GERALD A. CONFER, P.E., having been first duly sworn, was examined and testified as follows:

EXAMINATION BY MR. CARTER:

Q. Will you state your full name for the record, please.

A. Gerald A Confer, C-o-n-f-e-r.

Q. Show you what's been marked Exhibit 1. Ask if you've seen that before.

A. Yes, sir.

Q. I would ask what you have brought in response to the request attached to that notice?

A. Essentially my file in this case.

Q. Do you have it with you?

A. Yes.

Q. You said “essentially.” Is there anything else that you've brought in addition to your file in this case?

A. Got the camera equipment that I used for the investigation -- inspections last week. Okay. Do you want to produce your file, please. Sure.

MR. HENDERSON: These are ten additional pictures that were taken after the ones that I originally produced.

MR. CARTER: We'll mark those as seven.

(Exhibit No. 7 marked.)

(Discussion off the record.)

BY MR. CARTER:

Q. You've given me a black notebook that gays “Miller v. Boucher.” Is that something that you created?

A. No.

Q. Who created that?

A. I assume Mr. Henderson's office did it because he sent it to me.

Q. Okay. This was what was contained in the notebook that was sent to you?

A. Yes, sir. The flags I've added.

Q. The flags you've added, all right.

A. And the photos are my photos.

Q. Photos after --

A. I'm talking about in here (indicating). The photos that are indexed were included in the notebook.

Q. The photos that are in the front end of the flap, are they something new and different than you've -- ??iously that have been shown to us?

A. I don't know. These are photos I took, and I referenced them in ray letter I sent to Mr. Henders??

MR. HENDERSON: These were the attachment to the letter report which was attached to the 213 disclosure.

A. The only ones that would be new are the ones I thin Mr. Henderson showed you this morning. I just took them yesterday.

Q. These are photographs of a 1997 Dodge Ram pickup ?? that's currently complete and whole and --
A. Yes.
Q. -- In existence?
A. Yes, it's one I took at home at the local Dodge dealer.
MR. HENDERSON: Let him finish his question??
Q. The documented chronological history, was that something that was created by Mr. Henderson office?
A. Yes.
Q. The index of documents in Miller versus Daimler Chrysler, was that -- it says, quote, from Robert Boucher's underlying file. Was that something prepared by you or Mr. Henderson?
A. Mr. Henderson's office.
Q. Okay. I'll want a copy of that. What was the significance of the chronology of the history of the vehicle to you, if any?
A. Hell, it's just basic background on the vehicle as far as my analysis is concerned. I'm interested in anything to do relative to the vehicle.
Q. Okay. Was there anything of significance in that chronology to your opinions?
A. I don't recall anything at this time, no.
Q. And there's nothing that you noted in any of the reports you've given, is that correct, either your report or the 213 disclosure that was made in this case?
A. I don't understand your question.
Q. All right. Let me show you what has been marked Exhibit 2 and ask you if you've previously seen that document?
A. Yes, sir.
Q. What's contained in Exhibit 2, does that express your opinions about this case?
A. Yes, sir.
Q. Are there any additional opinions you have other than what's contained in Exhibit 2?
A. Well, I probably have additional opinions, but as ?? as the significance to the issues in this case about the car and the accident and so forth, 1 think this covers them.
Q. I'm sure I'm probably not being very precise this coaming. I've had a long weekend. So, just so I'm clear, does Exhibit 2 contain the extent of your opinions that you're prepared to render with regard?? to this case?
A. Yes, sir.
Q. Okay. I'll show you Exhibit 3. Is that -- that was attached as part of what we've marked Exhibit 2 that received middle of last week.
A. Yes, sir.
Q. That reflects your current CV. Is that right, sir?
A. It does, sir.
Q. Okay. And then Exhibit 4, which we've marked, is, ?? believe, a report dated May 15, 2003, from you to ?? Henderson with Tabs 1 through 10 attached to it. ?? a look at that and make sure I've accurately reproduced that.

A. Yes. Some of this is stuff I put together and some it is stuff that I got from Mr. ??nderson.
Q. Okay.
A. The pictures of the wrecked vehicle, the subject wreck, were from the materials sent to me by Mr. Henderson. Some of the other materials of the whole vehicle are of the exemplar '91 that I took, and then I have marked some of the photos to help Mr. Henderson understand the parts of the car and so forth.
Q. Okay. Going back to this notebook that was sent to you, looking at the document that appears to be lower left side says May 13, 2003, page 1, the upper drawing says “Light Duty,” lower says “Heavy Duty.” Can you tell me what that is.
A. That's a sketch of the steering system and the front axle on a '97 Dodge. It's a piece of material I got from going to the Dodge dealer and asking the service people if they had any pictorials of the steering system.
Q. And was that your pencil drawings and notes on that?
A. Yes, they are.
MR. CARTER: Okay. Let's get this marked right now as Exhibit 8.
(Exhibit No. 8 marked.)
MR. HENDERSON: This is Tab 9 to that lette?? that's in the 213 disclosure.
MR. CARTER: Well, we didn't have a Tab 9. It was placed in Tab 8, but that's okay. That illuminates the situation.
THE WITNESS: It's in front of Tab 9.
MR. CARTER: Right. Others were placed behind it apparently.
THE WITNESS; Just so it's clear, I didn't put this tabulation together.
MR. CARTER: That's all right. No problem. Just trying to clear up what's in where.
THE WITNESS: Okay.
BY MR. CARTER:
Q. You were first contacted -- one other thing I want to ask you about real quick. I'm looking at, this is some loose material that you handed to me from your file, and it was between the Rule 213 disclosure and third supplemental response to request to produce, and it says “Building Inspection 6-30-03.” Is that your writing?
A. Yes.
MR. CARTER: Okay. Go ahead and mark that.
(Exhibit No. 9 marked.)
(Discussion off the record.)
BY MR. CARTER:
Q. You're a mechanical engineer by training.
A. Yes.
Q. I'm just a lawyer, and I'm not an engineer by training. What kind of things do engineers, mechanical engineers deal with?
A. Well, mechanical engineering, I think, is better known as probably the general purpose of the engineering schools where you touch on a little bit of everything, but my particular time in college was I took electives that were pointed towards automotive engineering, but in that

you take electrical courses, you take thermodynamics courses, and all engineers would take the general physics courses, the statics courses, kinematics courses, and those types of courses which would tend to allow them to understand the mathematics involved in calculating stresses and so forth.

But the mechanical people are the ones that stay in that probably the heaviest, and mechanical engineering is generally the one that, if you're going to be a machine designer type thing, that's what you work on, as opposed to civil taking you to buildings and bridges. But we have had courses in calculating loads and beams and bridges and trusses and so forth, so we have a familiarity with that. I didn't spend my -- all my electivea in that. I went to automotive engineering where I understood engines, transmissions, suspensions and that type of thing.

Q. The vehicle that we're talking about here is a what's commonly called a pickup truck.

A. Yes, light duty pickup truck.

Q. Well, when you say “light duty,” does that -- in the construction of this vehicle, this Dodge Ram pickup, are there -- when you look at its design or its construction, you have to evaluate certain factors such as its ability to carry loads or its ability to take stresses under given circumstances,

I mean, do those all go in the design of a vehicle?

A. Yes. The designer would take into account that. The design would take that into account. It would be tested and, of course, field experience would -- in this instance we've got some history because this chassis was designed before 199. so we have some history before that time that we can get information from.

Q. And is there a process that engineers go through to evaluate the potential for failure in a product during its design or creation or even subsequent to that?

A. Well, yes, yes.

Q. Is there a name for that process?

A. Well, it would be -- well, you could have a DFMA, a design failure mode analysis, which a lot of people do. But in this type of suspension, and, of course, I can't speak for the specifics at Chrysler, but it would be dependent on the age and the experience of the guy involved in the design.

If you're talking about a designer that's been around for 20 years, a lot of things he says and does, you just do them because his experience and background and knowledge usually produces a pretty good part without running all the calculations.

If you're dealing with a 22-year-old fresh out of college, then you have to do some other considerations because he doesn't have any experience. Doesn't mean he can't design, but he has to work a ?? bit harder at it.

Q. Okay. So you've worked for, was it General Motors?

A. Yes, sir.

Q. For too long of a time.

A. Thirty-three years.

Q. And then --

A. Plus, I've worked for them since that time indirectly working on accident analysis for them.
Q. Okay. Since '92 I think it is you've been --
A. '92 I retired and I think -- well, I'm trying to think, I think I've got one or two active cases for GM right now but pretty much backed off. I'm kind of trying to re-retire, but I get calls from friends and I help them out.
Q. That's how you're here today.
A. Yes, sir.
Q. Mr. Henderson is a former friend.
A. Well, friend by virtue of I've worked with Mr. Henderson before.
Q. On some GM cases?
A. Yes.
Q. Okay. And so, well, what you've been doing since '92, is that basically what you were doing for some period of time prior to '92 when you formally retired as a full-time employee for General Motors?
A. Yes.
Q. And what exactly is that, just so I'm --
A. Hell, my title at GM when I was working was senior staff analysis engineer, and I had been doing accident analysis work since basically 1965.
Q. Hell, what was entailed in performing your work? Has it senior accident analysis --
A. Senior staff analysis engineer.
Q. Sorry. And your responsibility in that position was to perform analysis of incidents involving various GM motorized vehicles?
A. Yes, particularly where accidents or claims were made against the vehicle. I was asked to evaluate the vehicle and the vehicle component, depending on the situation, do some accident reconstruction work and doing accident analysis and accident reconstruction since 1965.
Q. When you say “vehicle component,” you mean the component of causation that could be or might be attributable to the vehicle with regards to Che accident in question?
A. It would be -- this part would be sent in and it would be claimed by someone that it had caused an accident, and I would be asked to analyze sometimes just the component.
Q. Can you give me -- when you say “part,” what do you mean?
A. Hell, you've got a tie rod ball stud end and it's broken, and I would be asked to -- you know, they're making a claim that it broke and caused the vehicle to go out of control.
In that case I'd do a fracture analysis and a component analysis to make a determination whether it was broken by overload or whether it was broken by fatigue or because -- it was loose and it came apart because it wasn't, properly assembled.
Q. Is that a process that you would follow with respect to most cases or all cases that you're applying your engineering analysis to?
A. Certainly anywhere a component was claimed to be the problem. In some instances, the design was attacked, and we would be working on the design analysis, i.e., the Corvair litigation, X car brake claims.

Q. But anywhere there was a component that was at issue. you'd need to perform, you said ?? what was it -- a fatigue analysis. What else?
A. Hell, fatigue analysis is basically, from my standpoint, it's a visual inspection. It's a low power microscope inspection. And I would take it to the point of doing metallurgical examinations by asking for metallurgy being done.
I did not do the metallurgy, but over the. years, I developed an awful good knowledge of the metallurgy because it was involved in so many of the various cases that were -- that I worked on.
Q. Hell, when you say you did fatigue analysis, it was visual, but then you said low power microscopic analysis. I mean, I'm just --
A. Eye --
Q. I really don't understand, so I'm just trying to get some understanding.
A. Eyeball and low power magnification, generally called macroscopic examination, of components in 99.9 percent of components that are broken can be determined whether there is fatigue involved in the process versus just plain old overload can be done macroscopically. There are things that you can do in like the electron microscope, and it shows you the microstructure of the material, and there are characteristics of the microstructure that tell you whether fatigue is involved or not involved.
But in most cases that's not necessary. It doesn't mean it's got to be done to do the complete examination. In many cases, particularly if they're litigation, they go to that extreme because usually the other side will come in and say I looked at it under the microscope and there's fatigue.
Q. When you say “fatigue analysis,” though, I mean, does that mean shaving metal or cutting metal or taking a piece and -- how do you do that?
How do you perform this -- I mean, you know, you can't just take a microscope and go stick it down on the -- or do you?
Do you just literally take the microscope and put it down on the product or the particular component?
A. I may. In most cases, I take and hold it and I look at it with my eye. And essentially fatigue is a process of material failure where it has -- a part has failed due to a cyclic load application, the load is applied and reduced, applied and reduced, and it's applied in one direction and it's applied in the other direction. It's called reverse bending, for instance. And you get a different appearance on the separation surfaces where the fracture has occurred, and I can identify them in many instances, most instances, on an automotive product, by virtue of eyeball examination or light power microscope or magnifying glass.
Q. I take it, when you design a vehicle, the engineers that are in the design side anticipate those stressors that you've just talked about that can cause metal to fatigue.
A. Yes.
Q. And they build that into the design of the product by specifying the type of steel or the alloy or the ingredients that go into the -- they specify what the product is to be, what the component is to be when it ends the manufacturing process before assembly. Is that right?

A. As a general statement, that's correct.
Q. Okay.
A. But it's a conglomeration of knowledge that many people have developed over the years. It's published in various technical bulletins, and if you review that, for instance, the automobile industry in the early times, up through the early '50s, made axle shafts out of steel that was hard and did a heat-treating process called through-hardening, but axle shafts still could fail, they would fatigue.
And in the middle '50s, I don't know if it was Tocco or not, but Tocco makes machinery that induction-harden plain old carbon steel, and basically that process was applied to automotive axle shafts, and it essentially eliminated fatigue failures.
So they didn't change the design of the axle; they changed the design of the material and the application of heat treat.
Q. The specifications for manufacturing were changed?
A. That's right.
Q. Right.
A. Yeah, and I've seen -- my personal experience I have seen that farm implement people didn't have that knowledge or at least didn't utilize that knowledge because I've seen fatigue failure on farm implements, and I looked at that and I said ?? didn't they induction-haroen this thing? They wouldn't have a problem.
Q. Fatigue failure in a component can be the result of a failure in the manufacturing process to meet specifications. Is that correct?
A. You can have fatigue if your manufacturing process does something other to the part than what is by design. For instance, if it's putting in some sort of a notch, if your heat-treating process fails and it doesn't heat-treat properly, and in some instances you can have fatigue. If it's -- if the unit, particularly in nuts and bolts and threaded fasteners, if they're not properly tightened, you can get into fatigue failure as a result of that.
Q. Okay. Looking at -- I mean, you've told me now that typically what you would do in cases is you would look at a component part, you'd evaluate it, you'd do a fatigue analysis by looking at it with your eyeball and then perhaps doing some type of microscopic analysis, and on some occasions you would perform or ask to have metallurgical exams performed.
A. ??
Q. Have I so far recited what you've told me your process --
A. Yes.
Q. Okay. What else do you do in your job?
A. Well, with the vehicle analysis --
MR. HENDERSON: Jerry, just let him finish his question. I don't think he was through yet.
MR. CARTER: I was done.
MR. HENDERSON: Okay.
A. We do vehicle analysis. We want to determine the path of the vehicle. We take a look at the damage to the vehicle, take a look at the damage to the object struck. We pay attention, for instance, if it's a car, the car situation, we pay attention to the damage to both vehicles.

We look at the parameters on both vehicles because there are physics that apply to collisions such that you can do calculations and make determination's of vehicle velocities and things of that nature. You can also determine the velocity based on the general appearance of the vehicle and the amount of crush to a vehicle.
And the other thing we look at, of course, is just the overall damage to the vehicle, the direction of damage to the vehicle, and certainly we consider the environment, location, the weather. And I guess that's a general coverage of the various topics we take a look at.
Q. Okay. So now you've added vehicle analysis to the list of those things that you typically do in the work you have done or had done for General Motors and have continued to do for approximately ten years since you left General Motors. Correct?
A. Yes. And the other thing we do occasionally and I have done extensively, particularly when I was with GN, is we will take a vehicle out and we'll operate it with a particular component disconnected or simulated broken, disconnected, that type situation, to show the effects on the vehicle, what it will do, what it won't do, that type of thing.
Q. Anything else?
A. Again, generally I think chat covers it.
Q. Okay. When you said vehicle analysis to determine the path of the vehicle, is that what you referred to earlier as accident reconstruction?
A. That -- yes, that's part of accident reconstruction. Just looking at the vehicle and how it's damaged is part of accident reconstruction, right.
Q. Well, so is accident reconstruction a separate type of process that you perform or go through?
A. Well, it -- no. It's part of the process.
Q. Okay. Is there some --
A. We're talking in generalities here. There are some instances where, you know, there may not be a -- an accident per se. The vehicle might Just exhibit some vehicular damage, not hit anything, not hurt anybody but the customer may have been complaining that, you know, he had to repair this vehicle and he didn't want to spend the money for the repair; he thought the motor company ought to. And we would be asked to analyze those situations.
So accident reconstruction in this isn't per se what you're looking at, but we'd still be relating what we saw, the vehicle damage, the vehicle path and that type of thing.
Q. Well, I'm just trying to make sure I understand what -- that I'm -- that I understand what you're telling me, and you've said the vehicle analysis is also one of the things that you do in an ??fort to determine the path of the vehicle.
Is what you've described for me as vehicle analysis different from what you're calling accident reconstruction or is it the same process?
Do you look at the same things, the damage to the vehicle, the damage to the object struck, the parameters on the vehicle or vehicles, overall damage, to the vehicle, the environment? I mean, are there other things you look at besides those things to do some type of accident reconstruction?

