DCA-12-MR-009

CSX Transportation Freight Train Derailment with Non-railroad Fatalities

Ellicott City, MD

August 21, 2012

Track & Engineering Group Interview of CSX Engineer of Rail Services on August 24, 2012

44 pages, including cover & errata sheet

I, Bradford Spencer, have read the foregoing pages of a copy of my testimony given during an interview into NTSB's accident investigation, DCA-12-MR-009, a freight train derailment with non-railroad fatalities on CSX Transportation on August 20, 2012, which occurred at about 11:56 p.m. in Ellicott City, Maryland; and that these pages constitute a true and accurate transcription of same with the exception of the following amendments, additions, deletions or corrections:

PAGE NO:	LINE NO:	CHANGE AND REASON FOR CHANGE
12	1	Yelverton instead of "Yoverton"
12	1	Yelverton instead of "Yoverton"

I declare that I have read my statements and that it is true and correct subject to any changes in the form or substance entered here.

Date: 9/17/2012 Witness: [redacted]

UNITED STATES OF AMERICA

NATIONAL TRANSPORTATION SAFETY BOARD

Investigation of:	*
	*
CSX TRAIN DERAILMENT	*
AUGUST 20, 2012	* Docket No.: DCA-12-MR-009
ELLICOTT CITY, MARYLAND	*
	*

Interview of: BRADFORD SPENCER
Engineer of Rail Services, CSXT

Friday,
August 24, 2012

The above-captioned matter convened, pursuant to notice.

BEFORE: RICHARD HIPSKIND
Accident Investigator

APPEARANCES:

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I N D E X

I N T E R V I E W

MR. HIPSKIND: My name is Richard Hipskind and I am the Track and Engineering Group Chairman for NTSB for this accident. We are here today on Friday, August 24th, 2012, to conduct an interview with Mr. Brad Spencer, who works for CSX Transportation. This interview is in conjunction with NTSB's investigation of a train derailment with non-railroad fatalities that occurred on CSX's Old Main Line Subdivision in Ellicott City, Maryland on August 20th, 2012. The NTSB reference number is DCA-12-MR-009.

Before we begin our interview and questions, let's go around the table and introduce ourselves. Please spell your last name and please identify who you are representing and your title. I would remind everybody to speak clearly so we can get an accurate recording. I'll lead off and then pass off to my left.

Again, my name is Richard Hipskind. The spelling of my last name is H-i-p-s-k-i-n-d. I am a Railroad Accident Investigator and the Track and Engineering Group Chairman for NTSB on this accident.

MR. CROWTHER: Frank Crowther. I'm with the Federal Railroad Administration. I'm a Track Safety Inspector assigned to Region 2, headquartered Baltimore, Maryland.

MR. INCLIMA: My name is Rick Inclima, I-n-c-l-i-m-a, Director of Safety for the Brotherhood of Maintenance of Way Employees Division.

MR. HONTZ: My name is Brian Hontz. I'm with the

Federal Railroad Administration. I'm a Regional Administrator and acting in the capacity of observer during this interview.

MR. DANIELS: Randy Daniels, D-a-n-i-e-l-s, Division Engineer for CSX, Baltimore Division.

MR. KISH: Larry Kish, K-i-s-h. I'm with the FRA. I'm Deputy Regional Administrator, Region 2, Philadelphia.

MR. SPENCER: Brad Spencer, Bradford Spencer, representing CSX Transportation. I'm the Engineer of Rail Services. S-p-e-n-c-e-r.

MR. HIPSKIND: Okay. Thank all of you.

Mr. Spencer, throughout this interview, can I use your first name and refer to you as Brad?

MR. SPENCER: Yes.

MR. HIPSKIND: Okay. And do we have your permission to record our discussion, our interview with you today?

MR. SPENCER: Yes.

MR. HIPSKIND: And do you wish to have a representative with you at this interview?

MR. SPENCER: No.

MR. HIPSKIND: Okay, let's proceed.

INTERVIEW OF BRADFORD SPENCER

BY MR. HIPSKIND:

Q. Brad, if you will, kind of give us a synopsis of your work experience and take us up to your present job and let us know how long you have been in that position.

A. Okay. I've been with CSX since the merger in 1999. I started on the railroad with CONRAIL in March of 1993. I started in -- as an electrician in the locomotive shop, mechanical department, for approximately 10 months. And I went into management January 1994 and started as -- track geometry engineer was the title, and I worked geometry until promoted in 1997 to manager -- or track geometry, engineer of track, I believe was the correct title, until '99, when I moved to CSX.

And I continued to work on the geometry cars, track geometry, for CSX from 1999 to 2008, November, as the manager of track geometry cars. In 2008, I became the Engineer of Rail Services, November, and that's currently the position I'm holding now, and I've been holding this position since then.

Q. So, roughly, Brad, you've been in the railroad industry, again, for about how many years?

A. Nineteen years.

Q. Okay. Tell us a little bit about your current position. I know we've talked while we were out there doing the rail rebuild and everything and I'd like for you to describe for the group some of your duties and responsibilities as they pertain to any kind of track testing, ultrasonic testing. And go so far, Brad, as to tell us how all that data is distributed and what are some of the concerns, what are some of the things that the railroad does with the data.

