

*Transcript: Hardfire with Ronald Wieck, guests Ryan Mackey and Tony Szamboti. Recorded on 27 September, 2009. Transcribed by Ryan Mackey.*

**Ron Wieck:** Welcome to *Hardfire*. I'm Ronald Wieck, your host for part two of the three part debate on the collapses of the Twin Towers. Our guests are, from the last segment, Tony Szamboti, a mechanical engineer, here in the studio with me today, and Ryan Mackey, a NASA rocket scientist, on webcam from California. We're going to try to pick up where we left off, at the end of the first round. We were discussing the collapses, and the energy that was available to cause the global collapses described by NIST in its comprehensive report and by Zdenek Bazant in his paper. I think I want to begin with Ryan, we do want to clarify this issue of energy sinks, how much energy was available and how much was dissipated, and for what reason was the energy dissipated.

**Ryan Mackey:** Yeah, this is getting a little bit afield. In the whitepaper that I wrote discussing David Ray Griffin I worked out in one of the appendices an estimate of the total energy available. I expressed this in terms of its explosive equivalent, partly because the Truth Movement seems interested in theories involving explosives. The amount of energy available per tower was on the order of 100 tons of TNT. Now, that's just gravitational energy, that's what it took to lift it to that height. The number is that large because obviously they were very large structures, but also because they were very high. If you had the same building lying on its side the amount of gravitational potential would be much smaller. Now, from the estimated time of collapse of the Towers, we work out that maybe 40 or 50 percent of that energy was dissipated during the collapse. The rest of that energy is still available to break [things down] at the ground. This means that the lower structure resisted the equivalent energy absorption of about 40 tons of TNT. Now, immediately that should make you question these explosives theories, because if it can absorb that much, and you need to account for more energy than that, we're not talking about a small amount of explosives here. We're talking about truckloads. We're talking about B-52 loads of explosives. If you're dealing with a small amount of explosives, you're not going to have that much effect on the collapse time. So, that's where we come down on this, we need to see a really good theory as to how this was accomplished before we can believe it, because those numbers are just so incredible.

**RW:** Well Tony, let's move to you, if we're positing explosives as an explanation, how much are we talking about? How did it get in there?

**Tony Szamboti:** Well, first of all, we have to understand is, 100 percent of the gravitational potential energy is held by the building with significant reserve, the building can hold a lot more than that, there's factors of safety designed in so it doesn't crumble when you initially build it. In Ryan's whitepaper, he does a calculation and just as an example, where if the building fell at 1.7 meters per second acceleration, per second squared versus 9.8 which is that due to gravity, then you could show that 81 percent of the potential energy of the upper bock was used to destroy the building. Reality is, if only – it

sounds impressive, until you realize that 81 percent, it was holding up with – it could hold up three times 100 percent, or 300 percent.

**RM:** Wait wait, I need to correct you on a few different things. First of all, in my calculation I'm not talking about the potential energy in the upper block, I'm talking about the entire structure. Because as it breaks, you're adding mass, new things are falling, you're liberating all the energy of the entire structure, not just the upper mass. The other thing is, you're conflating energy and force. You really can't do that. The strength of the building, yes it did have some reserve, but that really doesn't say anything about the energy calculation.

**TS:** The energy to break it, Ryan, has to be greater than potential energy – not the energy, the force applied, has to be greater than the static force. It comes back to whether you have this amplified load, and whether you have an impulse or a deceleration, and you lose velocity. The upper block never loses velocity. It continually accelerates all the way through that building. Which means it's not giving up its energy to destroy the lower block.

**RM:** No, that's not true. Most of the reason the energy is being given up, again, is because of inelastic collisions. It's not the fact that the building's strength is resisting, it's the fact that the building's mass is resisting. The descending chunks of all the rubble are hitting parts and accelerating them to their speed. That's where most of the energy transfer is happening.

**TS:** There's two different things there. One is conservation of momentum, and the other one is the force amplification you need to break things apart.

**RM:** If you want to go to the slides, I can demonstrate that there is no need for force amplification.

**RW:** Before you show your slides, I want to ask both of you to address a rather simple, unsophisticated question, Ryan can go first. When the floors including and above the impact zone fail, when the perimeter columns, we see them buckling on the videos, the floor trusses give way, when this whole upper block starts to descend, it hits the floor immediately below. What happens? What happens now?