A. Well, I think in a general sense, that's true, but let me give you a for instance. Several years ago we were involved in a claim where a stabilizer was claimed to be the defective part to cause the car to lose control.
So we ran a lateral capability test on the vehicle with and without the stabilizer assembled to show that actually, under the circumstances, the vehicle had a higher lateral capacity without the stabilizer than it did with; however, they were both very very high, we're talking about lateral Capabilities and in the high sixes, low sevens in tenths of a G, and that's above and beyond 99 percent of anybody's ability to drive on the highway.
If you put them in a type of lateral acceleration situation, they're usually out of contro and have an accident. But all we did was just show the capacity of the vehicle with and without the link. So there was no accident, but we were showing vehicle capability in that situation. That would be part of something we might do too.
Q. Okay. And I think that's what -- is that what you referred to as simulation of failure?
A. In that case, that would be a simulation of the claimed failure, yes.
Q. Okay. Is that something that's part of, quote, accident reconstruction then too?
A. No. That would be, in my category, would be --
Q. Would be different?
A. -- Would try to be a visualization and also an education process for myself. Now, that isn't something in that particular instance that was done in the design process. That was only done because I had -- I wanted to know the difference with and without.
Q. Okay. Are there any other things that you typically and usually do in your job and have done in your job for at least the last 10 to 15 years as you've told me about your job?
A. I think we've covered them pretty well in general, yes.
Q. Okay. I take it that it would be fair to state that you have worked with a large number of lawyers over the last 15 to 20 years.
A. Yes.
Q. Most of your work since '92 has been, I think you indicated, doing analysis for, is it ESIS?
A. Since I retired I've done probably thousands of claims analysis for ESIS, yes.
Q. And ESIS is an insurance company that's doing what for General Motors?
A. I don't know that it's an insurance company. All I know is it is the servicing company for General Motors to investigate claims and to handle claims.
Q. Okay. So you were assisting or you were contracting with ESIS to help them do that work for General Motors.
A. Right.
Q. And then in addition to that, in the last ten or eleven years, you've also had independent assignments or hirings by lawyers to perform the type of work you've told me that you do.
A. Yes.
Q. All right. And have most of those assignments or hirings been by individuals who were representing General Motors or some other automotive company?
A. No.
Q. What is --

A. There have been several of them that way, but I've had several insurance companies contact me.
Q. Direct contact --
A. Yes.
Q. -- By the insurance companies, okay. anD does that pretty well cover who most of your clients have been in the last ten years now?
A. Yes.
Q. All right. When you receive a -- typically when you receive a phone call about a matter, what is the process that you go through, and when I say a phone call about a matter, I mean an inquiry -- I take it -- lee me back up.
I take it that not ?? inquiry from a lawyer or an insurance company results in you opening a formal file and doing a formal investigation or evaluation. Is that correct?
A. That's correct.
Q. And why would that be?
A. Well, basically they would call me and ask me if I would be interested in working, and for one reason or another I would say, no, I'm not. Or they would give me some facts and go through the situation and I might say, you know, I really can't help you there. You know, I think you're barking up the wrong tree.
And they would either take that information and run with it or they would say, well, forget him and go someplace else. Of course, I don't know what they do on that.
But most people that call me know me and know my background and so forth, and I can only say, based on my experience, most of them run with what I tell them.
Q. So it's not unusual, in your experience, for a lawyer to contact you, as a competent engineer, and ask -- give you some information and ask what your opinion is ?? cake that opinion to the bank, so to speak, and rely upon it in moving forward or deciding not to move forward with a case. Is that right?
A. Yes.
Q. And that's been a process that you've observed personally at least for the last 10 to 15 years of your experience.
A. Well, let's put it this way. Yes, but, you know, it's not a frequent process.
Q. I understand.
A. But it's a situation I think that's just been established by my contact with the people over the years. I've never advertised since I retired. I've only basically been working with the people that knew me before I retired.
Q. Let's talk about the cases where you get a phone call and, you know, you decide you'll work on the case and they'll decide they want you to work on the case. What's your typical -- what typically is your process?
A. I'm pretty loose because I'm -- I'm it. I'm the secretary and the biller and the whole nine yards. I don't have anybody that works for me. And when Mick called, I said, yeah, I can help you. And in some instances the attorney will send me a letter saying we want you to do this and that and the other thing.

If it's with some corporations, for instance, today GM, they ask you to make some sort of an estimate of your time and costs, but generally I don't do that unless I'm asked to do that. Most of the time the people will just ask me to send a CV and tell what my charges are and we go from there.

Q. Okay. And after you get through that process, then what do you do?

A. Well, I do the work as requested by the attorney or, as we agree upon, in some instances I say, well, what shall we do or what has to happen here, and we'll agree on that particular path and go on it.

I've got one right now where the fellow called me, and I'm waiting for manuals so I can take a look to make sure I understand the system before I offer him any more opinions.

I've given him preliminary opinions, told him what they are, depending on what I find in the manuals and so forth, because obviously I can't memorize all the systems in all the vehicles. And that's why you go back to things like the shop manual, which we have on the Ram truck, to see what -- how it's put together and how it functions.

Q. So, in your experience, most of the lawyers or the insurance companies' representatives or others like that that contact you, are they engineers by background or training or not?

A. I would say the majority of them are not engineers.

Q. And so are you presuming they're coming to you for some type of insight into engineering issues that they think may exist in the case?

A. Yes.

Q. And, as a result of that inquiry then, are you giving them guidance as to what the engineering issues are or how does that work? You listen to their question, you say, well, that may not be right but, you know, there's this question and that question and we need to do this and that to evaluate the issue? I mean, how do you do that? Is that how -- do you understand my question? I'm just trying to find out how you work here.

A. Well, basically, I listen to what I'm told and, depending on who it is and what it is, it might be just some legal advice because ?? been in trial and been in 30 many cases over the years.

Based on what I'm told, I may tell them in this instance I can't help you and I don't think you've got a case or here's what you should be doing, here's the avenue you should be taking, and, you know, you shouldn't be looking to me type of thing. You ought to be looking over here at this particular situation.

You know, every one of the calls is different. Every accident is different.

Q. Every --

A. Most of the people that are calling me are people that have known me over the years, either through insurance work, through ESIS, through even the insurance carriers for lawyers such as Mick that they've worked on, and they come back and Mick says Jerry might help and I get a call from a stranger.

But I'm usually quoted I talked to so-and-so and that name I know, and that's how they've gotten my name.

Q. Okay. Have you pretty much -- well, let me back up a second. So what you're saying is you get these phone ?? and ultimately you decide to be involved in the case; then you outline or tell them what you think the analysis process needs to be and they decide to do it or not. Is that kind of the way it works?
A. Essentially. I may get materials from them to make an analysis. We may just do the phone call, and that's it and there's -- I don't bill for the time. Some cases I might, if I'm on the phone for half a day, I might send them a bill.
Q. And I take it from what you said a moment ago that even if you have -- well, strike that. You had experience working -- you've had experience working on products liability cases in the last 15 or 20 years. Yes?
A. Yeah.
Q. Okay. And in that history of life experience, did you ever work on the same or similar vehicle with regards to the same or similar claims of defect? You know, and I guess I would think I would liken it to the Ford Pinto where they claimed the gas tanks or the GM -- were they GM pickups not too long that had side saddle tanks?
A. GM fire claims, yes.
Q. So those were similar design issues.
A. Yes.
Q. I mean, have you worked on cases where it's been a second or third or fourth time that you've seen a similar claim of design failure?
A. Hell, you name the subject and I've probably worked a claim on it. I have worked fire issues, I've worked several fire issues, particularly with ESIS.
Q. I guess my point of my question --
A. As far as similar claims, I don't -- I know of one other Dodge incident that I was asked to analyze, but it was a fire claim on the Dodge.
MR. HENDERSON: I don't think that's the question he's trying to get to. He was going to try to restate the question.
A. Okay.
Q. What I want to ask you is, even if you have cases that involve a similar issue, I think what you'd said a few moments ago is that each case is a unique case and has to be approached in the same analytical fashion. Correct?
A. Yes.
Q. Okay. You don't walk into a case presuming that there is a problem just because a similar product on an earlier occasion had a problem. Is that correct?
A. Oh, absolutely.
Q. Would you agree with me that it would be, in your opinion -- listen, when I -- again, I'm not -- I'm not an engineer, so I'm just trying to figure things out.
But if I ask you questions about your opinion, we have this standard to a reasonable degree of engineering certainty, I guess is what we'd be talking about.
A. Yes, sir.

Q. Instead of having me say that all the time, if I just say your opinion, can we agree we're understanding --
A. My opinions are to a reasonable degree of engineering certainty, yes.
Q. Okay. Thanks. Would it be your opinion that, if someone wasn't a trained engineer, it would be almost impossible for them to make a determination about whether a product contained a defect or a failure that was perhaps a cause of some accident or collision?
MR. HENDERSON: Just object to the form. He can go ahead and answer.
A. You know, I can't answer that question because you're asking me about too many unknown. I mean, just because the guy doesn't have a degree, he might be a pretty sharp mechanic and he might understand physics well enough to do things.
I had a good friend of mine who's now passed away that I would send out to take photos for me and so forth, and he and I had worked a long time. He knew a lot about accident reconstruction, part analysis and so forth.
Q. But assume that somebody doesn't --
A. So I can't answer that question.
Q. Assume that somebody doesn't have that kind of a background, you know, a self-taught accident reconstruction background, I mean.
Do you think a person without engineering background, training, and experience is able to analyze whether or not a product contains a defect, as that word is used in the law?
A. They may or they may not be able to.
MR. HENDERSON: Object to the form.
Q. Under what circumstances?
A. You would have to give me the person and let me talk to them, and I could make a determination whether they ?? or not,
Q. What would go into making a determination that they could render such an opinion?
A. Well, it would depend on the circumstances involved ?? a particular situation. In other words, if you got ?? vehicle and the wheel Cell off, you know, that's one ?? circumstance. Obviously anybody can tell when a whee?? is off the vehicle.
Whether they can make a determination of why it's off the vehicle, I don't know. But if they look at it and the five nuts are missing or the studs are broken, they could make a determination that the vehicle probably lost the wheel while it was in operation. If the axle's broken, then it could be broken off in the accident.
But, again, some of those things are common sense, but depending on how much common sense the nontechnical person has, they might come to the right conclusion. I don't know. I'd have to talk to the person involved.
Q. Okay. Looking at Exhibit 2 that you have in front of you --
MR. HENDERSON: Let me just -- this is a publication that was in Mr. Confer's file, and he handed it to me last week, and I didn't give it back to him. It should be part of his file. You're welcome to a copy of it. It's called *Accident Reconstruction Journal*, Volume 6, No. 2.
Q. Hell, that's dated March/April of 1996. What's the significance of that being in your file with regard to this case?

A. That particular journal has the results of some offset barrier crash tests, one of them being a pickup truck, and I was using it to reference why I had an opinion relative to the accident forces involved in this particular pickup, and I was using the pictures and so forth to help explain to Mr. Henderson how I got these and what the real world of testing showed.
And this is something that I have in my office. I was a member of that until, I think, last year, and that's a publication they'd send out periodically and would show you the results of testing they did.
I don't have results of the testing that was done at GH. I have it in my head and my experience relies on that, but this was actual tangible stuff I had, so I brought it to show Mr. Henderson or anybody else that needs to understand how I came to the conclusions that I have on this particular Miller '97 Dodge.
Q. Offset means what?
A. It means it's running into the barrier but it's running in so that the vehicle isn't encompassing the whole barrier, it's hitting, in that particular instance, I think they're 50 percent. So they're hitting from the center line of the vehicle off to the left. From the center line of the vehicle to the right they're not striking the barrier.
MR. CARTER: Let's mark this.
(Exhibit No. 10 marked.)
Q. What is it about -- well I'll come back to that. Looking at your disclosure, understand I just want to run through these and see if I understand clearly what's being said and I'll come back to A.
B is: Vehicle operated by Mr. Miller at the time of the accident was reasonably crashworthy. I
A. Yes.
Q. By crashworthy do you mean that it does not deform in the course of a crash in a fashion that would exacerbate injury to human ???
A. No. The vehicle operated as a normal vehicle design would in this particular instance. I'm not saying that he wasn't injured by virtue of the crash and the collision crush of the vehicle, but there is nothing unusual or abnormal about the vehicle and the vehicle crush in this particular instance that would say that it had anything abnormal about it or anything defective in the design of the body frame arrangement; that it was -- it was reasonably crashworthy.
Q. Right. How long did it take you to reach that conclusion in this case?
A. I would say probably a day. I think it took me a day to review the materials.
Q. Excuse me. Materials that you received from Mr. Henderson?
A. From Mr. Henderson, yes.
Q. And those materials were this notebook that you've referred to, and what else did you review?
A. Well, essentially the -- to come to that conclusion, I would basically say I utilized the police report, the description by the operator, Mr. Miller, of what was going on, how he was operating the vehicle. I used ?? -- at that time the scene photo that I think there's only one scene photo in that early material, and the rest of that was developed by virtue of looking at the photos that were available of the vehicle.

Q. From what period of time?
A. Well --
Q. '98 or the photos taken since cannibalization?
A. The photos that were taken, I'm really not sure when and what the accumulation is because some of them we've gotten later on. I just received some of them because I understand they were just surfaced and brought.
But certainly, let's put it this way, all the photos that I looked at before I came over to look at the vehicle itself, which would now encompass my photographs, and then it would also include going and looking at the subject Dodge that I looked at back in Detroit that you have photos that are attached to the report I sent to Hick.
And I'm saying that part of the decision was probably an eight-hour process. There were more hours because I reviewed a lot of material, and a lot of it wasn't relative to that particular conclusion. Some of the materials I reviewed weren't relative to a whole lot of anything relative to my analysis of the vehicle and the accident.
Q. Vehicle traveling at 45 miles an hour moves at what rate?
A. Well, roughly speaking, it's one and a half miles an hour -- one and a half feet per second per mile per hour or 88 feet for 60 miles an hour. So 45 is going to be around 50, 55.
Q. Feet per second?
A. Feet per second, right.
Q. That's a generally true statement with regards to most motor vehicles.
A. Well, 88 is exact. Generally they talk about 90 and 45 to round them off. But a vehicle traveling 60 miles an hour travels 88 feet pec second.
Q. So after review of those things that you've told me about, the police report, the deposition of Mr. Miller, and the scene photograph from January of '99, and that was the only photograph taken of the scene of the occurrence even close to the time of the occurrence at issue in this case, was it not?
A. I'm familiar with only the one photo of the building, yes.
Q. Okay. And then you looked at additional photos, and, you're not sure which ones necessarily, but that was the process you went through, and then reviewed some other information and came to a conclusion that, B: The vehicle operated by Mr. Miller at the time of the accident was reasonably crashworthy.
A. Yes.
Q. Do you believe that a reasonably competent engineer could follow the same type of path approximately in reaching that conclusion?
A. Well, depends on his competence. If he's involved in accident reconstruction and so forth, but there are a lot of engineers that I have trained because they're not competent in accident reconstruction and analysis of collisioning forces and haven't been familiar with crash testing and so forth that I could bring them up to speed, but to give them the assignment they probably wouldn't pick up the details and probably wouldn't come to the proper conclusion. So, I guess to answer your question, any reasonable, no. You have to be in the proper area of training and expertise.

Q. So with regards to this particular issue, it would take something more than a layman's background to understand whether or not the vehicle had a crashworthy nature to it. Is that correct?
A. If they were coming in cold turkey to look at it, in my opinion, yes. Yes.
Q. Okay. Well, is there anything about the defendants, as you know them at this point in time in this case, that allows you to conclude they were competent to render opinions about crashworthiness about this vehicle?
A. Who specifically are you referring to?
Q. Mr. Boucher and Ms. Enright.
A. I basically don't know. I haven't met them. I've read their depositions, and I guess I can't pass judgment on them based on that information.
Q. Based on their depositions that you've read, was there anything in there that would allow you to conclude they have the competence to render an opinion about whether or not this vehicle, this truck that we're talking about, was crashworthy at the time of the occurrence in question?
A. ?? only say, based on my experience and so forth, that in general, the attorneys do not have that, unless they have worked with somebody like myself over the years. There are several of them that I can say, based on working with them several times, that they've picked up competency that way. They have a pretty good feel, when they call, what's going on.
Q. And based on --
A. But they'll still call me to do the analysis.
Q. Sure. And based on that experience that you've told me about, you would agree that neither Mr. Boucher nor Ms. Enright had the background, training or experience to allow them to competently render an opinion about whether or not the vehicle in question was crashworthy. Is that correct?
A. Again, I can't pass on them. I can give you the generalities, but I'd like to talk to them and get more information, you know. Attorneys took the deposition. They didn't ask the questions I would.
Q. Let me just -- I'm sure my question is not clear.
A. Yeah.
Q. Just based upon your experience and what you've read of their deposition, do you see anything in their deposition or have you received any other information which would allow you to conclude that they are competent to render an opinion about the crashworthiness of the truck in question?
A. Like I said, I can't answer your question because there is more information that I would need to know. I can only tell you my general experience is that attorneys aren't equipped that way.
Q. And, again, I'm just not trying to be difficult. You're telling me you need more information. So my question is, do you have enough information that's been given to you to allow you to conclude that they were competent to render it?
A. No, I do not.

Q. Okay. Thank you. So at this point you can't make such a statement that they're competent to render an opinion. Correct?
A. Correct.
Q. That's all I was trying to --
A. I can't make the statement that they're not competent.
Q. Hell, if you believe that they are not competent, if there is insufficient information for you to conclude that they're competent, what is it that you would conclude that precludes you from saying they're not competent?
A. I would like to talk to them, ask them specific questions that I would need to get that kind of a feel.
Q. Well, what would the specific questions be?
A. I'd like to know more about their background as far as cases they've handled.
Q. What else?
A. Essentially that would be it. How much familiarity they had with working with cars.
Q. What else?
A. It's kind of those two general questions. They would probably bleed off into other questions, but essentially those would be the two general questions I'd ask.
Q. Okay. If, for example, one of them had never handled a products liability case in their life, would that allow you to conclude they were not competent to render an opinion about crashworthiness in this case?
A. Possibly.
Q. What else would you need?
A. Hell, just because they've never handled one, doesn't mean they don't have any experie?? with accidents and so forth.
So I -- you know, I can't answer that question specifically. It would probably tend to indicate that they didn't have the ability to make any decisions along that line, but there -- you know, it's one of those things where I'm -- you're trying to ask me some opinions on the shadow on the wall, and I really feel incompetent to answer those kinds of questions.
Q. When you said “experience with accidents,” did you mean background, training, and experience in accident reconstruction?
A. Well, let me back up this way. Certainly, to evaluate the situation that we're in today, to evaluate this vehicle and so forth, I would say they didn't have that competence.
Q. The competence to determine whether or not the vehicle was crashworthy?
A. Well --
Q. Excuse me. The competence to determine whether the vehicle was crashworthy?
A. Right, based on the evidence that's here today.
Q. All right. It would require some type of determination by an engineer like yourself or someone --
A. Yes.
Q. -- Equally competent. is that correct?
A. Yes. Yes.