A. Okay. Well, I'm -- as I said, the Engineer of Rail

Services is my title, and what that consists of is managing our rail testing, which is all outside services. So we use two contractors. We use Sperry Rail Services, predominantly, and we also use Nordco Rail Services. We have 1 or 2 trucks of Nordco versus, currently, we have 16 of Sperry. So, predominantly, it's Sperry Rail Services that are doing most of the testing.

I schedule and manage that rail testing that we do on a daily basis, and it consists of a little over 20,000 miles that we rail test main line. That's my primary duty, and to make sure, you know, reporting and quality and keeping the program, you know, in the frequencies that we established. And that's primarily what I do.

Q. Okay, two quick questions, then I want to hand it over to Mr. Kish. When you say 20,000, how should we think of that in terms of a time frame? Is that per year?

A. No, that is how much track we cover. It's 20,107 miles, I believe. But that's the mileage that we rail test. It doesn't include if we -- the frequency of the test. So that's our total mileage that we test, but not the total -- it's the total miles that we cover, not the total miles that we test.

Q. Is the total miles that you test a multiple of the frequency of that 20,000 then?

A. Exactly.

Q. So just to use an example to be clear, if all the 20,000 miles that you test had a three times annual test, you'd be

talking about 60,000 miles that you test?

A. That's correct.

Q. And when you tell me that you've got 1 or 2 Nordco trucks and 16 trucks from Sperry --

A. Yeah.

Q. -- I imagine you have a logistical challenge to keep all that moving smoothly?

A. Correct.

Q. Okay. And my last question then. Brad, tell us about what happens to all the datastreams of all these defects and stuff like that. I mean, who is responsible for addressing it and who's responsible for distributing it, things like that?

A. Okay. Well, to be clear, we only have 1 Nordco truck right now working and 16 Sperry. So that's a total of 17 trucks that we're running.

Q. Okay. I stand corrected.

A. But it does vary. You know, we'll pick up one -- up and down. But, right now, that's current.

Normally when we do the test, we come up -- we -- at the end of the test, we have two reports that we print right there for the local forces. And one of the copies is what we call the movement report, which tells them when they -- you know, they started at this time and they traveled to this time and they started testing at this time and what track. It tells you their complete movement details for the day. If they have to wait for

traffic, that's noted, for other trains, you know, delay for maintenance of way, or whatever the delay, whatever the movements, all of it is on the movement report.

And then we have a separate report that is the rail defective -- defect report and it covers all the defects that they may have found throughout the day. They also have a -- that is distributed to the -- Randy's folks right at the time at the end of the day. But we also have a CSX rep on the truck when we're testing throughout the day, so if we do mark a defect, we have somebody there that can handle the immediate remedial actions that have to be taken for that defect.

So those initial remedial actions are all documented, you know, within 24 hours in what we call our ITIS, or Inspection Track -- do you remember -- ITIS system is an electronic system that --

Q. Information System.

A. Yeah, it's a -- yeah, that's right. Sorry. But everything is documented in that system. What happens, at the end of the day, the test is distributed with actual paper reports, but it is also transmitted to Sperry every night or Nordco every night and those reports are then all put together and sent back to us as an electronic transfer. And our system grabs it and downloads movement and defects and it automatically moves them to the Integrated Track Inspection System, ITIS. Those things go into the system and as the -- the maintenance way folks for the

division, they'll actually put in the remedial actions on the computer at their end then.

Pretty much, after they go into the system, my part of it's -- I'm not part of that system after they go into the ITIS system. That is handled on a division level then.

Q. But the operative point there, I think, Brad, is that -- and you correct me if I'm wrong -- but the data gets entered for the local folks who are going to address it. It almost gets inputted in real time, certainly on a daily basis, and then there are prompts in that system that it stays in their face until it's been corrected and until it goes off. Does that sound about right to you?

A. That's correct.

Q. Okay.

A. But I'm not -- on the ITIS side of it, I'm not that familiar because that goes into the -- the track inspectors pull it up on their laptops and they download it and all that and I don't really do anything on that side of it, so -- in fact, I don't even have the system. I have the rail defect part of the system, but I don't have the interface that the track inspector would have. I very rarely ever go over there, just to see if something -- if something happened in that transmission and it wasn't there, that would be the only case that I actually go into that system to look at it.

Q. Okay. That's all the questions I have for right now.

And I think what I want to do is get out of the way and have a couple of experts have a conversation.

MR. HIPSKIND: So, Mr. Kish, if you will continue with Brad?

BY MR. KISH:

Q. Larry Kish, K-i-s-h, with the Federal Railroad Administration. Hi, Brad.

A. Hello.

Q. Can you tell us the last time the track that had the derailment -- it would be the Old Main Line -- was tested? Do you have that date?

A. I do. That was on 8-3-2012.

Q. Could you tell us the contractor that did that testing?

A. That was Sperry Rail Services. SRS 919 was the truck.

Q. Okay. And that was a truck, not a rail bound --

A. That's correct.

Q. What type of equipment does he have on that vehicle?

A. He has the latest technologies on that truck that Sperry has. So he has a 1900 test system with a crossfire, full induction suite, and a full ultrasonic suite, as well as vision.

Q. Okay. So he does have the crossfire, the induction, and the vision?

A. Correct.

Q. Okay. Do you know who the operator was?

A. Yeah. On the 8-3 test, the operator was Russell

Yoverton (ph.).

