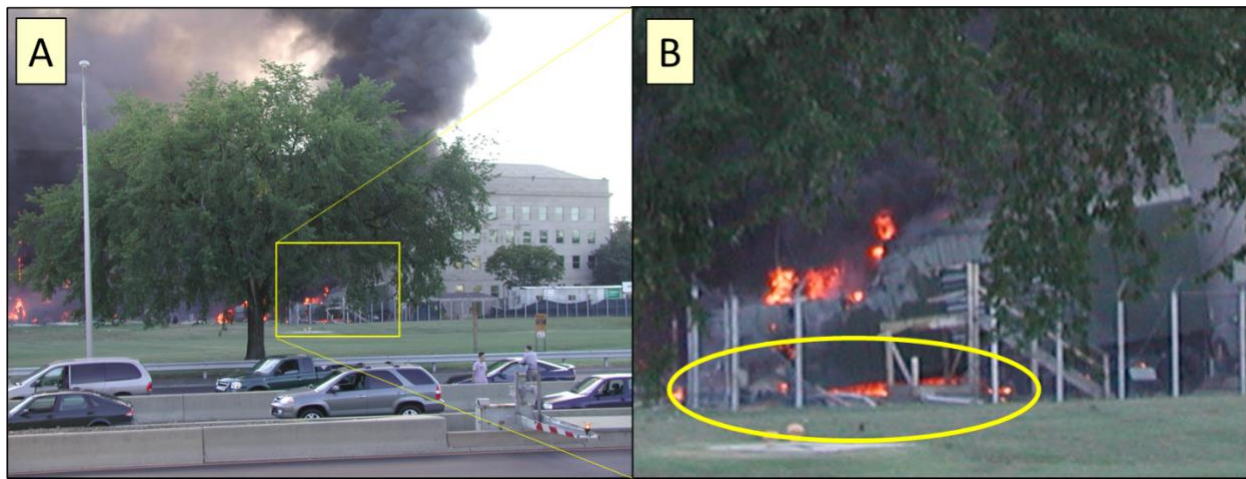


Figure 17: The Image from Steve is effectively perpendicular to the façade (left) and shows the fence posts pushed in the direction of the impacting aircraft.

Figure 18 is an annotated copy of Figure XA-24 which shows that the generator trailer cover was violently pushed and ripped in the direction of the impacting aircraft. While, as Arena says, “... interpreting such an image would be challenging,” there is a lot of information in this image that supports an impact by an object that pushed over and ripped the generator’s steel cover. This was followed by fire as shown in the Riskus photo. It is well known that fires, of the magnitude documented on 9/11, burn paint off of steel and that subsequent exposure to rain results in quick formation of a coating of rust.



Figure 18: Ripped and pushed over covering of the generator with obvious distortion in direction of impact.

Outwardly Displaced Fence Immediately North of the Impact Area

Arena notes that a substantial portion of fence north of the impact zone was not swept into the building, but rather has been displaced outward and was documented in the vicinity of several vehicles parked in front. He uses Figure XA-3 and Figure XA-4 to illustrate this phenomenon. This can be easily explained by the presence of a large, high speed trailing air mass that was following immediately behind the impacting aircraft. This is simple aircraft physics and was discussed

extensively in Chapter 12, entitled “Debris¹³”, of the Chandler-Coste lecture series. When the aircraft impacted and penetrated into the Pentagon, most of the trailing air mass could not follow and was reflected back off of the building to the northeast due to air pressure. This reflection transported lots of debris northward over and around the heliport tower. The fence being pushed outward away from the impact area is another example of the power of this reflected trailing air mass.

Gouged Retaining Wall

When discussing the gouged retaining wall, Arena says, “... the retaining wall appears broken, with fracture patterns that are incongruent with the alleged angle of approach.” Our analysis shows that the shape of the damage has an angular characteristic to it that aligns with the impact direction of the impacting aircraft. Figure 19 shows three different images with yellow dotted lines indicating a consistent path of the left engine through the retaining wall to the façade between Columns 10 and 11. Furthermore, the engine would have continued into the Pentagon at an angle consistent with its impacting Column 9B as shown in Figure 20.

In this regard, Arena posed the rhetorical question, “... was that damage caused by a 757 or by a deceptive team with a tape measure and a devious scheme?” This suggestion is a violation of “Ocam’s razor.” What we see at the Pentagon is a large body of damaged and destroyed building components that warrants a unified explanation, not a piecemeal collection of ad-hoc assumptions about what could have been faked in isolation. Only the hypothesis of a large momentum impact by an object with the dimensions of a Boeing 757, provides such a unified explanation of this crime scene.

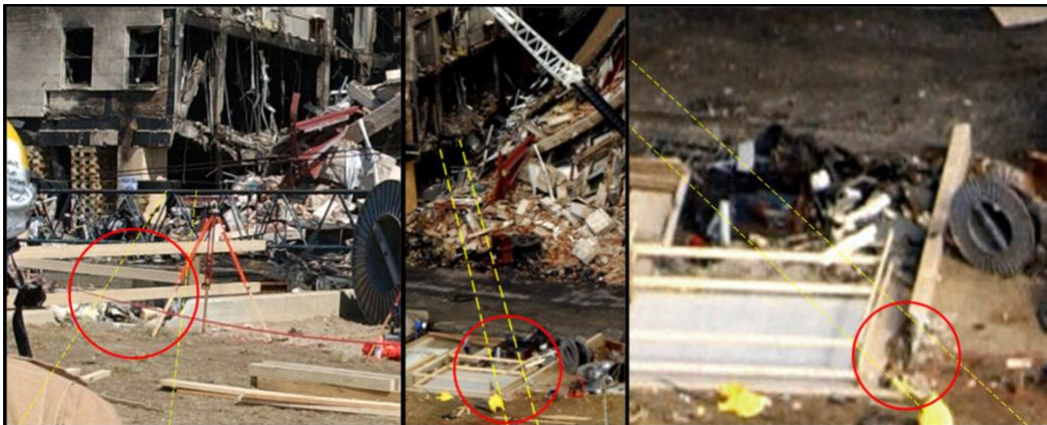


Figure 19: Path of the left engine through the gouged retaining wall.

⁹ Source, Sgt. Cedric H. Rudisill: https://commons.wikimedia.org/wiki/File:US_Navy_010914-F-8006R-003_Aerial_view_of_Pentagon_destruction.jpg

¹⁰ “Controversy About the Uplifted Second-Floor Slab at the Pentagon: Identifying a Likely Source of Upward Mechanical Impact”, <https://ic911.org/debated-topics-forum/forum/controversy-about-the-uplifted-second-floor-slab-at-the-pentagon-identifying-a-likely-source-of-upward-mechanical-impact/>, Coste, 2024

¹¹ See video <https://911speakout.org/seeing-the-pentagon-plane/>

¹² SteveRiskus_P1010017.JPG <https://web.archive.org/web/20020216234415/http://www.youthenrage.com/terror.html>

¹³ Chapter 12, Debris (including Trailing Air Mass) <https://youtu.be/amvxGqCmYkc?si=vvKAbZpe3R62s38B&t=365>