Q. And so I take it that your opinion about, in C, The present condition of the vehicle allows the determination that the vehicle was crashworthy, is really in the manner of a supplemental opinion that you rendered after looking at the vehicle or did you draw that conclusion just from the photographs of the cannibalized vehicle?
A. No. I drew the conclusion by virtue of the photos. If you recall -- if you look at ray letter to Mr. Henderson, it was before I looked at the vehicle. The only thing looking at the vehicle has done has solidified some opinions and has given me more data than was available by virtue of what existed before that time, including Mr. Kelsey's technician's examination.
Q. I noticed, in reviewing the documents that you reviewed, that you had made reference to you looked at Police Officer Ott's deposition, and there were --
A. Yes, sir.
Q. -- Two handwritten notes on top of the deposition referring to page 13 that referred to weather and page 14 that said no photos.
Was there anything -- was that some notation of what was significant to you in the information chat came from that deposition?
A. Yeah. That's a typical analysis that I would do, because I have been in situations where it's been checked photos and there aren't any and it's been an oversight and the photos haven't been gone after or in some -- there have been the rare occasions when the photos haven't been available or they've been destroyed.
Q. Okay. For purposes of analysis in this case, you're aware then that the police officer who came to the scene took no photographs. Correct?
A. Yes.
Q. He made no measurements. Correct?
A. Correct.
Q. He did not position on his report the location of the vehicle. Correct?
A. That's right.
Q. And he did not call or ask for any accident reconstruction information to be developed such as looking or measuring skid marks, if any, measuring the curb, if any, none of those things. Correct?
A. That's correct.
Q. Was there anything that he did that would aid in evaluation of how this event occurred?
A. Well, he took the eyewitness's name down, as I recall --
Q. Okay.
A. -- Which allowed the information to be obtained from the eyewitness. i think he took the statement from the eyewitness.
Q. And what did you understand him to say the eyewitness said?
A. Well, basically it's on the police report that the vehicle went to the left and struck the building, and he didn't see any brake lights --
Q. Okay.
A. -- Which is significant right there.
Q. What's the significance of that?

A. Ho brake lights.
Q. Okay. And what's the signifies of no brake lights?
A. Well, in my experience in accidents and in testing, that as soon as something goes awry with the vehicle, the first thing the customer does, if he turns the steering wheel at the same time, he goes to the brake.
And over the years, General Motors has developed a program particularly that they introduced to police departments to show them why you shouldn't do that and to train them so that they don't do that.
Q. So they don't hit the brakes.
A. Right.
Q. Because --
A. People typically hit the brakes.
Q. And, you know what, you're right about that. What is it -- what was the message that GM was trying to convey in its information that it put out to the police departments or other people about why not to do that?
A. Well, if you hit the brakes and lock up the wheels, you're out of control. It's that simple.
Q. So the best thing to do --
A. If you can control braking, you can control the vehicle --
Q. ?? thing to do --
A. -- Under certain circumstances.
Q. Best thing to do is try to steer out of it instead of hitting the place?
A. Not necessarily. Some places institute steer out of it or it's to put in a controlled steer -- controlled braking to allow you to continue to have control and steer the vehicle.
Q. At what point in time -- strike that.
How long was it in time between the time the vehicle Mr. Miller was driving veered to the left and the time that the vehicle struck the wall?
MR. HENDERSON: I'm going to object to the argumentative form of the question by using veering, but he can answer.
Q. Well, I'll use the terra you used. I think -- maybe I misunderstood. I thought you said veered to the left. Was that a terra you used, veered to the left?
A. Based on the information we have, the direction he was going and so forth, he would have had to have veered to the left --
Q. Okay.
A. -- To get over to the building.
Q. All right. So, how much time elapsed between the point of the vehicle Mr. Miller was driving began to veer to the left and the time it struck the wall?
A. I can't answer that --
Q. Why can't you answer that?
A. -- Except in general saying that it was not an abnormal time. in other words, I don't find any evidence that he is driving 80, 90 miles an hour, which would make it a very short period of time, versus driving 35 or 40 miles an hour, which is going to be a much shorter time.

The time is related to the velocity of the vehicle. At the time he's going 40 miles an hour, he's going some 15 feet per second.
Q. You found him to be going approximately 40 miles per hour at the time of the collision?
A. No, I don't think he was going 40. I think he was going less than that. I think he was going 30, 35. Let's put it the general 25 to 35 miles an hour --
Q. And that's based on what?
A. -- Is my speed estimate based on the crush of the vehicle and the location of the crush of the vehicle, and that's a Judgment based on experience of viewing crash tests and also the data that's in the Journal that you have in front of you,
Q. And other than your estimate of what his speed was at the time based on the crush, you can't -- do you have any other opinion about the time involved from the beginning of veer to the time that the vehicle struck the wall. Is that correct?
A. No, other than it was a few seconds. It wasn't minutes. It was something on the order of a few seconds.
Q. When you say “a few seconds,” two? three? four?
A. I would say something less than ten.
Q. But other than saying “less than ten,” you can't render any opinion. Is that correct?
A. I might. I haven't really done an analysis of that particular phase of the accident in this instance. My opinion, until you asked the question, it wasn't necessary; so I haven't done it.
Q. Well, what was it that you -- what additionally would you need to look at to make that determination?
A. I would basically make a full-scale layout of the -- or a scaled layout of the accident scene, based on what I now know after reviewing it, and make some drawings to indicate some paths the vehicle, and from that then I could make a determination, based on the speed of how long it was from Point A to Point B so we could be more exact, and I haven't done that.
Q. And it's not your intention to do that. Is that correct?
A. Right now, no.
Q. But absent doing that, it's your belief that it certainly was “less than ten” seconds and “a few seconds” were the words you used. Is that correct?
A. Yes.
Q. Your conclusion in E that the vehicle went to the left before the collision with the building because of driver error or inattention is because you have determined that the vehicle -- there was no vehicle system malfunction. Is that correct?
A. Yes.
Q. You do not have some type of independent evidence or knowledge that the man fell asleep; you're inferring that he did something or fell asleep, was inattentive or fell asleep because you conclude that there was no manufacturing defect present in the vehicle. Correct?
A. Correct.
Q. All right.
A. It's consistent with him falling asleep.

Q. Okay. For how long had he fallen asleep?
A. I can't answer that question.
Q. Okay. Do you know the path that he was traveling immediately prior to the -- he being Mr. Miller -immediately prior to the time of the occurrence in question here?
A. What are you referring to as time of the occurrence? The collision?
Q. Yes. The collision of the vehicle -- when I say the occurrence, I'm talking now about the collision with the wall by the Dodge Ram pickup that Mr. Miller was driving.
A. Yes. The physical evidence of the vehicle shows us that he's running parallel to the vehicle -- parallel to the building, I'm sorry.
Q. Right. Immediately prior to the collision --
A. Yes.
Q. -- He's running parallel.
A. Yes. He's approaching the building, and he's going parallel to the building.
Q. My question was, and I perhaps misspoke, what was the path that he traveled to get to the collision? In other words, where had he been and what was he doing? Are you aware of that?
A. Well, your question is vague to the point where are we starting? Are we starting in the roadway?
Q. Let me -- let's back up. Let me make sure -- do you need to take a break?
A. No.
Q. In D you say: The vehicle contained no manufacturing defects in its steering or suspension systems.
A. Yes.
Q. Is that an opinion you rendered from looking at the photographs prior to your inspection?
A. Yea, the photographs with the rest of the material that was available.
Q. Okay. So all your inspection did was just confirm that opinion for you. Is that right?
A. Yes, sir.
Q. Please tell me everything that you found significant or Important in helping you arrive at the conclusion expressed in D.
A. Well, the primary conclusion there, of course, was based on the front suspension because I wasn't too concerned about the rear suspension until your disclosure came, let's put it that way, Kelsey's disclosure.
But the front suspension showed in the photos showed that the suspension links for the left corner of the front of the vehicle were both damaged and bent, and it also showed that the ones on the right side holding the right side of the axle were not bent or deformed or damaged in the accident, however, they had been cut off.
The frame, which is the real indicator of what's happening in the collision, the frame is relatively undamaged, the frame rails. There are photos of the frame rails before, they were photographed later after being cut, but the frame rails are both parallel and the left frame rail as well as the right frame rail in the front of the vehicle are not damaged.

The interior of the car in the photographs showed that the passenger side of the passenger compartment and the dash over towards the steering wheel were virtually undamaged. The right side of the vehicle showed essentially only superficial damage that I couldn't define whether ?? from the accident or from handling of the vehicle.
The photos showed the crush of the vehicle to be right down a line in the front of the vehicle or let's say the left front headlight into the cowl toe pan area, the end of the rocker area, and into the A-pillar area of the vehicle, and that all was a direct indicator and an easy way to read that the vehicle had to be parallel with the building at the time it struck the building.
And the offset collision in this instance only involved what I'm going to call a relatively soft area of the front end of the vehicle as opposed to the total vehicle which was taken into consideration in the design for crashworthiness.
And essentially we hit the left headlight, we hit the left wheel and we drove it back into the cowl and the rocker area, and we crushed the vehicle in a very select almost missed, so to speak, area, and we drove that corner of the vehicle back into the passenger compartment.
And it happens to be where the driver, if he's in the normal position driving the vehicle, that's where his left leg is.
The photos that I had relative to the rear suspension were incomplete for what was there as it exists today, and there's enough information there today to show that there was absolutely nothing wrong with the rear suspension.
Q. Anything else?
A. Can I have the question again to see if I need anothe question.
(Record read.)
A. Okay. The rest of that would be I did a kind of a failure mode analysis in my head. Well, I have discussed it with Mr. Henderson too. If something would go awry, a manufacturing defect, per se, that's going to affect the control of the vehicle and change the vehicle path, in this particular instance, in the few seconds that we're dealing with, ten or less or four or five hundred feet or less, the operator, in ray opinion, based on my background and experience, is not going to be able to change the direction of the vehicle.
And based on the information we have, the vehicle was going down the road and struck a vehicle -- a building on the opposite side of the road, on the left-hand side of the road. So the vehicle had to go to the left to get over there.
And then there's no way that vehicle would have gone straight into the vehicle -- into the vehicle parallel to the building unless it was steered back to the right and it responded. So that fact, in and of itself, says nothing went wrong with the vehicle; the vehicle was doing what it was capable of doing. It was the driver that was the problem.
The pictures and all that all confirm that, but that simple fact of the collision forces, where the vehicle was, where it ended up and how it ended up, are all consistent with a vehicle that hasn't any problems, and we see with the vehicle itself that that's all consistent.
Q. At the time -- other than the photographs that were taken in January of 1996, the other photographs you were shown were taken substantially after that date. Is that correct?

A. Again, I didn't write them down and I don't have it in my head when they were all taken, whenever they were. I assume you know better than I.
Q. Well, the ones taken after January of 1998 were all after the vehicle had been cannibalized. Is that correct?
A. Well, let's put it this way. It had been started to be disassembled but it had various stages. I think it was disassembled before it had the cutting torch applied and pieces were cut off it.
Q. Would it be fair to say that, as of the time of those photographs, the ones that do not Include the January 1998 photographs, the vehicle, this truck was not in the same condition it was at the time of the collision or occurrence?
A. I would say any of the postaccident photos, the vehicle isn't in the same condition it was at the time of the collision.
Q. I'd like you to show me the photos that you relied upon in stating that, based on the front suspension, certain photos show suspension links for the left corner of the front of the vehicle were damaged and bent. I've marked here as Exhibit 6 those photos which were provided to us,
Were there photographs other than your photographs that you relied upon in making that determination?
A. Yes.
Q. Okay. Are these --
A. These are --
MR. HENDERSON: Just a second. Could you read the question back again, please.
(Record read.)
MR. CARTER: Let me just reask the question because there's some difficulty in locating it.
Q. You said that from the materials you saw in looking at the front suspension, you said certain photographs show that the suspension links for the left corner of the front of the vehicle were damaged and bent.
I'd like you to show me those photographs that you relied upon in coming to that conclusion.
A. Well, without going through all of them, this particular photo is the best photo right up here. It's marked U on this particular page.
Q. Well, you know what --
A. It's in my file too, and you have a copy of that, I think.
MR. CARTER: I think this is your pile, so I'm going to record -- to mark that page with an exhibit which is the next one.
MR. HENDERSON: Actually, Jim, I think that's from my copy of Mr, Kelsey's deposition.
MR. CARTER: What's it from? It was in his --
MR. HENDERSON: I just put it down here.
THE WITNESS: Yeah, he just saved me going through all that is what he did.
MR. CARTER: Well, that's fine. Why don't you point out in there, and we'll mark -- I do want you to tell me every photograph that you relied upon in reaching that conclusion, please.
MR. HENDERSON: Look through there and find the photographs.

MR. CARTER: And, if you can, just refer to if it's a deposition, previous deposition exhibit, we can do that. If you want to take a few minutes while you search out those photos and that way you can be organized, that's fine. Let's take a break.
(Recess taken.)
THE WITNESS: Well, I've got several. I don't know that I've got them all, but there are several you can look at here.
MR. CARTER: Well, I just want to make sure that you show me all the photos that you thought had any importance or significance or allowed you to reach the conclusion or conclusions that you've reached.
MR. HENDERSON: So take your time and go through them.
THE WITNESS: Well, that's a different question. We were talking about suspension and I marked suspension.
MR. CARTER: That's fine. You can do that, I'm going to ask you the same process on all these.
THE WITNESS: I marked the suspension ones to answer your previous question.
MR. HENDERSON: Well, off the record.
(Discussion off the record.)
BY MR. CARTER:
Q. I think I'd asked you first about those photographs that you relied upon in forming your opinion that the suspension links for the left corner of the front of the vehicle were damaged and bent.
A. Yes.
Q. All right.
A. There's a real good one showing the left upper and showing the left lower too, but it's not as vivid as the left.
Q. Well, all right.
A. I don't know whose photo that is.
Q. Well, we're looking -- you're showing me now a document that's got three photos on it.
A. Yes, I'm referring to this photo right here (indicating).
Q. Upper right-hand?
A. Upper right. I think it's marked U in some of this stuff. It may be one and the same. I'm sorry. Here's U that we had previously, and U shows both of them, and it shows both of them deformed very well.
Well, put it this way. It shows them as good as I got them in the original. I show them in ray photos that I took the other day very clearly, and you have these in front of you here. This is my stack that was taken on June 30th.
MR. CARTER: Okay. Hold on. Let's mark these the next two exhibits.
(Exhibit Nos. 11 and 12 marked.)
Q. Show you what's marked 11 and 12 and ask you to designate, in looking at 11 and 12, I've handed them to you, with a single photograph in the bottom portion of the page and two photographs ??ering the upper portion of the page.

Now, which of those photographs on 11, is it, that you're referring to as supportive for the question?
A. The one on 11 is the upper right and it's got a handwritten U above it, and the one on 12 is also the upper right photo, if you hold it vertically.
Q. Those appear -- 11 and 12 appear to be the same except 11 is a little more washed out. Would you agree?
A. Yes, sir.
Q. Okay. Now, on the photograph in the upper right of 12, what is it you're talking -- referring to when you say the suspension links for the left corner of the front of the vehicle were damaged and bent?
A. I'm talking about the item that appears to have a 360 or a 350 on it, which is right here. Do you want me to circle that?
Q. In the center of the photograph, sure, that's fine. You can circle on that.
A. Circle that and then that's the upper arm because it's the one that's high coming off the frame bracket, and then this I'm circling below that is the portion of ??ower arm that's still on the vehicle showing that it is buckled or deformed also, even though there's just a short portion of it.
Q. Okay. Do both of those items you've circled show that they've been cut?
A. Yes, they have been.
Q. And that was in cutting -- when they were cut, well, what was removed from those items?
A. Hell, the control arms have been cut in between the two connections, the connection at the frame versus the connection at the axle.
Q. So what I'm looking at is the connection to the frame?
A. Yes.
Q. And the -- and the control arms from that point out to the axle have been removed at some point. Is that correct?
A. Well, they were cut and whether they were removed with the axle or whatever. They go forward. They don't go out. They go forward. This is fore and aft components in the vehicle theirself, they're located behind the front axle.
Q. What's the length of that piece that's --
A. I haven't measured it.
Q. What is the function of that piece that's not present because it was cut and removed?
A. Those two items along with the two on the opposite side of the vehicle are there to control the motion available to the front axle. They are the suspension links, two of the suspension links on this suspension. There is one other link that controls the -- how that axle moves.
Q. Okay. And did you ever look at those portions that were removed when the engine was removed?
A. No, I did not.
Q. You are unable to state to any certainty, as you sit here today, what the condition of those portions are that were removed and that you never observed. Is that correct?
A. No.