Q. Do you know how long Mr. Yoverton's been with Sperry?

A. He has --

Q. Approximately. I know you don't --

A. I know that he's been a chief operator on the -- on this area of the railroad since I've been in my current position, which was November 2008. I was -- I thought that I had requested that -- or I talked about that information. I don't know if I requested it from Sperry, but I could get all of his qualifications. He's been a -- he's a very seasoned operator. So I will say, though, that it's -- he's been there for at least 4 years since I've been there.

Q. So when you say he's been there, he's been on that territory or that specific track for the last -- since you know of, 2008?

A. That's correct. I've always kept him in this area. He's a very thorough tester. All my experiences with him have been excellent.

Q. So he is familiar with the lines and the rail and --

A. Yes.

Q. Of course.

A. He is -- the normal truck that I assign, the Old Main Line to is his truck, and it hasn't deviated from that in quite some time. Now, operators have, I mean, because we've -- Russell has been on vacation. Like, so the test on 7-6, which was the

test prior to this, it was a substitute operator that was operating the truck, Dave Williams.

Q. Okay. How often do you test this line?

A. Our frequency is every 31 days. It is our -- so we -- you know, to hit the exact day on a 31-day frequency is very difficult, but we base it on a system of what we call, you know, green, yellow, and red, where it's based on percentages. So from our system, if we go early -- we don't want to really be early because you're not using your resources effectively, and you don't want to be too late because of the -- it increases the risk. So we have a risk-based system that we use to schedule and we use a system that keeps us within a certain percentage of when it is due.

Q. Okay. That risk-based system, that's UP -- does CSX have that or is that contracted out?

A. That's contracted out. We use Harsco and -- formerly ZETA-TECH.

Q. For that risk-based system, what do you -- what does CSX supply to them? Do you know offhand?

A. Yeah. We supply, of course, our service failures, our defects, our rail -- our detected defects. We supply our tonnages. We supply passenger routes information, key route information, of course, the track designations, you know. So we give a master track file which, you know, gives us all the mileposts and locations of like Track 1, 2, and single and all our

main line tracks, and I believe that's just about it.

Q. On the last test of August 3rd, do you recall how many detects -- defects were noted that day?

A. On August 3rd?

Q. Yeah. That would be the last test prior to the derailment.

A. I have them on my computer. I can pull them up. I can't remember how many were on that specific day.

Q. Okay, I --

A. I saw one day and I think it was six, but I'm -- I don't want to commit to that. It might have been on -- but I looked at all three tests, so I might have got them mixed up, so --

Q. Actually, I'm looking, and it is six.

A. Yeah. Then it was August 3rd, it was six, yeah.

Q. Okay. Do you recall if any of them was in the area that we are focusing on for this derailment?

A. Thank you. I have them written down, but --

Q. That's fine. I just want it on the record.

MR. HIPSKIND: Okay, he is looking at that same record that we requested and that they provided --

MR. KISH: Yes.

MR. HIPSKIND: -- to you for your examination.

MR. KISH: Right. He's looking at what we requested, right.

MR. HIPSKIND: Okay.

MR. SPENCER: That's correct. And I have looked through them, but I wanted to make sure I was correct. But there's nothing within that milepost area on this last test that was marked.

BY MR. KISH:

Q. Okay. Have you had a chance to review the screenshots that Sperry has provided?

A. I have.

Q. Did you notice anything unusual on those screenshots?

A. No. But there is some indication of an alignment, a slight alignment where they don't -- on this August 3rd test, there is what they call positive zero, which means they have zero in the center of the rail and that's -- they can measure quality. Now, they never lose the bottom of the rail through the test, but we do kind of like nick the web, if you want to say, but it doesn't compromise the test whatsoever. It just gives you a little bit of feedback, more or less.

Q. Okay. Would that be the blue and white indications --

A. Yes.

Q. -- would be a positive zero?

A. That's correct.

Q. Would you get a positive zero because of the rail wear?

A. Typically, in heavy curve-worn rail, it's very -- it's more challenging to keep your zero. So that is true.

Q. During the Sperry testing of any rail, does adverse

track conditions, such as geometry, saturated subgrade, any adverse track condition, come into play on the testing portion of it?

A. Only if it affects the rail when you're testing. Sometimes you could have a physical thing that would -- that causes, you know, surface irregularities which comprises the test. Typically, that doesn't happen from like saturated ballast, but that -- you know, you can develop corrugation and things like that and that definitely adversely affects the test. So in that respect, yes.

Q. Okay. As of now, that's all I have.

MR. HIPSKIND: Okay. Thank you, Larry.

Frank, do you want go next or do you want me to --

MR. CROWTHER: I don't have any questions at this time right now. Thank you.

MR. HIPSKIND: Okay. Thanks, Frank.

Rick?

MR. INCLIMA: Yeah, I'll be very quick. I've just got a couple of quick questions. Thank you, Larry.

MR. SPENCER: Rick, how are you?

BY MR. INCLIMA:

Q. I'm fine. How are you?

A. Good.

Q. Good. I'll make this real quick, Brad. How does the -- when the machine or the computer develops data -- I know it's a

very busy graph and all that --

A. It is.

Q. -- how does that get transferred into actionable data for Randy and his forces? I mean, is it -- I mean, is --

A. Well, the system automatically -- the test system on the truck, on the rail test vehicle doing the test, what they do is they block things. So you've got some computer recognition there. So they take basic -- they take, you know, recognition software that they develop and they see patterns on the B-Scan chart themselves and they block that information. And when they do, it notes the location, the coordinates, all that kind of, you know, information. And then, typically, Sperry will stop and maybe they'll rerun because you have an issue there and -- or they'll get out and hand test.