**RM:** Yeah, it's a little complicated, because again the upper block is coming down at an angle. But what's going to happen immediately is we're going to get the floors – the next lower floors are damaged, those are the first things that are going to come in contact – they're going to bend a little bit, then they're going to tear free of their moorings, which is going to release the perimeter columns to fall away. Once the collapse really starts moving, however, there isn't even time for those lower floors to flex, they're just going to get smashed right off, taking their seats with them. And we know this is true because we've analyzed the rubble, and we find that above the point of collapse, we have the perimeter seats, the floors are sitting on, failed in one way, below the zone of impact where the upper block is hitting it, they're all bent, they're all smashed off, they're all damaged. So, we have evidence for this [hypothesis].

**RW:** Tony, same question, Anders Borkman thinks that – Bjorkman – thinks that this upper block hits the floor beneath it, and it delivers a gentle kiss, and somehow friction causes everything to grind to a halt, and the top floors just float in midair –

**TS:** He actually believes there should be an impulse and a jolt also.

**RW:** But, he is, he's stating something that is mad. In other words, indefensible.

**TS:** He goes -- well, I don't know if it's totally indefensible, I'm not going to go along with the two mile high drop, of course not, but what he says in general, he says that any time there's a collision you're going to have deceleration, the impacting object has to decelerate in order to get an amplified load, and

–

**RW:** He talks about two ships colliding.

**TS:** Well, ship collisions, he's involved in shipbuilding.

**RW:** But there's no gravity involved.

**TS:** That's true, but there's propulsion. Whatever's driving it, gravity is different, in the sense that gravity is driving the descending block, if you will, what he tries to say is that, and I said this earlier, I just said on the last show, he says that the upper block would be destroyed itself as it's destroying the lower block. And by the time, if it's twelve stories high, by the time it got through twelve or fifteen stories, maybe 20 to 30 stories of the lower block, it itself would be reduced to rubble. The rubble does not have the [import], it does not participate, it's not a solid object. It comes back to the loose two by fours, or loose sand, hitting the building. It can take many hits from a lesser force, it can't take one large hit. It's sort of like, if I have something that will fail at ten pounds, like a beam if I put ten pounds on it. If I put a lot of one pound items on it at different times, it can take those loads. If I put 20 pounds on at once, it's going to fail.

**RW:** Ryan, we have to stop at this point, we really have to clarify this. If this upper block is damaged, reduced to rubble, what does that have to do with its capability for destroying the rest of the structure?

**RM:** It makes very little difference.

**RW:** Okay.

**RM:** And the reason is, that again, Tony in the past has run a calculation on what those floors could handle. Once you accept that the mass was rubblized, there's no way it's going to be resting on the columns, it will fall away from them. Those floors could only handle about 29 million pounds, that's it. They couldn't possibly –

**TS:** Well, wait, that's the actual concrete slab, that's just the slab we're talking about. The columns can handle a lot more than 29 million pounds.

**RM:** If you're dealing with rubble it's not going to land on the columns. It's going to land on the floors.

**TS:** Well, yeah, but how do you collapse the core columns?

**RM:** I'm not quite done. The amount of rubble we're talking about is much more than 29 million pounds. It's up to about 68 million pounds. There's nothing that's going to stop it.

**TS:** That's the floors. How do you tear out the core columns? And how about, what I'm basically –

**RW:** What holds the core columns up once the floors have disappeared?

**TS:** The core columns don't need the floors to hold them up.

**RM:** You're assuming the upper block stays intact, you're assuming the upper block comes in contact with the lower block column on column. These are not acceptable assumptions.

**TS:** Well, none of these things, Ryan, are what NIST said. NIST tries to say, that, you know –

**RM:** I thought you said NIST didn't treat the collapse.

**TS:** NIST doesn't, no, they just depend on Bazant.

**RM:** NIST doesn't say anything of the kind. NIST doesn't agree with you or me. They don't treat it. They only looking up to initiation.

**TS:** Right.

**RM:** Dr. Bazant does say that, but he also says that it's the limiting case. It's the most favorable scenario to resist collapse. We aren't dealing with the most favorable scenario, we're dealing with the real scenario.