Q. Oh, you are?
A. Yes.
Q. Having not seen them?
A. Yes.
Q. Okay. What is their condition at the time they were removed?
A. They were connected to the axle. Obviously -- it's obvious because they are cut to remove the axle. What is more obvious by the fact that they're deformed, which means they were attached when the vehicle hit the building. If they weren't attached, you wouldn't have deformation like you see there.
Q. Do you know how they removed the engine when they cannibalized the vehicle?
A. No.
Q. You weren't present. Correct?
A. Correct.
Q. You haven't talked to anybody to explain how it was done. Correct?
A. Correct, I have not.
Q. All right. Would it be fair to say that in removing the engine they altered the structure of what you've shown in Paragraph 12 or in Item 12 here?
A. Talking about the photograph?
Q. Yes.
A. I can only tell you, based on my knowledge of how the vehicle is put together and so forth, to get the engine out of the vehicle they shouldn't have had to do anything to that control arm and the axle.
Q. They should not have?
A. Should not'have. The engine ?? up out of the vehicle, and it would be removed by raising it up.
Q. That would be the normal way to do it?
A. Yes.
Q. So there was some other reason that somebody was cutting away down at this area. Is that correct?
A. Again, what you're asking me now is speculation.
Q. You have no idea when what is displayed in 12 was cut. Correct?
A. I do not know why they cut it out of the vehicle.
Q. That was my next question.
A. All I can tell you is that they did, but they left enough evidence to show that the arms are deformed and that's significant to me.
Q. Do you know how the deformation occurred?
A. Yes.
Q. Is there any other explanation besides the collision?
A. No.
Q. The deformation, in your opinion, could not have occurred in the process of cutting up the vehicle --

A. No.
Q. -- Or tearing it apart to get to something?
A. No.
Q. Why not
A. Too much load required.
Q. Do you know what was done to the vehicle that resulted in the cutting of 12, the picture displayed in 12, the item displayed in the picture in 12?
A. Well, I think we've talked about I don't know why they cut versus unbolting. Generally, I can tell you the reason they cut is because the parts aren't any good, and it's quicker to cut them than it is to unbolt them and take them out.
Q. Could the remaining portion of what has been cut in 12 have been -- have failed prior to the collision?
A. No.
Q. Under no circumstances. Is that correct?
A. Absolutely not.
Q. What is the basis of that opinion?
A. My knowledge of vehicles and the performance of this vehicle and its vehicle path.
Q. You will agree that the condition of the vehicle displayed in Picture No. 12 is not the same condition it was in at the time of the collision in question. Is that correct?
A. The portion I see is in the same condition that it was at the time of the collision. The whole part is obviously not there because it's been cut apart with a cutting torch.
Q. Okay.
A. In ray opinion, that was all together in the vehicle when they took it apart.
Q. Would some other engineer be capable of coming to the conclusion that the missing portion of this precludes the rendering of any opinion, to a reasonable degree of certainty, about the condition of this portion of the product at the time of the collision?
A. In ray opinion, he should not.
Q. And why not?
A. Because, if he understands how the vehicle is built, follows the path of this vehicle, he would understand that we'd have a different accident. He'd have a different damage to the vehicle.
Q. Follows the path of this vehicle, was that your terminology?
A. No. You know, in an analysis, you analyze all the data that you have, and we have data of the vehicle path and the collision damage to the vehicle.
Q. The vehicle path is what you hypothesize it to be. Is that correct?
A. No. The vehicle path is dictated by the collision damage to the vehicle and the description of the path that the vehicle was in before the accident --
Q. It's --
A. -- Occurred.

Q. It's your testimony earlier that you stated that immediately before the collision the vehicle turned again to the right so that it was parallel with the point of the wall that it collided with. Is that correct?
A. I said that the vehicle showed that it had gone to the left to cross the lanes of traffic to get to the other side of the road, which required that it be steered back to the right so that it would be parallel to the building when it crashed.
Q. That assumes --
A. I didn't refer to immediate or anything of that nature. I'm just telling you what had to happen to that vehicle for it to traverse that path.
Q. That assumes that your hypothetical of it striking the building in the fashion you say it did is what occurred. Correct?
A. That's not hypothetical. It's ?? on what the vehicle shows.
Q. Is there, within your study of engineering, any degree of change that can exist with respect to the -- what is it you called it -- the line of force that was asserted on this vehicle? In other words, I think you're saying this vehicle was at a zero-degree plane with the wall in question.
A. Yes.
Q. Okay. Is there recognized in any engineering any variance built into that analysis?
A. Based on that analysis, I would say that within plus or minus five degrees. It's certainly not plus or minus fifteen.
Q. Okay. You acknowledge that it could be a five-degree difference from what you've testified to. Is that correct?
A. Something on that particular order, but it's not very far.
Q. And what is the basis of your opinion that it's not very far?
A. The damage to the vehicle.
Q. ?? are the pieces of the vehicle that allow you to conclude that it could be zero to five degrees but not zero to ten degrees?
A. I don't believe it was zero to five. I'm just saying within any engineering -- you asked me to put some ?? parameters on it, and I'm giving a generality of plus or minus five degrees. And without doing extensive reconstruction, which would involve quite a bit of time of laying this out and so forth, I can't give you an exact whatever.
But I'll just say, based on the damage that's on this vehicle, based on the damage that the building shows, that this vehicle was essentially going straight down the road, but it happened to run into the building. It was zero degrees, might have been zero maybe a half a degree, I don't even think it was up to five, but in accidents, you could be plus or minus five degrees as opposed to plus or minus fifteen degrees.
You're shifting between a general question and a specific question and that's why I'm changing around on you.
This car went head-on into the end of that building.
Q. Have you now shown me all the photographs that you relied upon in your statement that the suspension links for the left corner of the front of the vehicle were damaged and bent?

A. I've shown you most of them. Here's a couple more. This particular one here is not marked, but it's got left side at the top, and that one shows the control arm bent, as does the photo here that's marked, I guess that's marked YY. That also shows it.
There may be others. I've certainly picked the ones that are the ones that demonstrate it the most. Then, of course, there's some in my photos here that show it.
(Exhibit Nos. 13 and 14 marked.)
Q. Okay. Could I just ask you to circle on 13 or 14 those portions of the photographs that you believe are supportive of that opinion.
A. (witness complied)
Q. Then, if you would, read into the record those photographs that were from your photographs taken June 30 of this year the numbers of those photographs which you believe are supportive of that opinion.
A. Page 11. I don't have to read the zeros in front for you?
Q. No.
A. It's page 11, page 12. I think that's the ones I've marked. And then relative to my inspection also, we do have a videotape that I took that shows it.
Q. Okay.
A. That was Exhibit 6.
Q. And so I think your next opinion was those on the right side were not bent or deformed, however, they were cut off.
A. Hell, back up one more. Here's two more sets of photos that show the left. But, like I said, there may even be more than these, but you asked me all. And I'll circle it on that photograph there. That photograph there and there's two pages, six photos, three on each page, and I've marked two on one page and three on the other to show the left front bent.
(Exhibit Nos. 15 and 16 marked.)
Q. Okay. Then I think you stated that those suspension links on the right side were not bent or deformed, however, they had -- were cut off. Is that correct?
A. Yes.
Q. And that was your second statement, and what photographs were you looking at in formulating that conclusion?
A. Okay. Exhibit 6 is on top, which is my photos. And page 12, bottom photo, page 13, there's only one photo shows it pretty clearly.
Q. Those were the photographs you took June 30. Correct?
A. Correct.
Q. Were there any photographs that were taken before yours of June 30?
A. Yes. I was just starting at the top and --
MR. HENDERSON: Are you through going through Exhibit 6?
THE WITNESS: That's the only ones I've marked.
MR. HENDERSON: Okay.
THE WITNESS: I'm pretty sure our video shows it too. But there's that stack. There's a photo showing the right front not bent. There's a photo right here that shows the right front not bent.

BY MR. CARTER:

Q. You know, just looking at these three, they look to be ?? three. I don't want to -- we don't need to replicate these if we don't have to. These seem to be the same three pictures in a different configuration but you tell me.

A. Yes, they do, and I think this is the clearest to show what we're talking about.

Q. Okay. Let's not replicate things. That will be fine. You don't have to show me each copy of the same photograph. Just if you have a different photograph that you also relied on, that's fine.

A. I think I handed you that. Has that the same?

Q. Yes, you did.

A. No, no. Do you have this one? You guys mixed up and sent me all the multiple copies.

MR. HENDERSON: That's my fault.

THE WITNESS: No, it's not. You got them from him.

(Exhibit Nos. 17 and 18 marked.)

BY MR. CARTER:

Q. Ask you just to circle on Exhibits 17 and 18 those photographs which are showing --

A. Okay. 17 is the top left which is the good blow-up of it.

MR. HENDERSON: You're talking about the top left photograph. Right?

THE WITNESS: Top left photograph. Correct. And on 18, holding the sheet vertical, it's the bottom picture.

BY MR. CARTER:

Q. Okay. This is, again, the right front suspension link.

A. It is.

Q. And it connects to what? The axle?

A. Attaches to the axle on the right side of the vehicle as the left side attaches to the axle on the left side of the vehicle.

Q. And being unbent shows you what?

A. Shows that it's consistent with the line of force that I've determined and the fact that it was intact and not loaded at the time of the vehicle collision, and it's consistent with the photographs of the vehicle postaccident, which show the right front wheel in its normal position.

MR. HENDERSON: Were you looking through other photographs?

A. I think I got all the right fronts that there are. We started with mine. Then, of course, the video. Now, wait a minute. I take that back. Excuse me.

Q. When you say normal --

A. I've got these two. Now, that one was the duplicate. Did you have this one? It's the bottom photo in that.

Q. I think that's what you've already given to me; isn't it?

MR. HABECKER: I'm not sure.

Q. Is that different?

A. I think that's another one.

(Exhibit No. 19 marked.)
MR. HENDERSON: Did you just circle something?
THE WITNESS: I circled Exhibit 19, the bottom photograph.
BY MR. CARTER:
Q. You said intact and not loaded at the time of the collision. What did you mean?
A. Well, there's no deformation to the control arms, which would indicate that they weren't overloaded, which would indicate that the forces of the collision were not seen by those control arms.
Q. Okay.
A. In the photographs, there are ?? of the vehicle that show that Che right front tire is intact, it's inflated following the collision, and it looks like it's in relative normal car position, which would indicate that it's attached. Add to that the path of the vehicle and what the vehicle did and so forth allows you to draw a conclusion that it was working okay.
MR. HENDERSON: Did you want him to point to the photos of the right front tire or to identify them?
A. Yeah, let's see if I can find it. Here it is. I flagged it. Here's the -- this is a photo in the notebook showing the right front wheel and tire inflated in normal position.
MR. HENDERSON: Rather than -- off the record.
(Discussion off the record.)
MR. HENDERSON: The photograph that you just handed Mr. Carter is the same as Boulter Kelsey Deposition Exhibit 10, Photos A and B. Is that correct?
THE WITNESS: That's correct.
BY MR. CARTER:
Q. The statement that the observation with regard to the right front suspension link was consistent with the line of force, that merely meant that there had been no loading on it to cause deformation as you observed on the left. Correct?
A. I don't think I follow that question.
Q. Well, I mean, when you pointed to the left-hand one, you said this shows where the line of force was because this shows deformation on the left suspension link. Is that what you were saying?
A. No. The deformation on the control arms is consistent with the line of force down the wheel and tire that I described. It's what you would expect to see.
Q. Right. And so on the right side you're saying --
A. On the right side it does two things for you. It shows you what it would look like undeformed and it also indicates no loading, overloading to those components on that side, which, again, is consistent with what you see in the vehicle, consistent with its path, and consistent with its collision.
Q. Okay. Again, though, that merely goes to the issue of the line of force. Correct?
A. No. I think it goes to the claim that there's something wrong in the front suspension.
Q. Well, if you say --

A. Excuse me. It does one other thing that we haven't covered here. It shows there's no A-frame in the front suspension of this vehicle, as claimed by Mr. Kelsey, which covers one of my statements further down.
Q. Okay. So, when you say it was intact and not loaded at the time of the collision, you're referring to the fact that there was no deformation visible from your observation. Correct?
A. Was not overloaded.
Q. There was no deformation?
A. No deformation, no excess loading from the collision, which would have bent it.
Q. If the suspension link fails, is there any way to determine which way the vehicle would move?
A. Yes. If you define the suspension link that fails, you can define the direction the vehicle is going to go.
Q. The right suspension link.
A. If the right suspension link would fail, I would expect the vehicle, in this instance, to go to the right.
Q. Why?
A. Because it's going to -- if you are -- those links hold the axle in its normal position and its normal position would be allowed to move it to the rear if one of the links had failed. It would also allow the axle to roll if it was only one arm, because those -- the reason there's two in there is to control the roll of the axle, and the axle would roll and move somewhat rearward. That would put right steer into the vehicle, and the vehicle would go to the right.
Q. Would that occur in every occasion where there would be a failure of the right suspension link?
A. On a four-wheel drive '97 Dodge, yes.
Q. Would it have to be in four-wheel drive for that to occur?
A. No.
Q. So every time there might be a manufacturing defect that results in a failure of the suspension link on the right front side, the vehicle will move to the right.
A. In my opinion, it will move to the right, yes.
Q. Are there other engineers who ?? reasonably competent who can reach other conclusions about the method or manner of movement?
A. Based on the type like Mr. Kelsey, yes. If they understand the systems and they've done any vehicle testing, no.
Q. Have you ever had any dealings with Mr. Kelsey before this case?
A. I may have. I don't recall. I've had cases in St. Louis and vaguely think that I may have had one, but I can't say for sure.
Q. Well, is it your opinion that he's not competent to render opinions in this case?
A. Well, Mr. Kelsey has told us in his disclosure that there's an A-frame in this suspension, which tells me that he hasn't even taken time to understand what this -- how this vehicle is put together. That's incompetence.
Q. Hell, in your opinion --

A. In my opinion.
Q. In your opinion, was there anything else that he misstated --
A. Yes.
Q. ?? than his opinions?
A. Well, he sent a technician out to take pictures of the vehicle and made a statement that there's a problem in the rear suspension, and the technician didn't cover all the components of the rear suspension.
They're all there and there's nothing wrong in the rear suspension, and a reasonable person would conclude there's no rear suspension problem in this car.
Q. Were they connected? Were they connected to what's left in the frame of the vehicle?
A. No.
Q. How do you determine those portions of the rear suspension that you say are part of this vehicle are or were the parts that were associated with this vehicle?
A. The ones that are important are on the vehicle. So somebody would have had to take them off and put something else on, which is highly improbable.
Q. I agree, but it's possible, is it not?
A. Oh, yeah, it's possible.
Q. I mean, this vehicle was -- has been cut up and taken apart over a considerable period of time. Is that correct?
Q. Well, the practical world it didn't happen. Is it possible? Yeah, but nobody took those springs out and put other ones on.
Q. You have no idea what's happened to this vehicle since it was moved from the position that was displayed in the first page, which are Sub A and B of Exhibit 10 to the Kelsey deposition. Is that correct?
A. I have no idea of the exact procedures that were handled between the time of the accident and these pictures on down through when I saw the remains of the vehicle the other day.
Q. You said also that the frame was relatively undamaged.
A. Yes.
Q. Did you determine that purely by visual examination without aid of any technological device?
A. Oh, I think a tape measure could be considered a technological device. It's a measuring instrument. It's not precise, but it's within an eighth of an inch, and from an accident reconstruction standpoint, it tells me that the frame rail is basically undamaged.
Q. Okay. If you assume that the vehicle at question here was going to -- or suffered some type of failure, manufacturing failure that would cause it to lose steering control, what would be all of the things that you would look at to rule that in or rule it out?
A. Hell, let's start in front suspension with the steering. If a tie rod would separate, that would disconnect the steering wheel from the wheel being controlled by that tie rod. If you're driving 35 miles an hour down the road, one of two things adversely could happen but probably wouldn't, based on the polar moment of inertia of a spinning wheel at 35 miles an hour.

But if an adverse condition would happen, the wheel would either track around the steering axis by virtue of the drive force because we're in four-wheel drive in this instance, and it would rotate forward and, if it was the left front wheel, it would rotate and turn right; if it was the right front wheel, it would rotate and turn left.
If the tie rod were separated and it wasn't the drive force and you applied the brakes, the scrub radius would cause the vehicle's wheel to turn the opposite direction.
If the wheels did ??, either one, the operator can't get them back. They go to their steering stop and stay in that position.
So, if the operator were driving down the road and had a defect in the steering system and it caused him to start to the left, it would be impossible for him to turn it and get some right steer back in and go into that building straight.
He would have gone through the fence or he would have gone in at a very relative steep angle into the building, and you would have crush across the whole front of the vehicle.
Q. You say he would have gone at a relatively steep angle because that was his initial path?
A. No, because of the steer input caused by the wheel turning in that direction. It would be a significant steer input.
Q. So there's no control on the wheel from the operator's perspective. Correct?
A. On the two hypothetical that I gave you, yes, that's correct. There is no control, once the tie rod separates and once he causes the two things that could happen to happen. But, again, if you run a vehicle at ?? an hour and you do some testing on it, you will find that this type of vehicle, the wheel keeps on going and it's steered by virtue of the input from the other wheel.
And typically, if you're driving down the road at highway speeds and you drop a tie rod, you don't know it until you come to a stop, and that's typically when tie rods separate because, number one, that's when they see high loads and, number two, it's when the wheel can adversely react to the high loads.
Q. Is the wheel -- is the wheel at that point I'm going to use the term free-floating?
A. No. The wheel, if you disconnect the steering arm or the steering linkage from the wheel, the wheel is operating, number one, as a gyro as it's spinning, and it's being held in position by the geometry of the front suspension.
And, as you've all -- you've all gone into the supermarket, and when you steer your shopping cart to the left, the front wheel steers to the left, when you steer it to the right, the front wheels steer to the right. It's because of the geometry designed into those casters, and it's the caster in the caster that causes them to do that.
The vehicle has caster, and it has steering inclination that do those things.
Q. So if it strikes some object or something in the road, it can be deflected one way or another?
A. Not very easily because of the gyro effect of the wheels' spin.
Q. Can it be deflected?
A. If you hit it hard enough, it could be.