And every one of the indications are not defects; they're more areas of interest and until they actually hand test them, it's not really, you know, a valid -- you can't go just on the signature because ultrasonic's bouncing on all kinds of stuff. You know, it's not just defects out there.

So, you know, until he actually gets out and hand tests it -- when he does, he notes -- if he does mark the defect, they physically write the number on the side of the rail of the defect number, and they also put the milepost number so that they can -- we put the milepost so they can correlate other things that goes on, like track disturbance and things like that. And they also

put a tape on it. They have a procedure on how they mark things. They put a crow's foot on it. They spray paint it. When they're done with it, you -- it's very difficult to miss with the red tape.

So the pilot that'll be with him, whether they be in a separate hi-rail vehicle or whether they're physically on the truck that they're on, they come in and they get all the data from it right then. If they have to do an initial remedial action, they do it. If they have to put speed restriction out, they do that.

All that stuff is taken inside the truck then and the operator has a system called DCS. That's Sperry's name for their input system. I don't know if stands -- what it stands or, but it's the computer input system of the operator. And he automatically has that area pop up that says the location and all that stuff that they marked, and he physically puts in, you know, the size of rail, the type of defect, and what he had physically measured ultrasonically with, you know, with the hand test. All that stuff is input then, right then when he's making the test.

Q. Okay. Now, is that tied into the ITIS system and --

A. No, no. That's just -- that's only test system on the truck itself. It doesn't get to us until a nightly download. So we are trying to, you know -- every night, it gets downloaded and consolidated with a co-consolidated report. That report is then transferred electronically in, you know, in a system that out --

you know, in a format that allows our system to directly input it. It also is sent in a Word format for, you know, just viewing it, but the actual system that goes into ITIS is in a, you know, in a computer format. I don't think it's that complicated, but it's like comma-delimited. If you're just looking at it, it doesn't make a lot of sense, you know. But it correlates to the Word file, so it goes both ways.

Q. Okay, good. Do you see any difference in the operation of the results between a truck-based and more of a rail bound, more traditional Sperry?

A. We have not used rail bound vehicles for normal tests since I've been in this position. Now, I know some of the other roads use it for different reasons, but it's -- I don't know of any road that uses it because it provides a better test. They do it for other reasons.

And so, I don't know of any -- the only difference that I even -- the systems are almost identical. The only thing that isn't identical is they use a little bit more current for the induction, and Sperry is the only one that has induction. So that's the only real difference. Otherwise, the carriage tracking and all that kind of thing doesn't -- I don't think it makes any difference between the rail bound and the truck.

Q. Okay, great. Are there occasions, Brad, where you might have a defect that doesn't require remedial action? I know there may be an internal rail flaw, but -- it's not a FRA defect, but

you know it's there.

A. No, I can't think of any case where we -- if we went over any sort of TDD, vertical, you know, horizontals, anything, I can't think of one case where it wouldn't be marked.

Q. Okay, great. And then just one last question, just a question -- just a matter of process. In your experience, is it normal -- you know, is there a crew that follows the car to make immediate repairs or --

A. It really does vary from place to place. A lot of times they'll put a section on sometimes behind us and they'll have, you know -- they won't even -- they'll bar it like instantly, and sometimes, depending on, you know, I guess the resources and coordinating the workforce -- I think Randy would probably be better to answer that one than I would because that's his guys. But they do follow us sometimes with the section truck, I can tell you that, but not every time. In fact, I don't -- I wouldn't wage what the percentage is. It's probably not even 50% of the time, but it's common.

Q. Yeah. Okay, good.

MR. INCLIMA: That's it. That's all I have for now, Randy. Thank you.

MR. HIPSKIND: Thanks, Rick.

MR. INCLIMA: Thank you.

MR. HIPSKIND: Randy, can I jump in here with just a few questions before your turn at this?

MR. DANIELS: Certainly.

BY MR. HIPSKIND:

Q. Brad, I'm going to jump around, but I want to come back and tie up some loose ends for my better understanding, okay? In all this data that is gathered from the testing -- I want to be clear -- Sperry, at their end, archives all this stuff; is that true?

A. Correct.

Q. And do we know for how long they archive it?

A. I do not know that answer. I know we can go back --

Q. Well, give me your best guess.

A. Years and years.

Q. Okay. So at least, at a minimum, probably several years?

A. I would -- I hate to guess on it, but I know they have pulled historical data for us that has spanned several years.

Q. Okay.

A. So I can't say if it's forever or a decade, but I do know that we consider it our property, or the test data, so they may keep it indefinitely.

Q. And that may be a function of your contract with them that you want them to do that?

A. I'm sure that's in the contract. I don't know the exact wording on that, but --

Q. Okay. All right. When they operate the car, whether

it's the rail bound or the truck -- and I'm talking about Sperry, but I think it probably applies to Nordco too -- is it true that they use icons to populate the electronic strip chart?