**TS:** No, I'm not, the reality is that the core columns collapsed, and there is no deceleration of this building. We measured through nine floors, and it just continues, and you're trying to say that everything misses and goes on the floors, and I don't believe that. And the video evidence does not show a tilt right away, it shows a tilt after a three or four story drop.

**RM:** I'll give you the floor for a minute. It might help if you clarified exactly what you think did happen. I'll be quiet –

**TS:** Yeah, I hear you, I think that there was strength removed from the columns, at least on the first several floors, and this thing started to move, it would sort of be like if I had a hundred pound plate here and I put thirty columns under it that can each take ten pounds of force. The upper block of the North Tower moved, accelerating at 70 percent of the rate of gravity. Now what this hundred pound plate, with thirty ten pound columns, you can see it has a factor of safety of three times, it can handle three hundred pounds.

**RW:** But didn't the plane break some of those columns?

**TS:** Not at the floor where initiation started. The 98<sup>th</sup> floor had almost no damage. None.

**RM:** Tony, in the past, you've said that you believe there were explosives set off all the way up and down the towers at every three floors –

**TS:** Well, let's deal with the first three floors, Ryan, and we can get into something here. I say I believe it could happen either way. But I believe certainly the first several floors had to be, something had to be removing the strength of those columns, in order for there not to be any deceleration of that upper block. And let me just make this example, for people who aren't real familiar. If I have this hundred pound plate, with the 30 columns under it that can take ten pounds apiece, and I take away 27 of them and there's three left, that hundred pound plate is going to fall through those three ten pound columns at 70 percent the rate of gravity. It's only going to experience a 30 percent, resistance of 30 percent of the rate of gravity. That's sort of what happened with the Towers, it's like 90 percent of the strength of the columns was just removed.

**RM:** Let me read you back a quote. You once said, "What I believe if somebody were to do this, or to plant a demolition, starting at the aircraft impact, you would have to start demolishing stories below and above simultaneously. Looks like you can see it more clearly in the North Tower collapse, the North Tower, the upper stories, the upper block almost telescopes into the bottom section. It's being demolished itself." Do you still believe this?

**TS:** Well, I believe there was something going on at the initiation of those collapses. I certainly do, and I don't believe –

**RM:** Wait a minute. You just said that, if you're going to break up the upper block, you have less of an impact on the lower structure. So wouldn't exploding the upper block be counter-productive to the collapse?

**TS:** Well yeah, I think the video shows that the upper block actually does break up, at least in the first few stories. What I'm saying needs, I'm saying that the upper block, in order to make it occur, would have to impact. I'm saying it didn't impact it, it fell through it as though only ten percent of the column strength was there. And what really happened is the upper block started disintegrating the first three to five stories before the lower block even started to fall.

**RM:** Why would they do that?

**TS:** I don't know, Ryan, you'd have to ask them!

**RW:** See, this is what troubles a lot of people. Now, I've spoken to a number of demolition experts, I've called several companies, we're going to scroll across the screen a shortened list of the companies that I've phoned. A full list appeared on one of the shows we did with Arthur Scheuermann, a retired battalion chief of the FDNY. My problem is this: Everyone who works in demolition says that these theories of explosives in the World Trade Center are nonsense, I mean they're impossible. They reflect no understanding whatever of the realities of demolition.

**TS:** They don't tell you what the realities are, do they, they just give you an assertion, give me the details then.

**RW:** Stacy Loizeaux explained to me over the course of an hour how you go about setting charges to bring down a normal sized building. She points out no one has ever attempted to bring down a building the size of the World Trade Center, no one's ever attempted to bring down a –

**TS:** Well, what if they did do it?

**RW:** They would certainly bring it down from the bottom!

**TS:** Not necessarily, I can break, if I have, I can break this table at that corner or this corner, that corner or this corner, I can do it anywhere.

**RW:** You would plant charges on the exact floors that a commercial airliner is going to crash into? How would you know –

**TS:** If you heard me, the actual collapse initiation sites were just above where the major impact damage was.

**RW:** But the fires would destroy the explosives.

**TS:** Not necessarily, you could –

**RW:** Well, you keep saying "not necessarily,"

**TS:** No!

**RW:** Demolition experts say that they would.

**TS:** Well, first of all – they do, OK. You're telling me that it's absolutely impossible to armor –

**RW:** No, I'm not a demolition expert, I'm asking you why –

**TS:** OK, did they say you couldn't possibly protect these charges from fire? Did they tell you that?

**RW:** They said the notion of putting the amount of charges necessary to do what you claim into a building like this is absurd.