Q. Okay. The deflection, that would account for the movement of the vehicle in one direction or another. Is that correct?
A. But, again, if we deflect it, it goes to the full stopped position and the operator can't get it back. So if that takes him across the road, he's still going across the road, and in this instance it has to be a left steer condition.
Q. Other than the tie rod separating, what else would you be looking for to explain a failure, manufactured failure that would result in loss of steering control in a vehicle?
A. A suspension component that would disconnect to allow the axle to shift, which would basically allow the vehicle to be steered like your kid's wagon; it would pivot about the right side, and about the remaining component it would roll and shift.
Q. Have we talked about that with regards to the photographs we've reviewed on the suspension links?
A. Yes, sir.
Q. Anything else involved in that aspect?
A. Well, the -- yes. The important thing that's involved in that from a physical standpoint and an analysis standpoint is the condition of the wheel and tire that we're talking about, the left front wheel and tire.
Q. And you're basing your opinion entirely on the Photograph A and B in Exhibit 10 to Kelsey that you say shows the wheel in a normal position and fully inflated. Correct?
A. No.
Q. Okay. What else is your opinion based on about that condition of that wheel?
A. I'm basing that on the actual condition of the wheel, which is shown in the photos.
Q. I think I just said the photos.
A. Yeah, the wheel photos.
MR. HENDERSON: I think this is the right front wheel, Jim.
MR. CARTER: That's what we're asking.
THE WITNESS: The answer for the right front wheel picture, no, I'm not basing it on that. I'm basing it on the wheel pictures. I've got those marked.
MR. CARTER: Oh, the rim, the wheel itself.
THE WITNESS: Yeah. Particularly the one on the bottom.
MR. CARTER: Okay. Let's mark this.
(Exhibit No. 20 marked.)
MR. HENDERSON: The photograph that he's referring to is Photograph D from Exhibit 10 from Mr. Kelsey.
MR. CARTER: Can I see that, please.
THE WITNESS: Sure. In particular it shows the tire deflated and unseated.
MR. CARTER: That's the left front?
THE WITNESS: Correct.
MR. CARTER: That was a picture taken in January of 1998. Correct?
THE WITNESS: That's what I'm told, sir. I don't know.
BY MR. CARTER:

Q. Okay. Looking at what's been marked Exhibit 20, when were those photographs taken? Do you know?
A. I don't know. I don't know who took them.
Q. You don't know who took them?
A. No.
Q. Do you know where they were taken?
A. No.
Q. Do you know what's displayed in them?
A. What is displayed in them? I notice there are three tires and wheels, and there's the rear frame section of the subject vehicle or appears to be the subject vehicle.
Q. Okay. And what is the significance of what's displayed in Exhibit 20 to this opinion about --
A. Well, the photo that Exhibit 10 that we referred to shows the vehicle in the snow, I assume it's in December or it's in the '98 time frame, shows that the tire is unseated off the wheel on the left front of the vehicle after the accident, and then the photos that I handed you in Exhibit 20 show two tires and wheels that appear to be okay, and it show us one that has a big chunk of the inner rim knocked out, which would be consistent with what I see in the photo, which would be consistent with the tire being unseated and deflated as shown in the photos. It also is consistent in that the Photo 10 shows that the outer rim on the subject vehicle is -- appears to be intact, but you can't see the inner rim in this photo.
MR. HENDERSON: That's 10D you're talking about.
THE WITNESS: 10D, I'm sorry.
Q. So the photograph, as I'm looking at this, with one -- Exhibit 20 with one photo on the top of two tires and rims and the lower right is a tire and a rim, and you're saying that the photograph on the lower right of the tire and rim is what you believe displays the tire and rim that's shown on the left front portion of this vehicle in Exhibit 10.
A. I'm saying that, if that's the tire and wheel that is on the vehicle, it shows the proper type of damage for the collision, as I have analyzed it. The damage to the rim is in the right place. If the vehicle had gone in with the -- a steering defect with the wheel splayed at a left steer condition, we would see, number one, a totally different accident, but we'd also see different damage to the wheel. That's consistent with a wheel going into the hard corner of that body and loading the inner rim.
Q. And you have no idea where these tires or wheels came from, do you?
A. No, I don't.
Q. You're speculating that they're even related to this vehicle, aren't you?
MR. HENDERSON: Object. They were taken by Mr. Kelsey's technician, so --
Q. Hell, they were tires and rims that are out in this junk yard. I mean, is there anything that indicates they're associated with this vehicle? any record? any documentation? anything whatsoever?
A. No. All I'm dealing with --
MR. HENDERSON: Let him finish his question.

Q. Excuse me, that's a yes or no. Is there anything that you're aware of that reflects that these are in any fashion related to the vehicle in question? When I say “these,” I mean the tires displayed in Exhibit 20.
A. I made an assumption that those pictures were taken because those wheels and tires we??ssociated with this vehicle. I have no personal knowledge on those at all.
Q. Have you received any information from the auto salvage shop, from any deposition, from any source whatsoever that explains what happened to the tires and wheels that were originally on the vehicle in question here?
A. Yes.
Q. And what is your information about that?
A. Records I've reviewed show that three of them were sold.
Q. So, if three of them were sold, it would be pretty unlikely that the three of these in Exhibit 20 are three of the tires that were on the vehicle, wouldn't it?
A. Again, I have -- I can't tell you. All I know is that was supplied as evidence in this case, and I didn't even know who took the pictures.
Q. And you don't know whether, even if these are the tires and rims, whether they're in the same condition now as they were immediately after the accident; isn't that true?
A. No. ?? can say what I see is consistent with what I see in the photos.
Q. You have no way of testifying with any reasonable degree of certainty that what's displayed in Exhibit 20 is in the condition it was at the time immediately following the collision in 1997. Is that correct?
A. Well, again, I guess I don't understand your question. Generally speaking, there are three tire and wheels on this car that are inflated following the collision. Assuming that this is the vehicle in question, which I can't verify, and there's one tire that is not inflated, and those pictures are consistent with what the vehicle shows me.
I cannot relate those tires and wheels personally to this vehicle, as you have stated.
Q. You have no information that would allow you to relate them to the vehicle. Is that correct?
A. Only that they were taken by somebody and supplied to me as evidence in this case.
Q. And you have no information that allows you to affirm that they are in the same condition they were immediately following the collision in this case. Is that true?
A. Correct. I haven't measured tire pressures and things of that nature because I didn't see them.
Q. Hell, I mean, there was no examination that you're aware of done to any of the four rims in this case, was there?
A. Well, I don't know who took --
Q. Please.
A. If Mr. Kelsey's technician took those or if Mr. Kelsey was there, they thought they had something to do with it, I assume. And I don't know if they took tire pressures, did wheel examination or what. All I know is that, based on the record, Mr. Kelsey didn't look, his technician did, but his technician didn't do a complete job.

Q. Did anybody review or look at the condition of the tires and rims in this case immediately following or shortly after the collision in December of 1997?
A. I don't know.
Q. Are you aware of anything that anybody did to make those measurements or do that analysis?
A. No.
Q. Are you aware of anybody that did anything to inventory this truck immediately after or shortly after the collision in 1997?
A. No.
Q. All right. Anything else with regards to this suspension component other than what you've told me?
A. Front, rear or both?
Q. Anything else.
A. We haven't talked about the photographs that show positively there's nothing wrong with the rear suspension.
Q. Okay. Why don't we do that now. I'll come back to that. I want to ask you what else you would look at.
You told me now you'd look at the tie rod separation, suspension component. What else would you look at if you assume that there was some type of manufactured part that failed that would result in loss of steering control in a vehicle of this type?
A. I don't believe we talked about what I'd look at. You asked me what would happen if certain things happened, and I told you hypothetically what would happen to this type of thing if, in theory, those things had happened, and I looked at those by virtue of examining the path of the vehicle and the damage to the vehicle.
Q. Okay.
A. That in and of itself tells you ?? nothing happened to this vehicle.
Q. Okay. I mean, is there anything else that you, to a reasonable degree of engineering certainty, believe should be evaluated to determine whether or not there was something that happened to cause steering failure, if you assume that there may have been some type of manufacturing defect that was such a cause?
MR. HENDERSON: Do you understand the question?
A. Again, I don't understand your question.
Q. Okay. Let's assume -- I'm asking you to assume that you've been asked to evaluate this vehicle and you get ahold of it and you're asked to tell us whether or not there was some type of manufacturing defect that occurred that could account for steering loss of control.
A. Yes.
Q. What would you look at? I think you've told me tie rod separation, the suspension component. What else?
A. No, I didn't tell you that.
Q. Okay.

A. I told you I'm going to look at the evidence that's ??, and that's what we've got in front of us on this table. You've got my file, and I've told you that the whole thing was, in a nutshell, based on the performance of the vehicle that it was being steered.
Then you asked me hypothetically what would happen if a tie rod separated, and I told you. And I told you what would happen if it had an adverse effect, because, if a tie rod separated, it might not affect the control of the vehicle at all, and that's based on my experience in testing of the vehicles.
I have not tested or driven this Dodge with a tie rod separated.
Q. Okay. Let me ask the question, since apparently I'm miscoimmunicating. Assume that you're asked to look at a vehicle in all respects like this one after such an event and you're asked to consider that there may have been some failure to the steering component.
What is it you would look at to rule in or rule out the failure of a component to the steering system?
A. Just what I did in this case. I'd look at all the photos that are available. I'd look at the accident facts, and I would try to get a look at the vehicle. the vehicle components that are available and, based on ray engineering experience, tell you whether or not I could or could not make an engineering conclusion of what happened to this vehicle,
Q. What are the components you would look at?
A. What's available.
Q. I'm asking you what components would you, as an engineer, look at, assuming you had the whole truck to look at? What would you look at? I would like an inventory of all those things you would look at.
A. I'd look at all the control systems, sir.
Q. What control systems?
A. I'd look at the accelerator controls. I'd look at the steering controls, and I'd look at the suspension attachments. I'd check the brake system. I'd check the wheels and tires.
Q. So you gave me a list under control systems and you said steering, acceleration, suspension, brakes, and wheel and tire. Is that correct?
A. Yes, sir.
Q. Anything else under control systems?
A. Ho. I think that covers it.
Q. Okay. Those would be all the systems that you would look at to try to evaluate whether or not a vehicle of this type could have had a failure in the steering system. Is that right?
A. Assuming that we're talking about accident causation yes.
Q. Well, I'm just asking you to tell me what parts of the vehicle, in all respects like this one, you would look at to try to rule in or rule out failure of the steering system or loss of control of steering as a cause of the collision.
A. Okay. And I just said that's accident causation, and I would do that.
Q. Okay. Let's start at the bottom. Wheel and tire, what would you look at at the wheels and tires?
A. Check the condition of the wheels and tires.

Q. And how would you do that?
A. Visually.
Q. And what would you be looking for visually?
A. Primarily, if they're on the vehicle, I'd be looking for evidence that the tire deflated before the accident. I'd also be looking for unusual wear patterns on the tire, which would indicate that there was a possible alignment condition in the vehicle.
I'd be looking for flat ?? on the tire to indicate whether or not there was a brake application, because I might be there five years after the fact and skid marks would be gone.
Q. Okay. Anything else?
A. Well, I'd check, you know, in terras of whether the tires and wheels were all the same size.
Q. As opposed to a mismatch?
A. Yes.
Q. Anything else?
A. That would be it.
Q. In this circumstance, there was no one who did or was able to evaluate the wheels for mismatch. Correct?
A. I don't know that.
Q. Are you aware of anybody that was --
A. No.
Q. -- Did that or was able to do that?
A. I'm not aware of what people did to the vehicle before I saw it, except for the stuff I have in front of us.
Q. To your knowledge, no evaluation of mismatch occurred with regards to the tires shortly after the accident or before the car began to be cannibalized. Is that correct, sir?
A. I ?? know that.
Q. I'm asking you to your knowledge, sir. That's all.
A. Well, to my -- I don't know if the police officer went around and saw anything unusual or looked at the tires and wheels or not.
Q. Have you had any indication that he did that?
A. No, but I would expect he looked at the vehicle. How close he looked at the vehicle -- we know he didn't take photographs and so forth, but I'm sure he looked at the vehicle.
Q. Is there any documentation, any evidence, any testimony that reflects that that happened in this case?
A. Again, no, I haven't seen any. No.
Q. And with regard to flat spots on the tire, would you agree that nobody did any evaluation of the tires, when they were available for inspection, to look for flat spots on the tires?
A. Flat spots on the tires here would be irrelevant because I understand it was snowing and the guy was in four-wheel drive. So we are not going to have flat spots. You were asking me a general question. Now you're into specifics again.
Q. I'm asking if anybody did any evaluation looking for flat spots on tires that you're aware of.

A. No.
Q. Okay. Would you agree that nobody did any looking of the tires to see if there was any unusual wear pattern?
A. No, but the photographs of the vehicle would indicate that there isn't anything that's going to cause a problem per se, based on what is on the vehicle, assuming, again, that this is the vehicle, which I don't know.
Q. Do you often give testimony about conditions of tires from photographs alone?
A. Yes, if that's all that's available, I do.
Q. And what tire photographs would you be looking at to render opinions in this case? The ones we've just talked about in Exhibit 20?
A. Basically my opinion is -- how do I want to say -- the left front wheel and tire in this particular instance, as it appears on the vehicle in the vehicle photographs, is consistent with my findings relative to this accident reconstruction and vehicle analysis.
Q. Okay. With regards to the brake system, are you aware of anybody looking at or evaluating anything having to do with the brake systems in the -- on this vehicle?
A. Only that the comment was made that there were no brake lights.
Q. Did anybody look at the vehicle to evaluate the brake system in any fashion?
A. Not that I know of.
Q. Okay. Is that something, in your opinion, that could have been evaluated at the time the photographs were taken in January of 1998?
A. Possibly.
Q. Is that something that could have been evaluated before the vehicle was removed to the auto parts location where you found its cannibalized remains?
A. Again, I don't know what's happened. It could have been done immediately following the accident.
Q. If there was no change -- if there was nothing done to the vehicle before it was removed to Fierge Auto Parts in Quincy, would you have been able to evaluate the brake system?
A. Possibly.
Q. And the evaluation of the brake system would have been to do what? What would you have been looking for?
A. In this instance, I wouldn't ?? paid much attention to the brake system.
Q. I understand, but please humor me. I'm just asking so I understand what it is you would look at in a general sense.
What would you look at in the brake system to try to determine whether or not the vehicle suffered a loss of control to the steering mechanism?
A. Nothing.
Q. Okay. What was it -- why do you say nothing now when I asked you earlier and you said --
A. Hell, because the brakes are not related to the steering system.
Q. Why would you look at the brake system then?

A. In this particular instance, I probably wouldn't spend much time. I might not even have evaluated the brakes.
Q. If the brakes had worked --
A. The brakes -- we're on slippery pavement. The brakes on this thing are only relative to what's the operator doing. If he had applied the brakes with any force at all, assuming four-wheel drive was required, he'd have just been sliding.
Q. How do you know we were in slippery conditions?
A. The operator said he was in four-wheel drive because it was slippery, and the police report says it was snowing and it was December, you know.
Q. Other than the fact that the police report reports it was snowing and it was December, do you have any indication of the condition of the road?
A. No.
Q. You mentioned suspension system. Have you told me everything that you would look at with regard to the suspension system to try to rule in or rule out whether or not a loss of control would occur to the vehicle that could account for or be a cause of a crash?
A. Well, we have gone through all the photographs that I have taken and that I have referred to, and I have given you my best explanation that I can right now to show you why the suspension wasn't involved.
Q. Okay.
A. So that's the job I have done here. Another vehicle, another accident, there might be more or less to determine.
Q. Are there other aspects to this suspension system that you haven't talked to me about?
A. No. We haven't discussed very long, but the other link and we just went by it, but there is a track bar in this suspension that controls the lateral movement of the axle.
Q. And where is that located?
A. That's across car. It's attached to the left frame and it's attached to the right side of the axle.
Q. And was that intact at the time of your evaluation of this vehicle?
A. No.
Q. Has it intact at the time of the collision?
A. Yes.
Q. And how do you know that?
A. Because the vehicle had not exhibited any problems by virtue of what the driver defined in his vehicle.
Q. Would sudden failure of the track bar result in loss of control in the manner described?
A. No.
Q. Could it?
A. Yeah. Yeah. Lots of thing could cause it.
Q. And you've never had any opportunity to look at or evaluate the track bar because it doesn't exist anymore. Is that correct?

A. I did not see the track bar. I didn't look real hard for it. I looked at the attachment on the frame, which was still there, and there's a photograph in the photographs showing the track bar, and it shows it's not deformed.
Q. You have a photograph of the track bar?
A. Do I have a photograph? There are photographs in the file material I have. I have not taken a photograph.
Q. Are you saying the track bar is present and in the condition it was at the time immediately following the occurrence?
A. Yes.
Q. Can you show me where that's displayed.
A. Where's Kelsey's stack? Yes, it's Exhibit S in Deposition 10.
MR. HENDERSON: Deposition Exhibit 10 to Kelsey's deposition.
Q. May I see that, please.
A. I'm not sure. It may have been referred to as a drag link by Mr. Kelsey, but I'm not sure because I wasn't there for his deposition. But he used the term “drag link.”
Q. And you say that is the track ??
A. Yes, sir.
Q. Is that -- that's just -- that's a piece of equipment laying on the ground.
A. Yes.
Q. Did you see it when you made your inspection?
A. No.
Q. Do you even know whether this is associated with this vehicle, what's displayed in S?
A. I can only tell you it's a Dodge track bar. I can't tell you that it belongs to that vehicle or anything, sir.
Q. And you have no way of telling whether it's in the same condition now as it was at the time immediately following the occurrence. Is that correct?
A. No, but it looks normal.
Q. Well, has it been severed from its normal connections?
A. It's been unbolted. It's been disconnected.
Q. So you would not be able to evaluate the condition of that part or that product as it existed at or immediately after the time of the collision. Is that correct?
A. No. I can make conclusions based on that photograph. ?? I have to assume that it was on that truck if we're going to relate it to this accident. If you take that out of the equation, then I can't make that determination.
Q. Well, do you have any evidence before you, any testimony, anything linking the part with the vehicle in question, any documentation showing when that part was removed, who removed it, under what circumstances?
A. No. We've talked about that. The answer is no.
Q. Do you have any indication of how much of that product was deformed or altered in the process of removing it?