A. That's correct.

Q. And let's -- give me some examples of some common things that you see there from time to time.

A. They'll icon surface conditions, if they're having trouble with some surface. For instance, if you've got some sort of RCF, they would -- they might icon surface conditions.

Q. RCF means rail surface --

A. No, rolling contact fatigue.

Q. Okay.

A. So if you have, for instance, head checking or especially center spalling, which is really the, you know, the worst one for us because you've got to think that when their RSUs or their ultrasonic wheels are rolling along, they basically are in the center of the rail. So if you get center spalling, that's definitely an issue. So that's probably the worst kind of RCF you can have for rail testing. Not that it isn't affected by other things, but that's -- typically, they're measuring everything from the center of the rail, so if you think of it that way and they're shooting, you know, a view into the rail from the center and if that view is blocked, then we aren't getting a valid test.

Q. And that's the important thing is the blocking, the interference of what it is you're trying to do?

A. Correct, yeah.

Q. Okay.

A. I mean, and that can be -- it can also be if you have grease, you have trouble reading through that. You can have, you know, RCF.

Q. Well, you're going right where I was going with my next question, which is two questions, and you can answer them in whatever order you want. I'm wondering -- because when I was out there, I didn't see any trackside lubricators and somebody said to me, well, hey, Dick, they -- these things are on the locomotives now, and I get that, or it can be a combination of both. But in terms of getting the best test that you can, how do you communicate to the operating people that, hey, we don't want the locomotives greasing? Do you ever have a cessation of that prior to testing or -- tell me what your thoughts are on that.

A. Can you re-word the question just so I can make sure I don't --

Q. Well, I know that was a little bit complicated. Here, just -- this is why I'm asking. Does anybody reach out to the operating people and tell them, hey, on the locomotives, don't grease because we're going to be out here rail testing in a couple days?

A. We do, yeah. If we note heavy grease, we -- if we note heavy grease and it's an issue, there are things we can do, sort of. But if it's too heavy, then we have to go to and tell them

that we need to cut the grease out, you know, a day before, at least a day before the test. So we've run into that situation, but, typically, it's got to be laid on really heavy for us not to be able to test. But there is times when it's really heavy and we have to go to the division. Typically, it's maintenance of way forces that control that.

Q. Local assessment?

A. Here?

Q. I mean, well, in what you're describing, it's a local assessment issue by maintenance of way prior to the testing?

A. That's correct. And wayside lubricators are typically turned off prior to the test, so --

Q. Okay. I've --

A. They're -- we try to turn them off prior to the test. Let's say that. Because there is times where we definitely run into some issues with grease, but --

Q. Now, back to the archive and talking about this grease thing and surface conditions, rail surface conditions; not surface as in geometry, but rail surface conditions. How often do you get a non-test icon or comment, you know, we traveled this section, we traveled these mileposts, or we traveled around this curve and we didn't get a test? How often do you see that?

A. It's common, very common. And it's -- relative to the track coverage, though, it's very small when you look at it based on the entire system that we test, but it's marked -- we call them

SSCs and LERs and they're non-testable areas.

Q. Tell me what the acronyms stand for because we're always wanting to know that.

A. SSC is spalling, corrugation, and shelling. So it's spall, shells and corrugation and it's just a --

Q. The reason why.

A. -- telling you that there's a surface condition there. It may not cover --

Q. It's the reason why we didn't get the test?

A. Correct.

Q. And you had a second acronym.

A. And the second one is LER and that's just loss of expected response. And, typically, we use -- typically, it's the same thing, LER and SSC, when it comes to rail testing. That means that we're not -- typically, we lose the bottom of the rail with -- so when we're shooting an ultrasound signal straight down, we don't get one back, and that's what they call losing bottom. And that's usually caused by RCF on top of the rail or it's caused by heavy grease or maybe tar tracked across the crossing. We call those LER. Anything caused by rail surface conditions, we call them SSCs.

Q. And could there be a case of carriage misalignment causing that as well?

A. Absolutely, yeah. The procedure is if they get extended periods of LER, then they back up and rerun --

Q. Okay.
A. -- and they can readjust.
Q. And I get that. That makes sense.
A. Right.
Q. But what about, whether they make a rerun or not, they just got -- they're looking out the back window.
A. Um-hum.
Q. Let's put that in the record. The operator's sitting there and he's looking at the strip chart, he's looking out the back window in real time, and looking and making assessments and judgments of what he sees in the -- on the rail, in the field, with the strip chart. Is that fair to say?
A. Yes. And Sperry, in addition to that, has what they call a vision system, and it's a camera-based system that when something is iconed or blocked, the vision takes a snapshot of it, cameras and lights underneath the truck.
Q. So, in other words, this is what caused that icon to pop up?
A. Correct.
Q. And if somebody wants to review that, they can?
A. Correct. And a big reason for that is welds. If you come across the weld, you'll get fillet shots in the weld from the offset and it looks very similar to defects when you have that. So having the vision system was supposed to make it a little bit more efficient testing because they can see automatically that

it's a weld and they can relate those indications to welds.

Q. Okay. And you were describing just sort of a terminology that I'm familiar with when you were describing the software, and the term I use for that is that it's pattern recognition.

A. Uh-hum, that's correct.

Q. And tell me if I'm thinking about this correctly. The idea behind pattern recognition is that the software and all of the inputs into the datastream, it's almost like an aid to the operator and I, in my other conversations with Nordco and such, I took that to be -- that's an aid to guard against a miss by the operator?