**TS:** Well, that's incredulity. Why do they say that?

**RW:** It's a logistical impossibility.

**TS:** It is?

**RW:** Because you would have to strip the walls, you would have to expose the columns, you would have to strip –

**TS:** So why is that impossible?

**RW:** Because there are thousands of people working in the building.

**TS:** Are they all in there all night long?

**RW:** Oh, come, come now –

**TS:** What if, what people are in control of security? Couldn't do that? You can't see any way that it could happen?

**RW:** Well, we already learned, Marvin Bush had nothing to do with the security of the World Trade Center.

**TS:** I didn't say Marvin Bush, it doesn't have to be Marvin Bush.

**RW:** You would need, according to Stacy Loizeaux, teams of 75 to 100 men working for months to prep the World Trade Center.

**TS:** Really? I'd need to see the details of that, because I see a lot of lower numbers, but that doesn't matter!

**RW:** But that's my point. Tony, I don't wish to be unkind here, but this is a theory that you're promoting, and you've never picked up a phone to call ANY demolition company.

**TS:** I've talked to some of these people, and –

**RW:** Well, what are the possibilities, are they all in on it?

**TS:** It's all just incredulous that this could happen. That's not proof of anything.

**RW:** But demolition experts are saying this is nonsense, this is –

**TS:** And now you're appealing to authority, doesn't give you any details either, Ron.

**RM:** I'm having real trouble hearing, you guys are talking over each other.

**RW:** OK, Ryan, you might want to weigh in on this, I'm making –

**RM:** Let me try to calm it down a little bit, let me ask Tony a real simple thought experiment. Suppose that I work for a demolition company and I'm going to blow up a World Trade Center, perfectly legal, they're going to let me do it. So let's say that I'm going to plant my charges at the initiation point that we all saw. But it's definitely a controlled demolition in this imaginary scenario. I'm going to plant my charges at Floor 98, blow the core first, the perimeter, whatever. Would you expect to not see a jolt in that situation that I described?

**TS:** No. In that situation, if you just planted charges and you didn't plant charges further down, I would expect to see a jolt if you did it on one floor and you're using gravity right away.

**RM:** But then why would I plant charges lower down, I can do the job by putting everything –

**TS:** Well no, not necessarily if you want reliability, and you do overkill.

**RM:** Reliability is a factor of “do my charges go off or not.” If I want reliability, I double the charges on 98 –

**TS:** Uh-uh, not necessarily, if you don’t have the right amount of mass, it goes back I did think of an answer to your other question. When you asked, why would they get rid of the first three floors of the upper block, they are trying to develop momentum of some sort, I believe. That’s why the case of Building Seven fell eight stories unimpeded, pretty much. Everybody knows that it actually fell for a hundred feet at free fall acceleration.

**RW:** Will we get back to the absence of any audio evidence of explosives?

**TS:** Well, that is a problem, I’m not arguing that, but those – there’s postulation and other ways that things can be done.

**RW:** I mean we’ve got – we have tons of explosives to get the upper block moving, and yet they produce no sound.

**TS:** The French *verinage* technique, where they use jacks, hydraulic jacks to blow the columns, doesn’t produce any sounds either.

**RM:** Guys, before we lose my point. The point is, if I was a demolitioneer, if I was going to blow up those towers, there would be a jolt. I have to do something exceptional, something crazy to prevent a jolt.

**TS:** Not necessarily, you can prevent a jolt if you keep blowing the floors.

**RM:** Why would I blow up the entire structure top to bottom simultaneously? Why would I do that? That’s not the way it’s done.

**TS:** You can do it – are you saying it can’t be done, the way you see it done?

**RW:** Tony, I’m having trouble understanding you. Are you saying there were explosions going off all the way down?

**TS:** I think, for the first eight to nine stories that the column strength is being removed somehow. I didn’t say explosives, I just told you that the *verinage* technique, they use jacks to break the columns. There’s a number of ways you could remove the strength of the columns, weaken joints, I don’t know how that was done. I’m not saying, it had to be explosives, I’m saying the column strength was removed, certainly for the nine stories that we measured. 90 percent of the column strength for the nine stories we measured the fall of this upper block. It’s experiencing very little resistance coming down.