A. Yeah. The Hulk couldn't take it off, so nobody would hurt that part. It's a pretty substantial bar. Nobody hurt it taking it off.
Q. Do you know what method was used to remove it from its original location?
A. No.
Q. And you would agree with me that there's been no fatigue analysis done of what's ever left of this part, assuming that's the part displayed in Picture S. Correct?
A. No fatigue in that part. It's whole. The part's not broken.
Q. Does it show whether it's been broken at one end or the other?
A. No. It shows that it's been detached at both ends.
Q. Does it show how the detachment occurred?
A. It appears to be unbolted. You would normally take it off with a wrench. Whether it's an air wrench or -- it wasn't cut off with a cutting torch.
Q. Could it have broken off?
A. No, does not appear to be broken off.
Q. And that opinion is solely from this Picture S. Correct?
A. That's the only picture -- well, there may be another picture in there, but I knew -- I was pretty sure there was one in Mr. Kelsey's.
Q. Okay. And then other than the track bar, have we now talked about all those things involved with analyzing the suspension?
A. No. We've got springs involved in the suspension.
Q. Okay. If one or more -- if a spring failed, would that account for loss of control of the vehicle similar to what was described in this case or could it?
A. Very possibly, but it shouldn't.
Q. Okay. Did you have a chance to evaluate the springs in this case?
A. Yes, sir.
Q. Were they all located with the vehicle in their original condition and position?
A. No.
Q. Were they located even with the vehicle?
A. They were in the back seat area of the vehicle, the front springs were. The rear were attached.
Q. Is there any way of knowing that the springs that you observed located in the back seat of this junk car were the springs associated with this vehicle?
A. No.
Q. Is there any way for you to know when they were taken off or who took them off, assuming they were associated with the vehicle?
A. NO.
Q. Are there only four springs on this vehicle?
A. No.
Q. How many springs are there?
A. Probably hundreds.
Q. Okay. Did you look at all of those?

A. No.
Q. Which of the springs that you would look at would be the ones that would help assist you in determining whether or not the loss of control of this vehicle occurred?
A. The four suspension springs.
Q. And so there were two springs you identify as suspension springs located in the back seat of this cannibalized vehicle. Correct?
MR. HENDERSON: I would just have a continuing objection to use of the term "cannibalized."
A. There were two coil springs in the back of the cab. I photographed them. I show you the part numbers on the springs. They are still there. There were two leaf springs on the rear suspension still attached to the vehicle. I don't know anything about them other than that's what I saw when I was at the vehicle.
I know that the four springs are in the vehicle following the accident, again, assuming that these photos are of the subject truck, because all four springs are still on the vehicle following the collision when these pictures are taken.
Q. How do you know that -- these pictures being the ones from January of '98?
A. No. This picture -- I'm not sure of the origin on this picture, but I know it's relatively close to the accident. But it shows the left front spring in the picture still in the vehicle, although out of position, which is consistent with the collision.
Q. Yes.
A. And it shows the rest of the vehicle in normal car position indicating the springs are in place. The car would not look like that if the springs were out.
Q. Well, you would agree, would you not, that the photograph you're looking at, and I will tell you that -- strike that.
What you're looking at here shows a displaced spring. Correct?
A. Yes.
Q. You didn't -- you would have to go and evaluate that spring and look at it to determine whether or not it failed as a result of the collision or it failed precedent to the collision; isn't that true?
A. Your question assumes a failed spring, and I don't see a failed spring.
Q. I'm asking, don't you have to do an analysis to determine which came first, whether it failed as a result of the collision or it failed as an antecedent to the collision?
A. I didn't see any failed springs in this case.
Q. Did you do any examination of the spring as it was located in the vehicle at or shortly after the time of the accident?
A. No. I told you they were in the back of the vehicle.
Q. Assuming those were the ones. Correct?
A. That's the springs I examined, yes. They were fine.
Q. But to do an analysis of what happened at the time would require you to analyze the vehicle as it existed at or shortly after the time of the collision; isn't that correct?
A. No. That picture tells you all you need to know about springs. Springs didn't break.

Q. Well, what is it that you would see in the picture that I'm looking at that would show if the spring was damaged prior to the accident that's not shown here?
A. You'd see a broken spring, and you'd see two pieces of spring. That appears to be a whole spring.
Q. Well, would others that look at this picture have differing conclusions?
A. Well, again, do we have to discuss that? Certainly we know they do, but knowledgeable people, no, would not.
Q. Could the spring -- how does the spring -- how would this spring have become detached from its mounting without breaking?
A. The spring is basically held in place by its seats and its loading in the vehicle. It's not captivated, per se. It isn't bolted on the ends like a leaf spring. It's held in place by virtue of the suspension components keeping the axle in place and keeping the axle moving in its designed intent.
Q. So, in other words --
A. Fact of the spring being in place is also another nail in the coffin, if you will, to say that there wasn't anything wrong with the suspension because the spring is there following the collision.
But now that we've knocked the axle back and taken the wheel back into the cowl area, the bottom part of that spring, which set on top of the axle, has moved back probably a foot or 15 inches, and it's pulled it out of its upper spring seat, and you're looking at the top of the spring.
And we do know, following the accident and looking at the remains today, aga..., assuming it's the proper truck, that there's nothing wrong with where it was sitting at the top.
Q. The spring would have to be properly seated to stay in its location. Is that correct?
A. I would have to be in the vicinity of the spring seat. It might make noise and might give you a different trim height if it's not properly seated, but it's going to stay in there. It's pretty well-located. There's a big cone section that holds that spring to locate it.
Q. If the spring is improperly seated, could it fail?
A. Maybe.
Q. Okay. The only way to determine whether or not it was properly seated would be to look at the vehicle at or shortly after the time of the occurrence.
A. No. You talk to the operator about the vehicle, how it was operating, and if it was improperly seated, it would exhibit -- generally it would exhibit a noise.
Q. Not always. Correct?
A. It would exhibit some problem if it wasn't properly seated.
Q. Okay. Is there anything else about the suspension system that you can tell me that you would look at other than what you've discussed with me?
A. Your questions leave me out on the limb.
Q. No. I'm just wondering, we went down this idea, you said different control systems and --
A. Let me ask you this. Did I talk to you about the rear suspension?

Q. You said that, and I said we would come back to that, but other than that, we haven't discussed that.
A. Your question just said suspension systems. Again, you went back to the whole car. That's the problem I have. You get to one spot and you open up the whole world, and then you want to come back again. So I'm trying to stay with you.
Q. I'm just not very bright. So I'm just struggling to do this.
A. Well, I understand this car completely, so I'm trying to be as best help I can for you.
Q. I appreciate that. Has there anything else in the suspension system?
A. Yes.
Q. What else?
A. The rear suspension exhibits today the fact that it was all intact and didn't have any problems.
Q. What is it about your observations that allow you to conclude that the rear suspension was all intact at the time of the collision?
A. Well, the rear springs are attached at their front and rear attachments properly today, and the center bolt is located in both springs, which indicates that the axle was tightly fastened to the spring.
Q. The axle's gone?
A. Yes.
Q. Do you have any idea of what was moved or removed in the process of taking the axle out?
A. Yes.
Q. What?
A. The U-bolts were taken off.
Q. Did you see that done?
A. No.
Q. Did you see how they removed the axle?
A. No.
Q. In removing the axle, can they damage or alter the springs or their center bolts?
A. They could if they were careless.
Q. There's no way for you to determine or say that those weren't damaged in some fashion during removal of the axle?
A. Yes. They're not damaged.
Q. Do you know they're the same springs and center bolts that came with the equipment originally?
A. Yes.
Q. How do you know that?
A. As a practical matter, yes.
Q. No, I understand --

A. Because I know what's involved to take these things apart, and I know how junk yards operate and I know, as a practical matter, nobody is going to take them apart and put a new center bolt in there. Has I there to watch them? No.
Q. Right.
A. But have I worked on springs? Yes.
Q. Okay. And you have no way of saying that somebody has not altered or tampered with those springs before you observed them. Is that correct?
A. No, that's not correct. I'm telling you, as a practical matter, I've got enough mechanical experience to know that they weren't altered. Nobody took those springs off and put them back on. Those are the springs that were on ?? vehicle from day one. What surprised me is they weren't taken off and sold, because they're fine.
Q. Yeah. And you're assuming that nobody would have tampered or removed them or replaced them with something else. Is that correct?
A. I'm using my engineering and mechanical judgment to tell you that that didn't happen.
Q. Okay.
A. But I wasn't there.
Q. Okay. Can you say that they are in the same condition today as at the time of the occurrence?
A. No.
Q. And you cannot say that their connection point to the axle or the rest of the body of the vehicle is in the same condition or position it was at the time of the occurrence. Correct?
A. No.
Q. Was that correct?
A. That's correct.
Q. All right. You mentioned acceleration. What about the acceleration system would you look at?
A. Well, we were talking about general accident investigation, and several cases that I have looked at there has been unwanted acceleration claims made, and if it's -- I'm just doing an accident review where I don't know anything about the claims, I review all the control systems and I check the throttle control and the accelerator control, if I can, to see if it stuck or if it's working properly.
Q. Okay. Were you able to check the throttle control or accelerator control in this case?
A. No, sir.
Q. Was anybody? Did anybody ever do that, to your knowledge?
A. No. I don't know anything anywhere along in this thing there was ever a complaint of it, but, no, I don't know that.
Q. Well, I don't know whether there was a complaint or not. I'm just merely asking if the system was evaluated for some type of defect that might have been a cause of the collision.
A. Well, the accelerator control wasn't a cause of this collision. If you get back to this accident, the accelerator control has nothing to do with this accident.
Q. Okay. Why would that be?

A. Well, because we're running at what the operator says he was running. He doesn't say that the vehicle ran away with him and he couldn't control the vehicle. He just said that the vehicle went over to the left and he -- well, I don't know.
He kind of vacillates, depending on the records that he talks about, but there's no comment about, you know, that I had problems with the throttle, I couldn't stop the car. There's just nothing to indicate -- there's no indication that this vehicle's wheels were spinning.
If the vehicle's wheels were spinning, he would have had difficulty making any correction to the vehicle and, again, we're in slippery weather, which, again, I don't know, I wasn't there, but I would assume, if it's operating at four-wheel drive, then I've got to gingerly operate on the throttle because the only reason I've got it in four-wheel drive is because I spin easily with my rear wheels if I'm only in two-wheel drive. There's no other reason to run the four-wheel drive.
Q. Okay. The throttle control or acceleration control in this vehicle could never be examined at this point in time. Is that correct?
A. That's correct.
Q. That's because it's been removed and destroyed or removed. Is that correct?
A. You know, I didn't even look to see if the throttle was still in the car, as far as the accelerator pedal. Obviously the engine is gone and so is the -- I don't know if this is throttle body or direct fuel injection. At least the air valve was gone with the engine. So you couldn't evaluate the engine end, and I don't remember the throttle cable being in there.
Q. Okay. And what about -- was there anything else about the acceleration system other than the throttle control or acceleration control?
A. Well, again, we observed the condition of those. Might look at the pedals. I have seen bent accelerator pedals because the operator had their foot on, they said the brake, but it was on the accelerator pedal on accelerator claims.
Q. Okay. Then you mentioned steering. What else about the steering system did you look at?
A. I think we covered the steering, didn't we?
Q. No, I don't think so. I might be ?? but --
A. Well, again, to cover the steering, assuming that it's all there and we can look at it, I would look and verify the fact that all the components are attached. I would probably turn the steering wheel to see, depending on the amount of crush and the particular damage, to see which wheels were turning and which ones were not turning.
Q. Anything else?
A. Again, in a general inspection, assuming everything is there and I'm the first one on the accident scene and I've got the opportunity to look at the pristine vehicle, we've pretty much covered everything that goes on.
Q. Okay. What components would you look at on the steering?
A. Essentially, if I'm able to, I would turn the steering wheel and see if the wheels turn. If that happens, that's generally it. So I'm looking for continuity in the steering system. If I don't find

continuity in the steering system, then I go in and find out, if I can, why I don't have continuity.
Q. What would cause lack of continuity?
A. A broken part, a disconnected part.
Q. What type of part? Which parts?
A. Steering wheel could come off the steering shaft. Steering shaft could come off the intermediate shaft. If we're talking about a Dodge, this has an intermediate. It's a front steer vehicle. Steering shaft could come off the steering gear. Steering gear could break. The Pitman arm could come off of the Pitman shaft of the steering gear. The linkage could disconnect from the steering gear.
In this instance, it's a pretty simple linkage, it's Just a two-rod -- you have a right tie rod and a left tie rod.
Q. Okay. None of those -- first off, nobody turned the wheel, the steering wheel in this case to determine if there was continuity in the wheels, to your knowledge, did they?
A. I don't know. This hypothetical that we just went through rarely happens.
Q. I understand. It can happen, can it not?
A. Oh, yeah. I've been there, you know, in some instances because particularly GM has been there based on the report of the accident. I've also been brought in by police departments to evaluate vehicles where the operator is trying to claim a problem with the car, and they want somebody early on.
Q. They want somebody --
A. I've had that several times.
Q. Excuse me. They want somebody to come in early on to evaluate?
A. Evaluate the vehicle and to see if there's criminal charges available or whether there's a vehicle defect.
Q. And it's important to evaluate the vehicle early on from the collision because that's when you're going to find the condition of the product as close to what it was at the time of the occurrence. Correct?
A. That's the optimum.
Q. Right.
A. That's always the best.
Q. Right.
A. Like having one through ten and having all the numbers. But if you've got one through ten and one of them's missing, it's pretty easy to figure out there was a sequence, and you can tell which number is missing. That's why people like me have a Job; because the hypothetical theoretical thing that you're talking about never really happens.
Q. Did anybody, to your knowledge, turn the steering wheel to see if there was continuity in the wheels as you described it in this case?
A. Yes.
Q. Who?
A. The driver.

Q. When did he do that?
A. Just before he hit the building.
Q. Okay. Your assumption is that he voluntarily turned the wheel before he hit the building. Correct?
A. No.
Q. Well, you're trying to state an opinion that he did that.
A. I'm stating he did it. I don't know if he did it voluntarily, subconsciously or whatever. All I'm telling you is the vehicle had steer and the vehicle responded to steer. I don't know the condition of the driver. He could have been asleep and done it in his sleep.
Q. Could the response to steer be mimicked by striking some object that would divert the vehicle?
A. In this particular circumstance, no; in some instances, yes.
Q. And so it would be important to catalog or inventory what's present at the accident site at or near the time of the occurrence. Correct?
A. Yes.
Q. And, in this case, it would have been advisable to meet with the police officer even after the occurrence and while it was still fresh in his recollection, go out and review what was present, what he observed. Correct?
A. Again, if we take all accidents and all situations in the perfect situation, yeah, we like to do that.
Q. There was no evaluation of whether or nor there was a broken part in some part of the steering mechanism, was there?
A. Yes.
Q. What was evaluated?
A. I did that,
Q. What did you evaluate?
A. I evaluated all the facts of this accident and the condition of the vehicle.
Q. What did you look at? What parts did you look at to evaluate the parts of the steering mechanism?
A. I looked at the photos of the vehicle that were supplied by you. I looked at the actual vehicle. And I've studied the path of the vehicle and looked at the police report, and I've heard the description of what the driver said he was doing, and with all those things, you can put the puzzle back together. There'?? enough information there.
Q. Okay. Show me what photos you looked at that you say that you evaluated the condition of any parts of the steering system.
A. Those I didn't mark. Me got the building damage, and I need the police report.
MR. HENDERSON: Police report is probably in the black binder.
(Discussion off the record.)
(Recess taken.)
BY MR. CARTER:

Q. So did you find some information that would support your statement that the -- you observed or your observations included observing the steering mechanism?
A. Yes. Basically it's based on the police report, which has the eyewitness statement on it. It also includes the deposition of the driver. And then the best description I have is the letter I wrote to Mr. Henderson on the 15th of May. It's pretty well detailed in there.
Q. So the police report, which includes the officer's recitation of what the eyewitness observed.
A. Yes.
Q. And that the, quote, Witness said he was following Unit Ho. 1 when it drove into a building. Witness said he saw no brake lights, and it appeared there was no control loss on the vehicle, unquote.
A. Right.
Q. What is significant about that to you?
A. The vehicle is not making any significant steer lane changes. It is all gradual. It's being driven in. If there had been a sudden steer input by virtue of a separation in the steering system, the vehicle would have veered sharply. Hot only would the path have been different, but the eyewitness would have seen a vehicle do a veer to the left, assuming that's obviously the direction the malfunction would have to cake it.
There's nothing that's going to cause just the vehicle to be driven into a vehicle or appear to be driven into a vehicle and have a manufacturing defect contribute to that.
MR. HENDERSON: Into a building. You said “vehicle driven into a vehicle.” Do you mean --
A. Oh, I'm sorry. Into a building.
Q. Did the police officer indicate that the -- his description was reflective of someone not gradually drifting off one way or another?
A. Again, I don't recall -- I think we have the police officer's deposition, and I don't recall the content of it, but there was nothing outstanding in there ?? indicated anything other than what the police report indicated.
Q. Okay.
A. As I recall, he was -- all his testimony was derive on refreshment from the police report, because I ?? he said he didn't recall it. But don't hold me to that. It's been awhile since I looked at that.
Q. Okay. So it would be the fact that the police offi?? clearly doesn't say in the police report that he suddenly veered that you say that that helps you sa?? there wasn't a steering problem. Correct?
A. You know, all -- the totality of all these inputs are what get you there. The vehicle, the police report, the eyewitness, the accident scene, the description of the vehicle path, the actual vehicle path.
Q. Okay.
A. It isn't any one item; it's the combination and that's why -- those are the pieces of the puzzle that allow you to get the complete picture.