A. Correct. Because they're looking -- you can only imagine how many things they're looking at when you're looking at every, you know, every sixteenth of an inch of every piece of rail of 20,000 miles and there's just tons of indications. So to be able to stay on top of those indications, it is essential for them to have these modern testing systems that automatically block those indications that are, you know, not normal.

Q. Okay. And I would also like to add into the record, is it your understanding that because of that type of software pattern recognition, we should let people know and understand there are alarms that come along with them? So it's not just only visual, it's audio and it's all about, hey, the system is seeing something --

A. Right.

Q. -- slow down and take a look at it, and certain indications do cause them to go back and do a retest or a hand test for validation purposes?

A. Correct. And certain ones require them to acknowledge them.

Q. Okay.

MR. HIPSKIND: Now, I've just got just a couple more, and then, Randy, I'll pass it over to you.

BY MR. HIPSKIND:

Q. Brad, you may not know this, but I'm going to ask you how we can know and understand the answer to this question. I'm going to guess that the Old Main Line Subdivision hasn't been doing the 31-day frequency forever, and I'm trying to understand when and why -- at what point in time were they testing at, say, a less frequency, and then they went to the 31-day? Can you help me out with that?

A. I don't know -- I can't, because I only went back the last year. And I kind of thought, well, you might -- you're going to be asking about the cycles that we used for the Old Main Line. So I went back to last year's and we were testing it at 31 days last year. I did not go back further to look to see if it was at a different frequency prior to that. I only looked last year. Last year was 31 and this year was 31.

Q. Well, who would you suggest that we reach out to, to

find the answer to that question?

A. Me, probably. I just didn't go back far enough to --

Q. Okay. All right. But is it something that maybe you can go back with ZETA-TECH or Sperry --

A. Yes.

Q. -- to see that transition?

A. We've been using ZETA-TECH since 2004, so, you know, we can go back to at least 2004, when we started this risk-based testing.

Q. Well, I want to make a formal request with you to try and drill down on that.

A. Okay.

Q. All right? And we'll probably have some follow-up e-mails and such. And I'm sure that when we get some of this other data from these other previous tests, we may reach out to you with some questions as well.

Last question for me for right now. When Rick was talking with you about the vehicles going down the road and it's picking up data and it may be giving you indications -- I want to be clear about this -- is the procedure that we're going to stop and mark those rail defects that are regulated? In other words, there's certain types of rail defects that are regulated by FRA. And the second part of that is what's the cutoff?

I think Rick was asking, you know, kind of what's the cutoff and I'm interested in that. So if you go down there and

you see a TDD and it's 5%, is that something you would expect them to stop, measure, and mark? And so the other shorter side of that is, if they're going down the track and they're testing and maybe they're seeing less than 5%, they don't stop or they don't pick it up? Help me out with that.

A. I can't think of any instance where if they indicate a defect that they wouldn't stop based on size. Say, they think it's only 5% and, you know, this track is only this fast or something like that, we're not going to mark it. There's just not a case where that would be.

Q. But there are limitations to what they can detect?

A. Correct. And even if you look at AREMA and all of that, they've got the probability and all this stuff of detection. And if you look at TDDs, and the smaller it is, the harder it is to detect, is basically, you know, what you would expect, you know. And -- but I think at 5 to 10% -- I was just looking at this a couple of weeks ago and I -- don't quote me, but I think it's 65% is what your probability of detection is, being able to detect it, even in perfect conditions, you know. So, you know, and when it's gets real small, there's just -- you can't distinguish between the real small, small indications and what would be a defect. The sensitivity of the system just isn't there for that.

Q. Okay. Brad, you're doing great. Thanks for fielding those extra questions for me.

MR. HIPSKIND: And, Randy, let me turn it over to you.

BY MR. DANIELS:

Q. And I just have just a couple. And since I'm a track guy and you're a rail guy, I just want to clarify one thing. When you spoke -- through this whole thing, when you're talking about surface irregularities, you're talking about the rail surface, the physical top of the rail, not --

A. Correct.

Q. -- my surface, which is track surface?

A. That's correct.

Q. And then when you talked a little bit about marking defects and how they mark them, how -- is it very clear to anybody who was out to a defect where exactly that defect is? Do they mark that clearly on the rail?

A. On the TDD, they put a -- they would put what we call a crow's foot on it. And I know you know the -- you know, it just looks like a crow's foot, and I think everybody's -- so, you know, it kind of looks like an upside down fork and it's that line --

Q. So my question would be somebody going out there, even if they didn't know anything, they would know that that's where the defect is?

A. If you were looking at the markings on the rail from the test operator, I don't, I do not believe that it would be confusing at all, at least with the TDD, with the -- or a transverse defect. Longitudinal defects, you know, you put the distance and you mark the distance. Even then, I don't think it

-- there would be any confusion.

Q. Okay.

MR. DANIELS: That's about all I had.

MR. HIPSKIND: Thanks, Randy.

Brad, are you doing okay? Do you want to keep going?

MR. SPENCER: Oh, I'm fine, yeah.

MR. HIPSKIND: Okay, Larry, back to you?

MR. KISH: Yes.

MR. HIPSKIND: Okay.