**RW:** Ryan, my understanding of the *verinage* technique is that they use cables in sort of a crisscross fashion, is this feasible?

**TS:** There’s a variety of ways.

**RM:** They can do it with cables, they can do it with hydraulics, there's a number of ways you can do it. But we're talking about extremely large apparatus.

**RW:** How could you do this in a building where thousands of people work? Wouldn't someone notice?

**TS:** I don't think that's a good argument, because there's some of the floors of the World Trade Center were closed down for reconfiguration –

**RW:** But we can find out what was on the floors that you're alleging this happened – you really think hydraulics?

**TS:** Things could be done at night, there's a lot of things – How many people in those buildings at night? I don't think there was many, was there?

**RW:** Well – there are people in the building, there are people –

**TS:** Well, if someone was in on it from security, would they be able to do that?

**RW:** So the next day, when the people go to work on the 98<sup>th</sup> floor, they don't notice this equipment, in place to ..?

**TS:** Well, you have a drop ceiling, and things like that, you don't notice what's up and under the ceiling.

**RW:** Again, the problem here is that you're just making things up.

**TS:** No, no, I'm postulating just like detectives do, when they see something that doesn't look right, they have to investigate – this doesn't look right, we don't have anything that really explains it, and there was motives –

**RW:** But this is the problem. Demolition professionals say that it absolutely does not resemble a controlled demolition, and you're saying –

**TS:** Do they say that about Building Seven?

**RW:** Yes. Absolutely.

**TS:** They do?

**RW:** Yes.

**TS:** Does everybody, I don't know if all of your viewers have seen –

**RW:** The only person who says anything to the – Danny Jowenko is the only person who has said anything to the contrary. And Danny Jowenko has never demolished a large building.

**TS:** Right.

**RW:** Ryan, am I off base here, or should we take into consideration the professional expertise of people who work in the demolition industry?

**RM:** Well, you certainly can't just hand-wave it away. I mean, I'm not a demolitioneer, I haven't talked –

**TS:** But it is appeal to authority, Ryan, you have to agree with that.

**RW:** But it's appeal to a legitimate authority, I mean –

**RM:** I'll go along with that but –

**TS:** No, not without details, though, and there are, Danny Jowenko disagrees, and this means it is appeal to authority because there is dissention among those particular experts. As soon as that happens –

**RM:** I agree with you, I think we should go into detail, but that's the detail that I'm looking for from you guys. I need to understand first –

**TS:** Well, you're getting some of it, you probably need more, and –

**RW:** You've read Brent Blanchard's PROTEC paper?

**TS:** Yeah, I don't agree with him. And I don't remember all the details, I've read the paper. I don't agree with much of what he says, and he's not a demolition expert himself. He writes for a magazine.

**RW:** He is employed by demolition companies to record demolition.

**TS:** PROTEC – To write about it, and report about it, he doesn't have the expertise to do it. Basically what his argument is, "well, we didn't find any demolition charges in the rubble." Well, if I was a criminal going to do something like that, in a covert way which is the only way it could be done, because, I would be putting something in there to eliminate the strength of the columns, that was not –

**RW:** What?

**TS:** I just gave, I did give you a couple ways it could be done.

**RM:** I heard hydraulics and cables –

**TS:** Hydraulics, heating the joints, Ryan, Dr. Astaneh saw melting, he said, like Salvador Dali paintings, that was like smooth like that at the joint ends of columns and beams.

**RM:** Heating the beams by, possibly, setting the building on fire, that kind of thing?

**TS:** I didn't quite hear that, setting what, setting the building on fire? It was already on fire.

**RM:** I mean, we know the columns were heated –

**TS:** No, no, the problem is there, that we're going to get into another area. NIST doesn't have any evidence of high temperatures.

**RM:** What do you propose, Tony? What do you think happened?

**TS:** What do I propose? The reason they didn't save the steel, most of it, they only saved less than half a percent –

**RM:** You're getting off track because you're taking us there. Tell me what you think.

**TS:** Well, we're talking about this whole issue, Ryan. We don't have an agenda here exactly, I think –

**RW:** Well, we do want to talk about the physics, but on the other hand, if you're talking about explosives but we leave demolition professionals out of the equation entirely –

**TS:** I wouldn't leave them out, I want to hear details from them. More than just, that's ridiculous. I don't want to hear just a "that's ridiculous."