Q. Let's talk about the pieces of the puzzle. Let's talk first about the accident scene. Where is your information about the accident scene?
A. I have a photo of the building, and I have the police officer's description of Washington Street --
Q. What is it --
A. -- And the direction that he's traveling.
Q. What is it about the police -- so, again, we're back to the police report. Are you saying this statement, quote, Driver No. 1 said he was northbound on Washington when his truck drove into the building --
A. Yes.
Q. -- Driver 1 said his truck was in four-wheel drive and he was traveling about 35 mph?
A. Yep.
Q. Okay. What does that tell you about the accident scene?
A. Well, number one, it typically tells me, based on all the police, reports I've listened -- or reviewed over the years and talked to policemen, as we've had policemen testify in litigation, if there's a vehicle problem, and even if there isn't a vehicle problem, the operator comes out stating there's a vehicle problem. In the first place, he didn't do that here.
Q. Okay. I guess all he said was his truck drove into the building. Is that normal operation of a motor vehicle to drive into a building, in your experience?
A. If the driver is inattentive, it happens frequently, yes.
Q. If a driver is attentive to what he's doing, is it normal for a truck to drive into a building?
A. No.
Q. Okay. So assuming he was attentive, that would imply that there was a problem with the vehicle, would it not?
A. No.
Q. Oh, okay. What else besides the police report gives you -- are you able to say that you've evaluated the steering mechanism and find no failure in it?
A. It's through a careful detailed analysis of the vehicle and the vehicle photos, and like I said, it's best described in that memo to -- it involves several photos, many of which we've already covered and I've given you the individual things. But that letter kind of puts it together to show why there had to be steering.
Q. Well, that's your May letter. May 15, 2003.
A. Yes.
Q. Where in that letter do you point out that you did any examination of any of the components of the steering system?
A. I didn't examine the components of the steering system.
Q. Okay.
A. At the time there weren't any. The steering system existed on the vehicle following the accident, and it obviously has been disassembled and parts have been whatever. I don't know if they were sold, thrown away or whatever.

Q. No way to evaluate the steering system to determine whether or not there was some type of defect inherent or present in the steering system that might or could account for this vehicle's action. Is that correct?
MR. HENDERSON: Objection, asked and answered.
A. No.
Q. What do you mean no?
A. You do it based on the evidence you have, and I've told you the best I can why that steering system was intact and working.
Q. I understand.
A. And I've told you what would be if we had assumed some of the defects had occurred that you want to assume that are in there, and none of those facts fit the situation.
Q. Sir, was there any analysis done of anything having to do with the steering system of any of the component parts of that at any time prior to your testimony today?
A. No.
Q. Okay. And --
A. Mr. Kelsey didn't do an adequate one either.
Q. Would you agree with me that there were no components available for evaluation for quite a long time. looking back in time from todays date?
MR. HENDERSON: Components of the steering system is what you're asking?
MR. CARTER: Correct.
A. The physical components I have not seen and, to my knowledge, they haven't been available for a while.
Q. And the engine and transmission were removed from this product. Is that right?
A. Appear to be, yes.
Q. And, when they were removed, the steering components would have been damaged or altered. Is that right?
A. No.
Q. They would not?.
A. It would be altered but they wouldn't be damaged.
Q. They'd be altered?
A. Yeah. Well, you can see the ones that are damaged because they've been cut with a cutting torch but --
Q. The steering system now I'm asking. What is it about --
A. The steering gearbox appeared to have been unbolted from the frame rail, and it was probably a salvageable item, although I don't think there's any record of it being sold. It has obviously been removed. It wasn't cut off with a cutting torch.
Q. You have no idea when this steering gearbox was removed?
A. I do not.
Q. It would have been -- if someone had been able to look at and evaluate the steering gearbox at or shortly after the time of the occurrence in question, they could have ruled out any failure in one or more of the components of that gearbox. Is that correct?

A. Yeah. It depends on the --
Q. That's all.
A. -- Where you want to go. if we just had a mechanic, he could come through and tell you this is the way the part is made and this part is normal. This is a gearbox that appears to work right.
Q. Well --
A. But to evaluate an accident and so forth, you know, that's why we do our things special. We know that things are not going to be always there, and most of the time from my standpoint they weren't always there; many times they were altered by people.
Q. Would you agree with me that it's been General Motors' position in litigation that even minor alteration to steering components result in undue prejudice to General Motors in its ability to evaluate product liability cases? This is based on your experience, sir.
A. Based on my experience, I can't agree with that because I've testified in many steering cases where the stuff was altered and thrown away.
Q. And you've testified what?
A. Testified that this steering system still functioned properly based on all the rest of the circumstances that we're dealing with.
Q. Has General Motors ever taken a contrary position, to your knowledge or understanding?
A. I don't understand your question.
Q. Has General Motors ever taken a position, whether you were on the case or otherwise, if you're aware of, that's contrary to what you just said?
MR. HENDERSON: I don't think he understands what you mean by what he just said. He said that the -- his opinion in those cases were that the steering was working properly. I think you're asking him whether he knows whether GM ever took the position that the destruction of evidence harmed General Motors.
MR. CARTER: Okay. I'll live with that question.
THE WITNESS: Yes, they have taken that position. I know that.
BY MR. CARTER:
Q. And have you done so on their behalf?
A. I have been involved in the analysis and in adding to why it is necessary or not necessary.
Q. And what were the circumstances where -- that you're aware of where General Motors did that?
A. It was in claims where General Motors was trying to evolve on the fact that somebody had deliberately destroyed the evidence or changed the evidence, particularly after the lawsuit was generated, but I can also tell you, in my experience, in most of the cases the Court overruled, and we went ahead and had to go and proceed anyway.
But one specific case I can tell you is in New York where we were dealing with a Corvette where we couldn't see the total condition of the steering arm that he had in his hands, that he proceeded to cut and destroyed and then throw apart -- throw away some of the parts. We still proceedeo anyway because the Court didn't buy the spoliation of evidence situation.

And that's obviously when you're in litigation and you throw something away, that's one thing. Where you've just got a general claim and you don't know what the claim is, it's a horse of a different color.
Q. So the position of General Motors in the case you just referred to was that the partial destruction of a steering column resulted in prejudice to General Motors such that they would be unable to establish whether or not a defect existed.
A. It wasn't a steering column. I can't remember if it was the tie rod or if it was a relay rod. It was in the steering system; it was not in the column.
Q. In any event, it was some alteration that had occurred to the product after the event in question. Is that correct?
A. Yes.
Q. And in that circumstance or in other similar circumstances, have there been occasions where such an alteration resulted in loss of the part in question or complete destruction of the part in question?
A. Yes.
Q. And in those circumstances, was it your experience that General Motors took the position that such failure or loss precluded them from being able to adequately defend themselves because they could not reasonably determine whether or not a defect existed?
A. Yes, there were those circumstances where the lawyers took that position.
Q. And you were part of the group of witnesses that helped address that issue on behalf of General Motors?
A. I would help address the issue, but I would be -- if I was involved in helping them address that issue, I would also be the one that would follow it through and, if the Court denied the motion, then we proceeded to trial.
Q. And was your testimony in your experience permitted because the material was in some fashion destroyed?
A. No. I was permitted to testify because of my expertise.
Q. Where in your report of May 15, 2003, do you specifically refer to any evaluation or examination of any of the components of the steering system?
A. We've covered that.
MR. HENDERSON: I think it was asked in almost those same words.
Q. Well, okay, I'm trying to understand here. You said that the police report and your report of May 15 cover all the bases for your evaluation of the components of the steering system. Did I understand that to be your testimony?
A. Ask that question again. I was looking.
Q. Sure. What's contained in your May 15, 2003, report and what's contained in the police report covers the entirety of the information that you've reviewed and addressed with regards to the examination or evaluation of the components of the steering system as it pertains to this case.
A. No. I've continued since the 15th and examined the vehicle and examined the building, and I've had other stuff. For instance, since that May 15th, I received these photos. Exhibit

20 that we were talking about, and talking about wheels and tires and whether they were on the vehicle, and these two photos I just saw last week when I was here, and carefully looking at these, the photos we talked about are not part of this vehicle, assuming this is the vehicle, because you can see different tread patterns.

So I think these photos that were taken by Mr. Kelsey or his representative, they're not of the subject vehicle.

Q. That's Exhibit 20?

A. That's Exhibit 20, yeah.

Q. Okay. In any event, what else -- what about the examination of the building refers to examining the steering components?

A. The examination of the building was to confirm its location relative to the road was to determine whether or not, quote, there was a curb to jump, which there isn't.

It confirms how much fence was damaged. Originally we had the note on the police report that the fence was damaged, but in the photograph that was taken there was no evidence of fence damage. But evidently after we talked to the person at the building, the fence damage was fixed immediately, and then the photograph obviously was taken after the fence was fixed.

But specifically it located the fence. It showed a relatively short distance of fence repaired, and it also showed me the construction of the building which allowed me to make the determination that this thing was a pretty immovable object.

It's a -- not a brick-veneered building. It's a block brick-veneered building. It's a cement block building below those brick, which is a pretty substantial building, and that's why it saw so much damage.

And the brick building, the damage to the brick building also is consistent with the brick transfer that you can gee on the edge of the fender and on the back part of the hood here indicating, yep, this is the vehicle that probably hit that because there's the brick damage on the vehicle as opposed to the color of the brick that's on the building.

MR. CARTER: I guess we should mark this. I don't know that these photographs have been identified before.

MR. HENDERSON: I think you may have given that to me. It's the Fierge yard's photo that was in the -- it was with the documents that showed the title to the vehicle and so forth.

MR. CARTER: Okay. Well, I don't recall seeing that, but let's go ahead and mark that.

(Exhibit No. 21 marked.)

BY MR. CARTER:

Q. So you're saying what's shown in 21, and I take it it's this discoloration above what's left of the left front wheel that you say is consistent with striking the brick in the building.

A. Yes.

Q. Okay. Do you know whether that was done at the time of the accident or in subsequent movement of the vehicle?

A. Yes.

Q. When was it done?

A. Time of the accident.
Q. How do you know that?
A. Because of the perch of the building, measuring the building, looking at the coloring of the building and looking at the vehicle today to determine that that's the paint from the red brick building that has been painted yellow or cream that was transferred onto the fender when it hit the building.
Q. Were there any white paint marks there that you saw on the vehicle?
A. It's not white.
Q. Well, I think it's painted white, isn't it?
A. No, it's cream color.
Q. Is there any cream-colored marks on the vehicle?
A. Yeah.
Q. Where?
A. That's the transfer on the fender.
Q. Where?
A. Well, you can see it there. I can show you a better picture here. I've got --
Q. Was this vehicle, what's displayed in Exhibit 21, damaged in transport or transition to Fierge Auto Parts, to your knowledge?
A. Probably.
Q. In what way?
A. Don't know.
Q. You have no way of knowing?
A. No, because I don't have any pictures of it at the accident site.
Q. Do you have pictures of it before it was transported by Fierge? Excuse me. Do you have pictures of it before it was transported by Fierge?
A. Again, I'm going to tell you I don't know when any of these pictures were taken. They were just sent to me by Mr. Henderson, and he would send me some more and then he would send me some more. The only pictures that I knew when they were taken or who took them are my pictures, which were taken June 30th.
Q. Pictures that were taken before transport to Fierge would help you determine whether or not there was damage in transport of the vehicle displayed in Exhibit 21. Is that correct?
A. Might. Hell, here are two, page 15, top picture shows the paint transfer from the brick, and it shows it's horizontal, which is consistent with the direction that you expected to see, and page 28 also shows you same thing.
Q. These are in photographs that you took?
A. Yes.
Q. Okay.
A. That's the evidence on the vehicle today. It's still there.
Q. Okay. Which one on 28 are you looking at?
A. The bottom one.
Q. And where is it you say there's evidence of paint transfer?

A. In the upper right-hand corner.
Q. Okay. And do you know whether that was put there at the time of the collision or at some subsequent time?
A. That was there at the time of the collision.
Q. Do you have any indication from some other source that it was there at the time of the collision prior to you taking these photographs about two weeks ago or a week ago?
MR. HENDERSON: Other than --
A. Yes.
MR. HENDERSON: Other than the earlier one he just showed you?
A. Yes, the other one shows us that it's there.
Q. Exhibit 21. Yes?
A. Yes, but it's not a close-up showing it.
Q. And you referred also to 15.
A. I think so.
Q. The upper one.
A. The upper picture, yes.
Q. Okay. You've examined the building. You've examined the vehicle. You did not -- did you look at any of the components of the steering system?
A. Are we going to kick that around all day? I have not seen steering components, no.
Q. Okay.
A. The individual components were not available. Let's not ask that question again, okay? You've asked it 16 times.
Q. They had been lost, altered or destroyed. Is that correct?
A. I don't know what happened to them.
Q. They were unavailable for examination.
A. The 17th time, that's correct.
Q. Those components would have been available for examination at the time that the photographs taken in Exhibit 21 were made; isn't that correct?
A. It appears that they would have been there, yes.
Q. The steering box is -- you said that was absent.
A. Yes, it was absent.
Q. Is there a device that is located in or ties into the steering box called the sector shaft?
A. Yes.
Q. And what is the function of the sector shaft?
A. The sector shaft is the part that has a partial gear on it that the rack teeth operate on. As you screw the ball screw into the rack piston on that particular steering gear, it moves a nut up and down and that nut has teeth on it. Those teeth operate on a sector shaft, and they turn the sector shaft or the Pitman shaft, it has two names, called a Pitman shaft because it attaches to the Pitman arm, they're one and the same, and it causes the shaft to rotate. It's a gearbox because it's working with gears, and it's translating motion in a 90-degree direction.

Q. That allows you to direct which way the wheels will turn, left, right or staying forward?
A. The system is designed that that is the driver, through the steering linkage, to turn the wheels right or to the left, yes. But that particular gear in that car is a hydraulically self-contained, power-assisted steering gear so the operator has power assist also.
Q. If a product like that failed, it would require what you told me earlier today, probable fatigue failure analysis.
A. How far are you going to reach, for crying out loud?
Q. Hell, just as far as you, I guess. I don't know.
A. What's the load in the steering gear going down the road at 35 miles an hour going straight down the road?
Q. Don't know.
A. Does Mr. Kelsey know? He obviously has got your questions for you.
MR. HENDERSON: Just answer the question.
A. There is no load in that steering gear under this driving mode. If you're going to break the steering gear, it's going to be because you whapped something, and it gets driven back up through the system.
Q. Is there no circumstance under which the steering gear could fail because of an inherent metal fatigue failure?
A. In this instance, absolutely could not happen.
Q. Hell, you're assuming that it didn't happen because of your analysis of what this case is. I'm asking you could it have occurred.
MR. HENDERSON: I think he answered the question.
A. No.
Q. Could it occur generally?
A. No.
Q. It would never be able to occur?
A. I can't say never because, if you have an accident, repair the vehicle and you damage the steering gear and then send it out, it could occur. But to take a vehicle, a relatively new vehicle with that steering gear in it and have a fatigue failure in it, that's dreaming in a crystal ball and nobody else's. Certainly not. And I know that steering gear, sir. It was made by General Motors.
Q. And we know their products never fail.
A. That's not true. If that's true, I would have never had a job.
MR. CARTER: I don't think I have any more.
MR. HABECKER: I've got just a few follow-up questions.
EXAMINATION BY MR. HABECKER:
Q. Have you ever testified on behalf of a plaintiff in an automobile products liability case?
A. Yes.
Q. When?
A. A number of years ago in Philadelphia.
Q. What were the facts of that case?

A. It was a steering claimed failure, and it was a steering failure that caused an accident. And I testified that the failure was caused by lack of maintenance, and it was a tie rod separation on a vehicle, and it was an old vehicle, and the vehicle went across the road to the left and I think it hit an abutment or something. It was a Chevrolet pickup.
Q. Who retained you in that case?
A. I really don't know the circumstances totally. At the time I was employed by General Motors, and it was the second time around. We tried the case, I was the defense expert, and there was some agreement that I don't understand or whatever, but the attorney for General Motors agreed with the plaintiff that I would come back and testify for him in the second trial. The attorney that was working for us has passed away. Like I said, it was several years ago, and he was an elderly fellow at the time.
Q. Is that the only case you've testified for plaintiff's side in a products case?
A. It's the only one that's vivid in my mind, but, you know, I have obviously testified several times as an adverse witness situation called by the plaintiff. I That's the only one I can think of. There may have been one other one.
Q. Do you remember the name of the case? I
A. Marilyn Long versus some equipment company.
Q. And this was venued in Philadelphia?
A. Yes. And Don Matusow was the lawyer for the plaintiff, and he's with Jerry Litvin's law firm because I've had several cases against him.
Q. On how many cases have you been a consultant in or testified in in which spoliation -- the issue of spoliation was raised by the automobile manufacturer?
A. I can't answer that. I don't know, because in many instances, that would be an issue that was addressed before I would get involved in the issue. That was always the lawyer's end of the battle.
Q. I'm just asking you instances that you know where spoliation was an issue and it was an issue being raised by the auto manufacturer. Is it more than five?
A. Let's put it this way. It's more related to the claims analysis I did with ESIS, so that work I've done since 1994 till a couple of years ago when GM took it all back in-house.
But the issue that would be primarily raised, I would raise it with the claims administrator, who would work with a local attorney. and I wasn't involved in testifying about it. And out of all the work I did in that claims analysis, we didn't end up -- I didn't end up actually going to trial or to arbitrations very often.
Q. Let's not talk about testifying in trial.
A. Okay.
Q. Just how many times during your career has, to your knowledge, has spoliation been an issue raised by the automobile manufacturer?
A. I can't answer your question.
Q. Well, are we talking about less than 100? more than 100?
A. I would say, you know, you're trying to play the typical game. Very few cases. Maybe a half a dozen.