BY MR. KISH:

Q. Larry Kish, K-i-s-h, with the FRA. Brad, after reviewing the last ultrasonic screenshots, did you see any indications or do you know if this vehicle backed up on any of this area in question of the derailment?

A. On the last test?

Q. Yes, on the last test.

A. I did not see any -- in the area that I looked for this derailment, which was on each side of the actual derailment area, I did not see a rerun on 8-3.

Q. Okay. And, hopefully, you can answer this. Can you give us a plain simple explanation of gains and gates?

A. Well, it's -- gains and gates is how they -- the B-Scan system on the 1900 is set up on a Sperry truck. So, what it does is it gates the time that --- if you send out, for instance, an ultrasonic signal at an angle on the rail, it's going to hit

everything. I mean, you have to gate a certain area of time or else you're going to see all kinds of reflections in the rail. So if you don't gate a time, you know, because you know exactly at what frequency your ultrasound is and the speed that it travels through the rail, so you can determine exactly how many inches that you want to look at when you're shooting something into the rail. So your gate and gains is, how you gate it is the time that you're looking at the ultrasound.

Q. Very good.

A. I don't know if I -- it is kind of a complicated thing because if you start determining all the angles and exactly the view that you want to see in the rail, it gets -- it sounds simple that you say you only -- you know, you've got 15 channels on each side, but to get all that working in those time limits and -- you know, it's a pretty complicated system. You know, adding oblique angles is, you know, really a challenge. That's why crossfire, you know, when it came along, it was a huge improvement to be able to have that angle up into the corner, you know, because it's really challenging for all that stuff.

Q. Depending on the rail conditions, can the gains and gates be manipulated by the operator?

A. Yes.

Q. And that would only be if he was picking up a lot more noise or sound?

A. Correct.

Q. And I'll go back to the positive zero. If he picked up a positive zero, would he want or maybe could manipulate the gains and gates?

A. On a positive zero, no, because -- see, a positive zero doesn't really say that -- it just says that you are getting a reflection from the zero. It doesn't say that you're not getting bottom. When you lose bottom, that's the real issue with, you know, getting a -- the positive zero is just telling you that you're hitting the sides. It doesn't say that you're not being able to read the bottom of the rail, which is a big difference. And when we can't read the bottom of the rail for, you know, long distances, then that's a real issue. That's when you have the LER or SSC.

You wouldn't need to manipulate them just for, you know, a positive zero because it's really about hitting the -- you know, just hitting the fillet or the web of the rail with the zero because you're alignment's off a little bit. I don't know if that answered the question, but --

Q. Yeah. I'll give you an easy one for my last one.

A. Okay. All right.

Q. What's the -- do you have or do you expect an average speed from these vehicles while testing?

A. Oh, yes, absolutely.

Q. And would you like to tell us?

A. My goal is 5.38 mile per hour. That is our goal. Above

-- we're trying to test above that speed because our average last year was 5.38 and that's our goal is to beat that average from last year. And we keep adding more and more technology to try to, you know, aid in our -- in getting a valid, a good valid test without compromising quality and increasing speed, and vision was --

Q. I'll ask you --

A. -- one of the systems that were developed to try to, you know, to do that, but it really hasn't helped us with speed. But I do believe it helps on the test, so I think it's a better test with vision.

MR. KISH: That's all I have.

MR. HIPSKIND: Thank you, Larry.

Frank, do you want to jump in again?

MR. CROWTHER: Frank Crowther, FRA. I really don't have any questions of you, Brad.

MR. HIPSKIND: Rick, any follow-up?

BY MR. INCLIMA:

Q. Just one, Brad. Did you say there was no loss of bottom in that readout on the last test?

A. I don't -- if there was, it was very small, but not around the derailment. I looked at it. But you do see it's a little bit of reflection from a positive zero and you see a little bit of noise on Gauge 70, which is very common for, you know, little issues with alignment. But there's no -- I don't believe

there's an LER. Now, there was the test before and they reran it, the one on 7-6. But I'm -- that's what I'm saying, I'm pretty sure there was no -- there was none. I could tell you absolutely here, you know, if I pull up my computer. But I'm almost positive there wasn't.

Q. Thank you.

MR. HIPSKIND: Randy, any follow-up?

BY MR. DANIELS:

Q. The operators, if they run less than 5 miles, 5.38 miles per hour, is that their judgment to do that? And they can go as slowly as they want to?

A. Absolutely. We -- there's plenty of places that we don't run 5.38 miles average. I mean, our goal is 5.38 overall. We don't put a goal on our mileage. We give a -- we have a time goal. 240 minutes is our goal every day, to get track time for 240 minutes, and we have always kept to that standard, where a lot of other people have -- or other roads have gone to a mileage goal. And the reason why I've always tried to keep that -- and we had it before me, but I've had a lot of pushback, people wanting to put mileage goal, and I said, well, that -- the reason is, is because some places require you to go a little bit slower and some -- and we don't want to compromise our speed and quality; we want to keep minutes and not mileage, and that's why we use minutes.

And there's not anybody, I don't think, in maintenance of way in our company that doesn't know our goal is 240 for the,

you know, for the test cars, and nobody's every asked me about, you know, how many miles do you want to get because they don't -- everybody shoots for that 240. So the question is -- the answer is we don't look at the speed on individual segments as much as we do at overall speed.