**RW:** Well, Stacy Loizeaux has commented at length on this.

**TS:** What, that it would take a lot of people? That's not a good argument for it. I think it's a terrible argument.

**RW:** She's argued that you simply, the logistics would be daunting to the point of impossibility.

**TS:** She has to show that in detail. I don't see that level of detail coming from her, or other people.

**RW:** Again, you're saying "level of detail," people who work in the industry are saying, "here's how we do our job, and here's why it wouldn't be possible to do it in this instance."

**TS:** Well, no, I'm just hearing you can't. That's all I'm hearing. I don't' hear any detail.

**RW:** Why aren't you curious to talk to them?

**TS:** I would like to talk to them. I would like to talk to them. But I think, and I haven't had the opportunity to talk to some of these people. I would like to talk to them.

**RW:** Ryan, you were getting back to physics, to science, one of the most recent canards floating around the conspiracy universe is this notion of a substance called "superthermite," or "nanothermite." Tell us about this, and can it do the magical things that its proponents allege?

**RM:** Well, this is part of the reason I keep asking Tony what he thinks happened. It isn't entirely clear what the Truth Movement believes nanothermite did. It isn't even clear that they know whether or not they've decided it's an explosive. Recently Drs. Jones and Niels Harrit have backed away from that actually, they've said that they believe the nanothermite was only an ignition system for conventional explosives. Which then raises the question, Why. We've been setting off explosives for hundreds of years. Why would you need this rare, easily traceable substance that no one has ever seen before, why

wouldn't you use normal stuff? But if you go back to the letter that Tony signed, which was feedback to NIST on the World Trade Center Seven report, in that letter they claim that nanothermite is not being used as an explosive. They claim that it's merely a heating agent. So until I understand better what the Truth Movement thinks it can do and what they think it was doing there I really can't comment.

T: Well, you can't, you know, the criminal investigation if you find something that shouldn't be there, that doesn't discount it –

RM: Well first of all –

TS: You have to investigate why it was there, it certainly something that shouldn't be in the dust, nanothermite.

RW: But they didn't find nanothermite.

TS: They said, they have said, they have said in their paper that they found nanothermite.

RM: But this is false.

TS: And a lot of people like Ryan are saying that it's paint, and I looked at this, I understand, you know, could people be tricked into looking at that, however there's several things that I can't discount that easily, and that there's elemental aluminum in these red and grey chips that they found –

RW: Aluminum cladding.

TS: No, no! It's elemental nanosized, nanometer sized, very small. It's a highly –

RM: No no no, no no, the pieces they found, first of all, they didn't do a test to show that it was aluminum and not aluminum oxide. They can't do that. Second of all, the chips we're talking about are micron sized, not nanometer sized.

TS: No, they said that, in the paper they say nanometer sized. Ryan, I don't know where --

RM: I can read it, Tony, c'mon.

TS: I have read it. How can I mistake micron sized for nanometer sized?

RM: And before we even get into that, before I even bother evaluating this, I'd like to know why was it there? Why are you guys interested in nanothermite in the first place? What do you think it did?

TS: No, I want to know why something that is basically an energetic compound was in the dust of the World Trade Center, first. How it was used, that's not the way an investigation would work, Ryan.

RM: Who has replicated this result?

TS: There's somebody from the Boston area and somebody from France, that's what I understand who have replicated it.

**RM:** You're talking about Dr. Henry-Couannier? Because he doesn't replicate it at all.

**RW:** We have to wind up this segment, we're going to start from this point in the third segment, I will leave you with one thought: If Steven Jones and his accomplices wanted to prove their case, they would simply submit their samples to an independent lab for testing. Now, we all know that they will never, ever do this.

**TS:** US Government has an abundance of samples from what I understand.

**RW:** But Jones will never submit his samples for independent testing.

**TS:** He doesn't have a lot of samples.

**RW:** Tony, we're out of time, unfortunately. We thank both Ryan Mackey and Tony Szamboti for, again, their informative and stimulating discussion, thank you for joining us, we'll see you next time for the third installment of this great debate. I'm Ronald Wieck, good night.