Q. Okay.
A. That's an estimated guess.
Q. Are you aware -- well, have you actually testified in court in a situation where spoliation was an issue raised by the automobile manufacturer in the state of Illinois?
A. Maybe.
Q. Do you remember the name of the case?
A. No.
Q. Do you remember the approximate time period?
A. No.
Q. When you say “maybe,” are you remembering a certain case or are you just trying to be safe?
A. There was a case that I can't quote by name, and I was shown it many years ago and I don't remember why. Whether it's spoliation or whether it's something else, and it might have been spoliation that made the determination; might be.
Q. Do you know what it was that you said that --
A. No, I don't.
Q. -- Drew someone's interest to it?
A. No, I don't. All I remember is there's something in Illinois. I'm fairly confident it was Illinois.
Q. What's your understanding as to where this vehicle came to rest right after the impact?
A. I understand the tow truck driver claims it was basically pointed at the building, perpendicular to the building; in other words, it hit the building and it swung around in a counterclockwise motion, which is what it would have done.
Q. And from what are you basing that opinion? Where did you acquire that knowledge?
A. I think it came from Mr. Henderson.
Q. Okay. The police report didn't show that, did it?
A. Correct, it does not. But the physics of the collision, that's the way it would go.
Q. So the vehicle was back out in the street?
A. Probably, because it's a lot longer than it is from the edge of that road to the building.
Q. You don't know how far the front end of the vehicle was from the building when it came to rest.
A. No.
Q. When were you first contacted by Mr. Henderson to discuss this case?
A. Sometime prior to May, but I don't know. I'd have to go through all that and see if there's a letter to tell me. It's not been -- it hasn't been a year.
Q. Hell, if you've got something that would help you answer the question, take a look.
A. I don't know if I do or not. He sent me this material in April of this year, on April 29th. So my best guess would be sometime in April he called me.
Q. This question may have been asked at the beginning of the deposition, and I didn't write down your answer. What is the -- what is your definition as to what is meant by the term “crashworthiness”?

A. Crashworthiness is a term that's applied to a vehicle that reports to the performance of the vehicle in an accident and how well it protects the occupants. It's related to occupant, occupant injury versus the accident type of thing. And the crashworthiness of the vehicle is dictated by some of the requirements from the Federal Government on motor vehicle safety standards.

Q. Has the term “crashworthiness” been in use for a number of years? If so, do you remember its origins?

A. Well, no. I can tell you for a number of years it's been involved because the question asked earlier about accident causation, and I separated out accident causation between the design defect because it wasn't crashworthy. We're not contending the vehicle -- accident causation is not a point in contention but the construction and testing and design of the vehicle is.

That's a different kind of an engineering approach and different type of situation that I'm -- and I'm involved in those not very often, but I have been involved in those situations.

The other aspect of what you're going on is they condemn the design because it doesn't handle properly, i.e., the Corvair litigation. But crashworthiness is basically based on the performance of a vehicle in an accident and how it affects the occupants.

MR. HABECKER: I don't have any more questions.

MR. CARTER: No, I'm done.

EXAMINATION BY MR. HENDERSON:

Q. One of your opinions in this case is that the vehicle reasonably protected the occupant in this accident from a design point of view. Is that correct?

A. Yes.

Q. Part of your file was the shop manual for this particular vehicle and some sketches or diagrams from that.

A. Yes.

Q. You were questioned about what your general procedure would be when you were provided with a component that was thought to be defective or caused an accident or an injury. Correct?

A. Yes.

Q. In an instance where the question is whether some component failed, what issue or regimen with respect to the analysis --

A. Well, certainly the easiest thing to have would be the actual component itself, but when you get into accident reconstruction situations and you evaluate all the data and if you have sufficient experience looking at vehicles, vehicle performance, knowing what vehicles do and don't do and so forth, you just take what data is available and see if you can come to a conclusion.

Q. And, in this particular case, is it your opinion that sufficient data was available, including the renting of the vehicle that you inspected, to determine, with a reasonable degree of engineering certainty, that there was no manufacturing defect or design defect that caused this vehicle to go to the left and to hit the building?

A. Yes, sir.
Q. Is it your understanding, from reviewing Mr. Kelsey's deposition, that he also thought that the vehicle was reasonably crashworthy?
A. Yes, I believe he stated that.
Q. Had you been sent the photographs, police report, and information about Mr. Miller's testimony about the defendants in this case, would you have told them that you didn't believe they had a case to pursue?
A. Yes.
Q. One of the educational efforts undertaken by General Motors was to instruct people not to slam on their brakes in an emergency situation. Is that correct?
A. Yes.
Q. Is it your experience, however, that it's a natural human tendency to put on the brake if the vehicle performs unusually and one is awake?
A. Well, that's been observed by many people, including myself, in test situations. We've deliberately run those test situations through, again, with people -- we did that back in the middle '60s, but I think that's -- in the accident investigation manuals and so forth that's a pretty well-established fact. And that's why there has been a lot of training programs and there is schools now that teach you not to do that and also why they came along with antilock brakes.
Q. One of Mr. Kelsey's opinions -- by the way, did this vehicle have antilock brakes?
A. I don't know.
Q. One of Mr. Kelsey's opinions is that the evidence that he has reviewed indicates that it would be -- that it was inconsistent with that evidence to say that Mr. Miller fell asleep before the vehicle went to the left. What does your investigation of the materials disclose?
A. Well, I don't know whether Mr. Miller fell asleep or not. All I know that there's nothing on this vehicle to indicate any product problem, and the path of the vehicle, the load mechanism on the vehicle said that it went to the left to get to the other side of the road and then it was straightened out and went into the building straight.
That can only be done when the steering system is working, and the only way that it can happen to the steering system is if the operator is turning the steering wheel. Whether he does it voluntarily or involuntarily, I don't know. I just know what the vehicle will do and what has to happen to it and what the evidence shows that's what happened to the vehicle.
So Mr. Miller, whether he's alert or what, here steered the vehicle to the left to get him off the road, and then he straightened the vehicle up to get it to go right and go head on into the building.
Q. Mr. Kelsey indicated that he is of the opinion that, when somebody falls asleep at the wheel, the vehicle goes to the right rather than to the left. What is your opinion?
A. It all depends on what the operator does at the steering wheel.
Q. Have you known of occasions in -- which vehicles have gone to the left when people have fallen asleep at the wheel?

A. Well, let's back up. I know of several occasions where the vehicle has gone to the left. Some instances there's been indications of the driver sleeping. There have been other reasons for it to go to the left. They tend -- in general for inattention several vehicles will drift off to the right. That's a pretty well-established situation too. But the vehicle path is hard to determine when the operator is sleeping or inattentive.

Q. You were asked how many seconds from the time the vehicle first veered to the left until it collided with the building, and I think you were unable to give a precise answer to that. Does it depend, to some extent, on the distance the vehicle traveled?

A. Yes. If you're traveling 44 feet per second, in ten seconds you travel 440 feet. So you're traveling a football field plus, and measuring the actual accident scene, there's 110 feet of fence that could have been hit by the vehicle, and we know that there was only about 20 feet of fence that was replaced.

So we know that the vehicle didn't get involved in the fence until it was almost a car length away from the building. Now, had he been way back down the road and come across the road and come across the road at, say, 200 feet, we would have seen more fence damage. The only thing the fence damage tells us that he's straightening that out just about one car length, but whether he's driving along the edge of that road for some distance and drifts in or whether he has crossed the road, we just don't know.

The thing that we have is just the description by the operator that said that he made a normal move across, which is going to take some considerable distance because it's going to take, you know, several seconds for that to occur.

So the accident where he actually lost his intended direction was probably back before that street, which was -- I forget the dimension now. It's about 100, 200 feet back.

Q. Mr. Shafer's statement talked about a broken sign post. Did you note on the diagram, which is in your file, the location of any portions of a sign post?

A. We just noted the posts that were there. There was one post right up against the building, that, in my opinion, would have been a fence post.

Then we came back down the path of travel and up to the street, I don't know the name of that street, but there's a street before we get there, and there are remnants of two pieces of pipe in the ground that you can find and those are back before you even get to the fence. They're over 100 feet away from the area.

That's the only remnants of anything that could have been a sign post, but I don't know what those posts were.

Q. If, in fact, there was a sign post down and the remnants that you saw were from that sign post, would that indicate that the -- would that be consistent with your estimate of the angle at which Mr. Miller hit the building?

A. Hell, it would be consistent with the fact that he was driving parallel with the road there for quite awhile before he got to the building, because that was, like I said, it was a -- several hundred feet back. It was before the fence portion that he hit was available. The fence actually at 110 feet went back up towards the building.

Q. We took about a half-hour break for you to go through your photos and mark specific photos that pertain to each of the number of opinions that have been disclosed in this case. You weren't asked about all of them, but you do have post-its, do you not, on the photographs that you have made with respect to those particular opinions?
A. Yes.
Q. You said at one point that you would have to do an extreme accident reconstruction to come any closer than the plus or minus five degrees with respect to the angle of contact between the vehicle and the building.
Are you confident that your analysis allows you to state that angle with a reasonable degree of engineering certainty?
A. Yes. The damage to the vehicle demonstrates that, and it's pretty -- pretty well outlined in the letter I sent you on May 15.
Q. There were some questions by counsel that you had no idea when parts were removed from the vehicle.
Do you recall seeing some records from the auto salvage dealer in Quincy showing that certain parts were sold from the vehicle --
A. Yes.
Q. -- At certain different times?
Is it your experience that parts that are sold by a salvage dealer generally are parts that have not failed in an accident?
A. Correct.
Q. You mentioned the possibility of several adverse consequences that could occur when a tie rod broke. Are there also consequences that are nonadverse?
A. Yes. I think I started out saying that the vehicle could probably go straight, probably would, under this set of circumstances.
Q. During your career, has it been your custom and practice to review what evidence is available in order to formulate opinions with respect to the performance of a vehicle or components in an accident?
A. Yes.
Q. You mentioned that there were occasions when you would actually get to the accident scene while the vehicle was still there. Out of 1,000 cases, how many times would that occur?
A. About half.
Q. Okay. That doesn't --
A. That's usually when I was working with the police departments that I'd get right to the vehicle.
Q. And when vehicles are towed from scenes, is it unusual for a tow truck operator to toss pieces that he finds laying around the vehicle into the back seat or front seat of the vehicle and tow it off to the salvage yard?
A. Yes.
Q. Is that customary?

A. Yes. I think today's market most places require the truck driver to clean the area up.
Q. Are you -- you indicated that the tread pattern shown on the Fierge photo appear to be different from the three tires and wheels shown in Mr. Kelsey's photograph. Correct?
A. That's correct.
Q. Are you comfortable that the components that you examined and photographed of this vehicle and that are contained in your photographs are, in fact, parts that were from this particular vehicle?
A. Yes, sir.
Q. And you can say that with a reasonable degree of engineering certainty?
A. Yes. Many of them had part numbers on them that were -- had the Chrysler emblem on them, the five-star emblem and the Chrysler-type part number.
Q. Has it been your experience that, when a forensic engineer sends a technician out to take photographs of a vehicle for a case that he's working on, that the expectation is that the photographs will be of the parts of that vehicle?
A. Well, yeah, but I would have -- like I said, I've only done it a couple of times, and normally what I would do when I take a technician and let the technician take pictures, but I take him along and tell him where to take pictures.
Q. You were asked a number of general questions about what systems you wouid investigate if you were looking at a claim of a potential steering loss.
A. Yes.
Q. Are you comfortable that you reviewed sufficient information in this case to arrive at the opinions that you have -- that are contained in your expert witness disclosure with a reasonable degree of engineering certainty?
A. Yes.
Q. You read the deposition testimony of Officer Ott.
A. Yes.
Q. Did he indicate that he marked on the police report that the driver was asleep or unconscious based on information the driver gave to him?
A. Yes.
MR. HENDERSON: That's all I've got.
FURTHER EXAMINATION BY MR. CARTER:
Q. This Exhibit 10, are you using this to support your opinion about the deformation of the vehicle supports the theory that the vehicle struck in the manner that it did?
A. No.
Q. What are you using it for?
A. I'm using it to demonstrate to help illustrate to Mr. Henderson the type of materials that I have in my background to show him why I made that statement.
Q. Is this what you would call a frontal, single-car crash or single-vehicle crash situation?
A. This is what I called a frontal, offset-barrier crash, yes.
Q. Is that the same as single-vehicle crash?
A. Well, it's a single vehicle, yes.

Q. So I'm looking at Table 10. Is that something that would be analyzing what the similar circumstances --
A. I'd have to read some more to see, but it may be. It may be. But that isn't the item that I was showing to Mr. Henderson.
Q. Okay. Hell, can I have that back, please.
A. I haven't reviewed that article.
Q. All right. Well, it says “Direct Damage in Frontal, Single-Car Crashes.”
A. Yeah, but it doesn't tell what the obstacle hit is.
Q. Well, it says -- the article starts at page 54 and I'm looking at what is Table 10 at page 61. The article appears to end at page 63, They're apparently comparing offset testing with what Mercedes had done with the full frontal crash testing because the article is entitled “Offset Frontal Impacts: A Comparison of Real-World Crashes With Laboratory Tests.”
So looking at this Table 10, it says “Direct Damage in Frontal, Single-Car Crashes,” and under the column it has “Direct Damage” and it has “Distributed, All Towaways, No. 173,” and that says “23 percent.”
Does that mean 23 percent of all vehicles involved in the tests showed damage across the whole front end?
A. Again, sir, the article speaks for itself. I haven't reviewed the article.
Q. Okay. And it shows different delta-Vs. Delta-Vs are what?
A. Change of velocity of the vehicle in the crash.
Q. And what determines the delta-v?
A. The delta-V is determined by the abruptness of the stop.
Q. So the more immovable the barrier, the greater the delta-v?
A. The more immovable the barrier, the greater the delta-V.
Q. Right.
A. If you stop right now, the delta-V is very high. If you stop in ten feet the delta-V is much lower.
Q. In this particular case the delta-V would have been higher as opposed to lower. Correct?
A. Relative to what, sir?
Q. Well, I mean, if you compare it with all barriers in which something would be striking -- I think you said earlier this was a very solid barrier that the vehicle struck.
A. It would be, because of the amount of the vehicle involved, the delta-V is going to be a little lower.
Q. Okay.
MR. HENDERSON: If you're through with that, can I see it?
Q. Do you have any information that the scene of the occurrence or the area surrounding it that you evaluated on July -- what was it, June 30 or July 1?
A. July 1. Well, June 30th and July 1.
Q. -- Is in the same condition today as it was at the time of the occurrence here?
A. Yes.
Q. What's that information?

A. Except for the fence, it's the same.
Q. Are you telling me -- who told you that?
A. The -- I don't know if it was the owner. It was somebody associated with the building.
Q. Okay. The question was not just the building or the fence; the question was the surrounding area.
A. Yeah, we talked about the sidewalk and the area around the building. Nothing has changed, and it's obvious nothing has changed in that area. Nobody has worked on that road, I can tell you that.
Q. Okay. Who was the gentleman that gave you the information that nothing has changed down there in six years?
A. I don't remember his name.
Q. When did you talk to him?
A. On July 1.
Q. What did he have to say to you? What were your questions to him and what were his answers?
A. I asked him whether the building had anything done to it; he said no. I went into the building to see the construction of the building, and he commented that the interior of the building hadn't been touched, and there wasn't any damage to the interior of the building that I could see.
But by virtue of lifting the tiles in the ceiling, I could see how the building was constructed, and that was my primary revisit purpose. And he made the comment that they had done nothing to the outside of the building, except that they had had the fence repaired, and the rest of the area, the sidewalk area and the street and all that kind of -- it was pretty obvious that it's been in that condition that we saw it in for quite awhile.
Q. Did you ask him about that or did you just ask him about the building?
A. I don't recall that.
Q. Okay. You don't recall any information he gave you about anything other than the building and the fence. Is that correct?
A. Well, we talked about other things, but they weren't related to this accident.
Q. Okay. So do you have any information from any other source about this area surrounding the building at the accident scene other than your conclusion that nothing's been done down there for six years?
A. No. I only have my observation and my photographs and the video that I took of the area.
Q. Okay. Exhibit 8 is a document which shows what?
A. It shows the steering linkage on the vehicle and the components, and then I have penciled in some other components and sent it to Mick.
Q. What have you penciled in?
A. I've penciled in a wheel and tire and the spindle area, penciled in the general location of the frame and the upper spring seat and the coil spring, and then I've kind of sketched in a cowl area, windshield area, and basically showing that the line of force is down the wheel

right down the A-pillar, and it goes along with a photograph that I sent him where I've drawn that line on the photograph on an exemplar '97 truck.
Q. So this document, which we've marked 8 and has your drawing on it, is to display your opinion of this line of force?
A. To show where the physical evidence on the vehicle shows the line of force went down the vehicle, yes.
Q. Okay. Any other purpose served by Exhibit 8?
A. Well, it also shows the general arrangement of the steering linkage.
Q. Okay. Anything else?
A. Shows the configuration, the general location of the front axle.
Q. The steering linkages are the -- strike that.
The device in the middle above is called what?
A. That's a depiction of the steering gear, sir.
MR. CARTER: I don't have any more.
MR. HABECKER: No questions.
MR. HENDERSON: Okay. We'll reserve.
FURTHER DEPONENT SAYETH NOT SIGNATURE RESERVED
ILLINOIS SUPREME COURT RULE 207(b) CERTIFICATE
I, Christie C. Stephens, a Certified Shorthand Reporter and officer of the Court in and for the State of Illinois, DO HEREBY CERTIFY that, pursuant to notice, there came before me on the 7th day of July, A.D. 2003, at 227 Northeast Jefferson Street, Peoria, Illinois, the following named person, to wit:
GERALD A. CONFER, P.E., a witness, called by the plaintiff, who was by me first duly sworn to testify to the truth and nothing but the truth of his knowledge touching and concerning the matters in controversy in this cause, and that he was thereupon carefully examined upon his oath and his examination immediately reduced to shorthand by means of stenotype by me; and that the foregoing is a true record of the testimony given by the witness.
I FURTHER CERTIFY that signature of the witness to the foregoing deposition was not waived and that any changes made by the witness are appended hereto in the form of a Supreme Court Rule 207(a) Statement.
I FURTHER CERTIFY that I am neither counsel for nor related to counsel for any of the parties to this suit nor am I in any way related to any of the parties to this suit, nor am I in any way interested in the outcome thereof.
I FURTHER CERTIFY that my certificate annexed hereto applies to the original transcript and copies thereof, signed and certified by me only. I assume no responsibility for the accuracy of any reproduced copies not made under my control or direction.
IN WITNESS WHEREOF, I have hereunto set my hand at Morton, Illinois, this 14th day of July, A.D. 2003.