BY MR. HIPSKIND:

Q. Okay, let me jump in here for a clarification. When you say 240, you're talking minutes?

A. Yes.

Q. And so, the 240 is representative that in a day's charge for the services, the 240 refers to we were out there and productive for at least 4 hours?

A. Correct.

Q. Okay. And when you fall below the 240, I mean, you're spending a lot of money, but you're not getting a lot of the test done --

A. Right.

Q. -- and that's just putting you behind every day that you're not meeting the 240?

A. Increases risk, yep.

Q. Okay. All right. A couple of things I want to clear up here. I want to make a comment on the 31-day test cycle. You can't test any more than that. I mean, you can't or either don't test anywhere on your system more frequently than 31 days; is that a true statement?

A. That's true.

Q. And a lot of this -- and you and Larry talked about how that's set up and a lot of inputs go to ZETA-TECH, and ZETA-TECH basically comes back and recommends or says, you know, you ought to be on a 31-day cycle?

A. Yes. We have -- that's our tightest frequency that we test, that is 31 days, and that --

Q. Okay. Now, I'm going to ask you the broader industry question. Do you know of anybody testing more frequently than 31 days?

A. I only know of one area. I'm not sure if it was BN or UP that tests more often -- in the Powder River Basin, they test at a, I believe, a 15-day frequency, and that's the only place that I know of that's that low of a frequency. And I don't -- you know, I'm not -- I don't really know that for sure, but that's what I was told.

Q. Okay, that's something I'll look into. Because when I initially got out here and was hearing about the 31-day cycle, BNSF and the Powder River Basin came right to my head and I thought, wow, you guys were testing very close to theirs. But if you're saying it's 15 days, well, then there's --

A. Their tonnage is, you know --

Q. It's off the chart.

A. It's like five time higher or something than where we are on the Old Main Line. And our requirements now are we're way

ahead with our risk-based system with the current requirements, so we're -- you know we're probably testing -- well, we would be required to test that twice a year. So that's it.

Q. Okay. You were out there and helped us extensively with the rail rebuild.

A. Correct.

Q. Do you have any comments about that? Do you think we were on the mark, in the right area?

A. I do believe we were in the right area, yes. We were missing a few pieces and I would have, you know, loved to have found those pieces, but it's very difficult, you know, in that environment to find every one of those, especially when they shot into the parking lot and the other direction, and it was challenging.

Q. Okay. But the reason I asked you about that -- and I want to tie it back into the testing data. Is it true that in a lot of all this Sperry datastreams, data collection, a lot of these points of interest, defects, et cetera, they are GPS located tagged, correct?

A. Correct, yes.

Q. And I think you and I had a conversation out there about where there were joint bars and where there were welds with holes, that those will aid us in computing where things are in the rail rebuild --

A. Yes, that's correct.

Q. -- as well as a reconstruction factually.

Okay, and I also want to get on the record that when you and Larry were talking about testing the ball of the rail and whether things were centered correctly and reading down through the web, it is the ball of the rail and the web of the rail that you're testing and the point being you're not reading or testing the base of the rail, nor do you expect to, nor can you?

A. That's correct. We don't have the technology to test the base yet.

Q. Okay. And in areas where there may have been a derailment or something and there might be some base of rail damage or something, that's nothing that rail testing, no matter how frequently it's conducted, it just can't aid in knowing when and if some damaged base is going to be susceptible to a break?

A. That's a true statement.

Q. Okay.

MR. HIPSKIND: I'll just look at -- anybody else have any other follow-ups?

UNIDENTIFIED SPEAKER: No.

MR. HIPSKIND: Larry?

Okay. And I'm going to tell you this, and I'm just being honest with you, Brad. You know that we've got some more data and I would just ask that you continue to be as cooperative as everything that you've done so far with the rail rebuild and everything. And I'm sure Larry and I or others are going to be

reaching out with maybe some questions and some clarifications. And although we probably won't ask to re-interview you, we will try and reach out, either in a telephone conversation or an e-mail, when we just digest more of this information.

MR. SPENCER: Absolutely. And I'm more than willing to help any way that I can within my, you know -- what I'm able to, you know.

MR. HIPSKIND: Okay. And as I've said with the other interviewees today, if in your time away from us after this interview, if you think of something or you replay some of the things that we discussed and you find that there is something that, oh, gee, I should have told them this or that, don't hesitate to reach out to us. You've got Randy and you know Larry and you've got my business card, so don't hesitate to give us a call and help us out in just our overall understanding of everything you're doing.

MR. SPENCER: Okay.

MR. HIPSKIND: All right? And with that, great job, and thank you for being here and participating in the interview today.

MR. SPENCER: Okay, thanks.

UNIDENTIFIED SPEAKERS: Thank you, Brad.

(Whereupon, the interview was concluded.)

CERTIFICATE

This is to certify that the attached proceeding before the

NATIONAL TRANSPORTATION SAFETY BOARD

IN THE MATTER OF:	CSX TRAIN DERAILMENT AUGUST 20, 2012 ELLICOTT CITY, MARYLAND Interview of Bradford Spencer
DOCKET NUMBER:	DCA-12-MR-009
PLACE:	Ellicott City, Maryland
DATE:	August 24, 2012

was held according to the record, and that this is the original, complete, true and accurate transcript which has been transcribed to the best of my skill and ability.

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Karen M. Galvez
Transcriber